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SECTION 1: PROGRAM DESCRIPTON

I.1.1 History and Mission

Rensselaer Polytechnic Institute, the nation's oldest technological research university, was established as The Rensselaer School in 1824 by Stephen Van Rensselaer *"for the purpose of instructing persons … in the application of science to the common purposes of life."* It is *"… the first school of science and school of civil engineering, which has had a continuous existence, to be established in any English-speaking country"* according to Palmer C. Ricketts in his preface to the second edition of his *History of Rensselaer Polytechnic Institute* (1914). In 1833, the school became the Rensselaer Institute, and in the 1850s, its purpose was broadened to become a polytechnic institution. In 1861, the Institute's name was changed to Rensselaer Polytechnic Institute.

Over time, Rensselaer has evolved into a fully realized university of 5,557 undergraduates and 1,471 graduate students. They are drawn to the sciences and technology, and to disciplines ranging from architecture and engineering to business and the arts. Benefiting from a legacy of bold exploration, the university is comprised of a diverse community of students and faculty committed to moving theory into practice, with the larger aim of contributing to the world on a transformative level.

A nonsectarian, coeducational institution, the university offers degrees from five schools: Engineering; Science; Architecture; Humanities, Arts and Social Sciences; and the Lally School of Management; as well as an interdisciplinary degree in Information Technology and Web Science. Institute programs serve undergraduates, graduate students, and working professionals around the world. Nearly 31% of 2015 undergraduates come from areas outside of the Northeast. First-year students hail from 43 states, the District of Columbia, Puerto Rico, and from countries all around the world.

Rensselaer offers more than 145 programs at the bachelor's, master's, and doctoral levels. Students are encouraged to work in interdisciplinary programs allowing them to combine scholarly work from several departments or schools. The university provides rigorous, engaging, interactive learning environments and campus-wide opportunities for leadership, collaboration, and creativity.

For almost 200 years, Rensselaer has maintained its reputation for providing an undergraduate education of undisputed intellectual rigor based on educational innovation in the laboratory, classroom, and studio. Driven by talented, dedicated, and forward-thinking faculty, Rensselaer has dramatically expanded the research enterprise by leveraging existing strengths and focusing on five signature research areas: *biotechnology and the life sciences; energy and the environment; computational science and engineering; nanotechnology and advanced materials; and media, arts, science, and technology*.

The Institute is especially well known for its success in the transfer of technology from laboratory to marketplace, where new discoveries and inventions benefit human life, protect the environment, and strengthen economic development. From the design of the Ferris Wheel and the Brooklyn Bridge to the inventions of the digital camera, silicon transistor and network email, Rensselaer's distinguished alumni have offered have offered life-changing technological and profoundly important contributions to the world.

The mission of Rensselaer is to: "… *educate the leaders of tomorrow for technologically-based careers. We celebrate discovery, and the responsible application of technology, to create knowledge and global prosperity."* Its institutional goal is: "*To achieve greater prominence in the 21st century as a top-tier world-class technological research university with global reach and global impact."*

Since 1999, under the visionary leadership of Dr. Shirley Ann Jackson, the 18th President of Rensselaer Polytechnic Institute, the institute has been rigorously guided by two strategic planning frameworks: *The Rensselaer Plan,* and *The Rensselaer Plan 2024,* which should be credited for transforming the institute

into a world-class technological university. Over the last 15 years, more than $1.25 billion has been invested in realizing *The Rensselaer Plan*, and the campus has been transformed by state-of-the-art research platforms including the Center for Biotechnology and Interdisciplinary Studies, the Curtis R. Priem Experimental Media and Performing Arts Center, and the Center for Computational Innovations, which houses the most powerful supercomputer at a private university in the U.S.. Dr. Jackson prepared Rensselaer for leadership in areas of research that are of fundamental significance in the 21st century by focusing on "signature thrusts" in computational science and engineering; biotechnology and the life sciences; nanotechnology and advanced materials; energy, the environment, and smart systems; and media, arts, science, and technology.

The Rensselaer Plan 2024 serves as a guide as the university moves towards the bicentennial of its founding in 2024. It is intended to make Rensselaer transformative in the global impact of its research, in the lives of its students, and in its pedagogy. Towards that end, forward-looking research initiatives at Rensselaer are underway to address the greatest challenges of humanity in energy, water, and food security; national and global security; human health; climate change; and the allocation of scarce natural resources. These initiatives include The Rensselaer Institute for Data Exploration and Applications, or "The Rensselaer IDEA", which brings together the strengths of the university in web science, high-performance computing, cognitive computing, data science and predictive analytics, and immersive technologies—and links them to applications at the interface of engineering and the physical, life, and social sciences—in order to answer complex questions that never could be answered before–questions at the root of global challenges.

In accordance with *The Rensselaer Plan 2024*, the university offers a complete student experience for graduate students as well as undergraduates, through Clustered Learning, Advocacy, and Support for Students [CLASS]. Rensselaer also is taking the lead in pedagogical innovation, including creating the multiplayer and mixed-reality classroom, as well as cyber-enabled discovery and learning—all of which are informed by the cutting-edge research at Rensselaer in data science, immersive environments, artificial intelligence, and cognitive science.

Guided by *The Rensselaer Plan 2024*, the institute is committed, in the words of Dr. Jackson, "to the vision of the *The New Polytechnic*: a new paradigm for teaching, learning, and research" for the 21st century in support of, "a view of the technological research university as a fresh collaborative endeavor across disciplines, sectors, and global regions. Such a university leads by using advanced technologies to unite a multiplicity of disciplines and perspectives, in order to take on large, multi-faceted challenges."

School of Architecture History

The School of Architecture's history dates back to 1848 when Benjamin Franklin Greene, the senior professor and director at Rensselaer at that time, traveled to Europe to undertake the first systematic study of educational models, examining, among others, the *École Des Beaux-Arts* and *École Politechnique* in Paris. Upon his return, he wrote, *The True Idea of a Polytechnic*, premised on looking forward to the creation of a new world. He proposed the "Rensselaer School" become "The Rensselaer Polytechnic of Engineering and Architecture," asserting Architecture to be essential to any polytechnic "worthy of the name." While fulfillment of this vision would have made our School of Architecture the first in North America, Greene's recommendation finally became reality in 1929. The first architecture students graduated in 1933.

The Department of Architecture, later renamed the 'School of Architecture', remained small in its early years, placing emphasis on a more pragmatic approach for the study of architecture. Professor Turpin Bannister, a founder of the Society of Architectural Historians, introduced the study of history into the program in the 1930s. After World War II, the program grew in size and developed depth in the areas of

structures and building construction. A design emphasis emerged in the 1960s, with greater concern for urban design and social issues.

More recently the School has become more aligned with the institute's larger commitment and long-term legacy surrounding science, engineering and technology. Three distinct graduate research programs were established in Lighting, Architectural Acoustics, and Built Ecologies, broadening the intellectual diversity of the school as well as promoting a larger vision of architecture as a constellation of interdisciplinary exchange. Committed to the proposition that architecture at its best is a combination of art and science, where building design is rigorously informed by a strong technological and environmental underpinning, the RPI graduate is well prepared as a future practitioner, to respond forcefully and creatively to the unique challenges of our time.

School of Architecture Mission

The School of Architecture's mission is "*to prepare creative, culturally and technologically astute and socially conscious practitioners of architecture and its related fields, for international practice in the 21st century."*

In preparing our students to become future leaders in the profession, we ensure that they are: 1) creative innovators; 2) proponents of integrating design and technology 3) open to interdisciplinary collaboration and emerging practices in a variety of allied fields, 4) aspire to well-designed buildings capable of contributing on the highest level to the built environment and 5) conscious of the profound contribution architecture makes on a cultural, ethical and environmental level around the world.

To participate internationally and have global impact, architects must be nimble and prepared to recognize and address the unique context specific to a broad range of communities around the world.

School Portfolio

The School offers two professional degree programs leading to NAAB-accredited Bachelor of Architecture (B.Arch) and Master of Architecture (M.Arch) degrees. The B.Arch program has been continuously accredited by NAAB since 1945. The M.Arch (first professional degree) has been continuously accredited by NAAB since 1979. In addition, the school offers a B.S. in Building Science, a Master of Science and Ph.D.. in Architectural Sciences with concentrations in Lighting, Architectural Acoustics and Built Ecologies, a M.Arch II degree in Architecture with concentrations in Ecological Urbanism and Environmental Parametrics and has two research centers: the Lighting Research Center [LRC] and the Center for Architecture Science and Ecology [CASE].

B.Arch Program – Beyond offering a comprehensive and rigorous architecture program in preparation for professional licensure, the program draws upon an extensive amount of disciplinary expertise from all three graduate research programs in the school portfolio: Lighting, Architecture Acoustics and Built Ecologies. Representing a broad diversity of important associated knowledge, students have the opportunity to broaden their intellectual diversity by studying at CASE in NYC for one full semester, or to pursue a minor in either Lighting or Architectural Acoustics.

In addition, the Institute has made it possible for high-achieving students to participate in "co-terminal" degree programs that allow architecture students simultaneously (typically after 6 years) to obtain concurrent B.Arch and Masters degrees (e.g. Masters of Engineering, or M.S. in Architectural Sciences with a concentration in Lighting or Architectural Acoustics, etc.).

M.Arch Program – Also conceived as a premier professional program, significant efforts have been made on the part of the leadership to develop a more distinct and unique identity. As a result of recent curriculum changes, our M.Arch program (pending approval from NYS) will be a 3-year program. It is a first professional degree program for students holding bachelor's degrees in alternative fields. Applicants

with previous architecture study may be considered for advanced standing. M.Arch students are required to spend one of their semesters embedded in the Built Ecologies program, at the Center for Architecture Science and Ecology [CASE] in New York City.

Graduate Research Programs – Our School's three internationally renowned graduate research programs provide an exemplary educational experience for our M.S. and Ph.D.. students, as well as an impressive constellation of intellectual diversity invaluable to both the B.Arch and M.Arch professional programs. Undergraduates are encouraged to take courses, acquire minors, and pursue co-terminal degrees in any one of these three outstanding research programs.

The Master of Science in Architectural Sciences degree provides opportunity for advanced studies in a research context related to the Ph.D. program concentrations in Architectural Acoustics, Lighting and Built Ecologies. The Doctor of Philosophy degree in Architectural Sciences is designed for graduate students prepared to undertake innovative and substantive research that adds to the body of knowledge drawn on by the design disciplines, and who desire a career in teaching, research, specialized professional practice or consulting. The doctorate is an inherently inter-disciplinary degree in which research is informed by both disciplinary depth and trans-disciplinary integration. The program is structured to foster a community of students and scholars, a collaborative environment in which lateral flows of ideas and influences enrich the research agenda of each member of the community.

Architectural Acoustics Program - Established in 1999, it offers a rigorous curriculum in acoustics for effectively shaping sonic environments to achieve optimum acoustic performance and sound quality. Offering studies toward both Master of Science and Ph.D. degrees, this unique program provides the knowledge and skills required for the next-generation of acousticians involved in room acoustics, psychoacoustics, acoustic and vibration measurement techniques, and sound reinforcement to excel in a career of advanced practice and/or applied research.

Lighting Program - Established in 1988, as an academic and research outgrowth of our Lighting program, the Lighting Research Center [LRC] is considered the premier lighting research center in North America. Work focuses on the areas of LED development, Light and Health, and lighting product testing and validation. Forging strong ties with public benefit non-profit organizations, manufacturers, utilities, and government agencies worldwide, the LRC maintains a global network of funding support, educational outreach initiatives and innovative approaches in lighting that have contributed significantly to strengthening the performance of energy in the built environment. Acquiring over $100 million dollars in research awards from federal and industry resources since its inception, the center sustains a highly productive research agenda with global impact. Advanced studies research degree programs offered at the LRC are educating the next generation of lighting leaders.

Built Ecologies Program – Established in 2008, as an academic and research outgrowth of our Built Ecologies program, CASE (Center for Architecture Science and Ecology) is co-located at the offices of Skidmore, Owings & Merrill [SOM] in NYC and the Troy Campus. CASE became an Institute-wide Center in 2014. Its work focuses on accelerated innovation of radically new sustainable built environments through the development of next-generation sustainable building systems. CASE unites advanced architectural and engineering practices with scientific research through a unique and intensive collaboration between multiple institutions, manufacturers and professional offices within the building industry. At CASE, actual building projects are used as research test beds. In addition to its research enterprise, CASE is home to the M.S. and Ph.D. Built Ecologies programs. All M.Arch students and select B.Arch students spend a semester there, taking courses and participating in research under the guidance of faculty and graduate students.

Ways in Which the School Benefits the Institution

School-based Pedagogically Innovative Initiatives - In recognition of the unique challenges facing the profession of architecture today, Rensselaer's School of Architecture established a series of strategically important programs and initiatives for students throughout our professional programs aimed at strengthening the overall creative and intellectual breadth of our students. With an emphasis on increasing awareness concerning the importance of cultural diversity, interdisciplinarity, the study of architecture as a combination of art and science, collaborative engagement, community outreach, sustainability, leadership and global citizenship, the following activities and initiatives below represent a major educational asset for both the program as well as the institute at large.

1. Commitment to Global Citizenship – The School provides a culture that engages students in a wide array of rich educational and experience opportunities that are global in reach, technologically grounded, linked to research and experimentally progressive opportunities that are prepare them to lead in a changing profession and world. In recent years, some 70% of Architecture students have participated in a study-abroad (Bedford, Brown's or a semester in Italy, India or China) or the CASE program.

Study-Abroad Programs - Our highly popular programs offer B.Arch students semester-long programs in Italy, China and India, as well as numerous short international academic travel workshops integrated into on-campus design studios. Additionally, the School is finalizing agreements, with a proposed launch date FA16, with architecture schools in Argentina and Chile as a way to increase student focus on Latin America. In recognition of the profound impact an international experience has on our student body, expanding the program into a new region of great cultural significance in the world represents a significant accomplishment for the program.

Bedford Traveling Workshop – Our School also offers students a unique architecture/ engineering [A/E] opportunity known as the Bedford Traveling Workshop, which takes select architecture and civil engineering students and faculty to a foreign country in early summer each year to study best practices, and exemplary innovative buildings, bridges and other structures that rely on a constructive interdisciplinary discourse.

Brown's Traveling Fellowship – Each year the School awards traveling fellowships to several faculty and students on a competitive basis. Substantial funding allows winners to travel to a location of their choice, conduct their study, and make a presentation and exhibit of findings upon returning to campus.

2. CASE / SOM NYC Program – CASE, which began in 2008, has now become an Institute-wide Research Center, providing opportunities for faculty and students in other departments to join CASE in a variety of multi-disciplinary research efforts focused on next-generation sustainable building systems. With the recent addition of two new Ph.D. faculty whose expertise is in environmental sustainability, the CASE offers a variety of new research opportunities both on campus and in the CASE offices at Skidmore, Owings and Merrill [SOM] in New York City. Under the direction of Professor Anna Dyson, CASE engages undergraduates and graduate students in research projects with industry, government and other partners.

3. Bedford Studio, Seminar and Traveling Workshop – the Bedford Architecture/Engineering initiative creates cross-disciplinary experiences that address the increasing complexity and rising expectations for building performance and design. Under the direction of a visiting professorship designed to engage accomplished engineers with records of effective collaboration, there are three initiatives: 1) an upper-level interdisciplinary design studio, 2) an upper-level interdisciplinary seminar, and 3) an international traveling workshop, that in combination, provide invaluable knowledge and insight into the profound value of a more integrated approach for the profession of architecture.

Bedford A/E Interdisciplinary Studio – An upper-level architecture and engineering students work on a building design project structured to: raise awareness of the diverse responsibilities and agendas of architects and engineers, increase understanding of disciplinary language, and demonstrate the value of interdisciplinary input in the early design phases.

Bedford A/E Seminar – An interdisciplinary course exposing students to progressive historic and contemporary building projects that rely heavily on cross-disciplinary integration. The course requires creative collaborative interdisciplinary engagement.

Bedford Traveling Workshop - This international workshop sponsors the travel of six architecture students and six engineering students to an international location where concentrations of best practices and projects can be found. The workshop includes seminars at accomplished architecture and engineering practices, visits to acclaimed architectural projects, construction site visits, and a collaborative design exercise structured to catalyze interdisciplinary discourse.

The Bedford initiatives promote interdisciplinary discourse between Engineering and Architecture that has resulted in new minors and co-terminal degree options for architecture students while shaping the structural engineering track, with a focus on architectural projects.

4. Capital Region Initiative - To promote community engagement and service, the school launched the Capital Region Initiative in Fall 2010 as an opportunity to extend the 'classroom' beyond the Rensselaer campus. The school established a series of collaborative agreements with a broad set of cultural institutions throughout NY State that expressed interest in working with our students and learning more about the potential of building design as a way to transform their respective campuses. The Capital Region Partnerships include: The Shaker Museum in Lebanon, NY; The Hyde Collection in Glens Fall, NY; Sterling and Francine Clark Institute, Williamstown, MA; Storm King Arts Center, New Windsor, NY; OMI International Arts Center, Ghent, NY; and miSci: The Museum of Innovation in Schenectady, NY.

5. ART_X@Rensselaer Initiative - A programmatic and curricular construct with the goal of discovering art in science and science in art through trans-disciplinary inquiry and creative crossover, as outlined in the *New Polytechnic*. In support of this important Rensselaer initiative, the School of Architecture offers the following school-based interdisciplinary courses below, open to students and faculty throughout RPI.

Performance Installation Production (PIP) initiative – An interdisciplinary collaborative studio that brings together students and faculty from the School of Architecture and HASS/Humanities Art and Social Sciences to create a multi-media event-based performance open to the general public. Experts contributing to the program include: architects, videographers, acoustic/digital composers, musicians, sound artists, poets, choreographers, dancers, graphic designers, and audio and structural engineers.

Mestizo Robotics - This studio is an "art across the curriculum initiative" aimed to promote art, science and design interchanges among the institute's diverse academic units. Structured as a design-and-build seminar/workshop and studio is dedicated to development of interactive robotic devices with sensory capabilities for group behavior in relation to external forces (i.e. physical, environmental and virtual). This new course is open to students/faculty throughout the institute.

6. BLAST>OFF>off: career development chats - An evening roundtable discussion program between students and selected SoA faculty, with a focus on career development opportunities after graduation. Aimed at increasing student awareness of the broad range of professional opportunities available in the workplace beyond academia, one event is scheduled per semester. Committed to empowering the next generation of Rensselaer alum to assume leadership roles, this initiative is consistent with RPI's commitment to changing the world.

7. Troy, NY Waterfront Revitalization Project—Urban Furniture Initiative – This initiative with the City of Troy, NY, focused on creating Urban Furniture for Troy's Riverfront Park. With funding from the Troy Industrial Development Authority, a faculty-led design studio of 15 undergraduates generated a series of proposed play-scape designs for the public park. This effort is part of a larger strategic plan to offer the school's design expertise to the City of Troy, a historic post-industrial city with potential for revitalization.

8. AD-HOC Campus Design Charrettes -Initiated by the University President, specific AD-HOC campus design charrettes are organized to focus on an area of the campus requiring design reassessment. These have included: a campus-wide sustainability workshop (which included participation from the school of architecture) as well as landscape design proposals for the '86 field (exclusive to the SoA).

9. School of Architecture Lecture Series – Open to the entire campus and the public, our School's lecture series provides attendees access to 10-12 leading architects, cultural theorists, historians, structural engineers, technologists, curators, and artists from around the world annually.

10. School-based Summer Outreach Initiatives - The Institute, as part of its mission to offer students the "highest standards of academic rigor and character development as a catalyst for lifelong learning, thoughtful citizenship, and upward mobility," partners with Harlem Academy to provide students, parents, and teachers an opportunity to explore science, technology, engineering, and mathematics (STEM), on our campus during the summer. Architecture faculty participate in this program annually.

> *Career Discovery Program* – This program provides high school students a two-week intensive on-campus Introduction to Architecture at Rensselaer. Offered for high schools students interested in architecture as a life-long career, this exciting exploratory workshop provides an ideal initiation into a range of skillsets essential to the beginning student of architecture such as: abstract thinking, schematic design, digital and physical modeling, craft, and presentation techniques.

11. Smart Geometry Conference – Our School brought the 2012 Smart Geometry conference to campus increasing the Institute's and School's international reputation as a leader in advanced building technology and innovative pedagogy (i.e. immersive and interactive environments). More than 500 architects, faculty, students and industry experts from around the world joined this weeklong program of research, workshops, and conference symposia and lectures.

12. CRAIVE Lab Initiative - Providing a 360-degree multi-modal immersive environment for academic and research experimentation, simulations and gameplay, the CRAIVE Lab (a Collaborative-Research Augmented Immersive Virtual Reality Environment developed by an Architecture faculty member) represents the next-generation pedagogical classroom. The School has begun to target specific design studios that will use the lab, and researchers and faculty members from other departments/schools are finding ways to make use of this unique classroom and visualization facility.

13. Service to the Institute – Architecture faculty are actively engaged members of the Institution. Though the smallest of five School's, two Institutional Centers (CASE and the Center for Communication, Cognition and Culture [CCC]) are directed by Architecture Faculty. Committee memberships include the Faculty Senate, Faculty Senate Curriculum Committee, Resource Committee, Tenure and Promotion Committee, and the Assessment and Academic Standing Committees as well as numerous shorter-lived committees and task groups including the Middle States accreditation task group. An Architecture faculty member co-chaired the Institutes Core Curriculum Review and Implementation Committees and Architecture faculty participate widely on Ph.D. committees.

Ways in Which the Institution Benefits the School

The School and its programs greatly benefit from the polytechnic setting offered by Rensselaer. A top-tier technological research university with global reach and global impact, the Institute provides a vast culture of research and innovation that is intrinsically part of the ethos of the School. Well-known for success in

the transfer of technology from laboratory to marketplace so that discoveries benefit human life, protect the environment, and strengthen economic development, the Institute's culture promotes foundational and applied research, experimentation, innovation and the ethical mandate to address global challenges.

In light of this visionary road map, the Institute focuses on five over-arching signature research areas that serve as a strong organizational framework for all five schools: biotechnology and the life sciences; energy and the environment; computational science and engineering; nanotechnology and advanced materials; and media, arts, science, and technology.

Given the extraordinary emphasis today in architecture concerning: energy and the built environment, next generation building systems, smart technologies, new sustainable materials and environmental stewardship, the opportunity to situate a School of Architecture within a Polytechnic Institute with such a vast technological platform represents an invaluable asset.

The list below represents significant institutional assets that benefit our school:
1. Highly Selective Admission Standards – Rensselaer's highly selective admissions standards ensure that our students are extraordinarily qualified, with a strong science and math background as well as exceptional standardized testing scores. Students admitted to our program are positioned to excel.

2. Strong Scientific Academic Grounding – All Rensselaer students take a series of science courses that provide a solid and comprehensive scientific grounding necessary to excel in a rigorous technological institute as a well as an architecture program that celebrates the significant role of the sciences.

3. Critical Perspectives on Technology - The Science and Technology Studies department, located in HASS, provides courses with a critical perspective on the role and consequences of science and technology in society. The HASS core includes a depth requirement in one area selected by the student and two communication-intensive courses – one outside their discipline and one within.

4. Premier Technological Platform

All-Institute Shop Facilities - Robust centrally managed plotting, rapid prototyping facilities and shops (metal shop, water-jet, laser cutting, 3D printing, vacuum forming, milling, etc.) supplement our school's Fabrication Lab, providing access to world-class technologies used in design and fabrication.

Super Computer - The petascale supercomputing system at Rensselaer clocks in at a top peak processing speed of 1048.6 teraflops, making it the 43rd most powerful system in the world, according to the most recent TOP500 list. It is a cornerstone of the Rensselaer Institute for Data Exploration and Applications, known as The Rensselaer IDEA. Related projects span the spectrum of high-impact global challenges and opportunities, including basic research, environment and energy, water resources, health care, business and finance, public policy, and national security.

EMPAC - The Curtis R. Priem Experimental Media and Performing Arts Center provides an extraordinary cutting-edge technological platform. Conceived as a living laboratory in support of bringing together the arts, sciences and technology, this $250 million dollar building designed by the internationally renowned architect Nicholas Grimshaw provides an exceptional venue for lectures, as well as for next-generation research.

5. CLASS (Clustered Learning, Advocacy, and Support for Students) – CLASS is a comprehensive approach to the student experience at Rensselaer. Through ongoing support, guidance, and co-curricular activities, CLASS connects students to a network of faculty, staff and other students, ensuring that they are part of a strong community of learners striving to become the leaders of tomorrow

6. Robust Extracurricular Activity Opportunities - Rensselaer has more than 160 clubs, sports, and organizations available for students, including: intramural sports clubs, extracurricular clubs, model railroad society, performing and visual arts clubs; a student-run newspaper*;* and service organizations

including Habitat for Humanity, Engineers without Borders.

7. Sports and Recreation - Athletics participation is a vital part of the student experience at Rensselaer. Programs help student-athletes excel athletically and academically, while building leadership and teamwork capabilities. Seventy percent of Rensselaer undergraduates participate in athletics. Rensselaer offers 23 varsity teams and 50 intramural and club sports.

Integrated Study of the Liberal Arts and the Specific Discipline of Architecture
The school provides students with a larger critical cultural liberal arts perspective. Course content within required history/theory/criticism and design studio sequences, the international study abroad program and elective offerings contain invaluable knowledge and insights required to obtain a holistic understanding of the discipline across historical moments in time. The following course offerings subscribe this priority:

1. History / Theory / Criticism Courses - Beginning students must take the following courses addressing the relationships between Architecture and society, the human condition, philosophy and the development of various technologies in relation to culture: *The Ethos of Architecture, Architectural Media, Contemporary Design Approaches, Case Studies, The Building and Thinking of Architecture,* and *An Architectural Genealogy 1 and 2.* Additional required courses include: *Modernity in Architecture and Culture 1 and 2 and Cities/Lands*, as well as their complementary master's level courses (History. Theory, Criticism 1, 2 and 3), focus on the interrelationship between architecture, culture, society and the environment.

2. Elective Offerings - Electives that offer connections between architecture and a wider cultural context include courses such as: *Duchamp Seminar: Arnarchism Umped*; *Architecture in the Time of Synthetic Biolog; The Man Next Door: Hitchcock and the Architecture of Fear;* and *Latin American Architecture, etc*.

3. International Study-Abroad Program – Semester-long study abroad options enjoy wide student participation as they provide an immersive cultural experience that extends beyond the classroom. Programs provide access to both ancient and contemporary architecture through on-site visits, intensive collaborative engagement with students from our host schools, and cultural studies taught by our partner school faculty, Rensselaer students acquire invaluable insight into the unique and diverse cultural heritage around the world. Often prefaced by language studies and concerted efforts to engage and learn about the cultures in which they are embedded most programs feature a direct interface and team collaborations with students and faculty at a local partner institution. Master's students have the opportunity to apply for funded international travel workshops and research grants, and to participate in international workshops with partner institutions.

4. Cross-Listed Student Enrollment - Minors in Science and Technology Studies [STS] as well as other areas of [HASS] Humanities Arts and Social Sciences are encouraged for students in their final year. These students undertake a final project in a directed research area that is extra-disciplinary and engages integrated research of disciplines outside and within the discipline of architecture and urban studies.

I.1.2 Learning Culture

Studio Culture Addresses Time Management, Health/Well-Being, School-Life Balance and Professional Conduct - The School recognizes the significance of providing a vibrant, inspiring, nurturing and healthy studio culture for all of our students. Beyond our commitment to providing a top-tier educational experience for our students, great emphasis is placed on ensuring that both students and faculty are well-informed on the importance of time management, general health, well-being, work-school-life balance and professional conduct. The following outreach initiatives used to disseminate these important messages:

1. Dean's All-School Meetings – At the start of every semester, the Dean hosts an all-school meeting

attended by all students, faculty and staff in the School. Besides sharing his visionary perspective, the Dean makes a point of addressing, at each of these public events, the importance of a strong and responsible studio culture. The critical importance of learning time-management skills and subscribing to a healthy life-style are priority themes communicated to the entire school.

2. Faculty Advisors - Each entering freshman is assigned a faculty advisor for the duration of the program. Providing invaluable mentorship, the advisor addresses plan-of-study concerns, course selection, co-terminal opportunities, study-abroad options and a range of issues concerning the student's ability to effectively balance their school and life priorities.

3. Student Mentorship Program - Each entering freshman is assigned an upperclass student mentor who provides invaluable mentorship from a student's perspective. These older students help address the complex and often daunting challenges of balancing school and life priorities.

4. Dean's Student Advisory Council – the Council is comprised of student representatives from the professional and graduate research programs. Selected by their peers, they represent their constituent community at meetings held at least once per semester. They address the Studio Culture Policy as well as student input and recommendations, which are then considered by the Dean and school leadership.

5. Online Studio Culture Policy - The current Studio Culture Policy is available online for all the students and faculty as a primary means of dissemination.

A Description and Assessment of the Learning Culture within the Program
Beyond the success of the curriculum as the primary source of educational instruction in the School of Architecture, the overall 'learning culture' within both the B.Arch and M.Arch programs has grown significantly over the past several years yielding a great deal of energy and enthusiasm around events within and between coursework. A growing number of exemplary student-led initiatives and well-attended co-curricular events are evidence of a genuine desire to learn. These student- and faculty-led initiatives have contributed greatly to the teaching/learning culture and the vibrancy of the School:

1. Section-Cut / All-School Pin-Up – A group of students, seeking to increase awareness of the exciting and innovative design research taking place, created the all-school "Section-Cut Pin-Up" event. Presented every semester in the school's main gallery, the event features two students per design studio section in a poster session pin-up and public discussion. This highly popular initiative has generated much enthusiasm and provided students an overview of the diversity of the curriculum.

2. Position Series – (Student-Curated Lecture Series) - Established as an opportunity for the students to curate their own lecture series, expanding access to emerging architects, theorists, historians, landscape architects and urban planners, the *Position Series* features a Saturday afternoon presentations. Entirely student driven, this new initiative is testimony to our students as independent thinkers enthusiastically committed to the attainment of knowledge.

3. Student Organizations - The American Institute of Architects, Student Chapter [AIAS] and The National Organization of Minority Architects, Student Chapter, [NOMAS] are extremely active in promoting events including portfolio reviews, conversations with career specialists, and travel to regional lectures and events. Significant participation in (not-for-credit) charrettes, internal competitions and CANstruction further illustrate a culture of desire to learn. Student mentoring, organized by the AIAS, matches upper level students with those entering the B.Arch and M.Arch programs.

4. SoA Lecture Series – The Lecture Series, mentioned above, is an enrichment opportunity for all students and faculty, as well as the public. Lecturers represent a wide variety of world-renown artists, engineers, architects and others involved in related fields. On lecture days, select undergraduates join the lecturer for an informal luncheon and discussion. Later in the day, graduate students join the lecturer

for “Coffee and Conversation” in the Architecture Library, and, after the lecture and a reception at EMPAC, selected faculty and students join the lecturer and Dean for dinner and discussion.

5. Browns Traveling Fellowship - The culture of learning is greatly enhanced by the *Brown Traveling Fellowship* awarded annually to three faculty (one contingent, one tenure-track and one tenured faculty) and three students from the professional programs. Applications are reviewed by a selection committee that awards fellowships based on the merits the applications. Upon the completion of their fellowships, awardees present their work in an exhibition and public lecture open to the entire school.

6. BLAST>off: career development chats - As mentioned above, these events pair two faculty together every semester to engage in informal conversation (during pizza supper) with students on topics related to career development. The program has become increasingly more popular since its inception and represents an invaluable learning opportunity concerning the ‘big picture’ after graduation.

7. Design Studios - Studios, where knowledge from a broad range of courses is synthesized in the form of design proposals, are at the core of Rensselaer architectural education. Curated by a diverse roster of distinguished faculty with many pedagogical perspectives, studios expose students to the merits of: precedent research, analysis, iterative design, analog and digital practices, risk-taking, and important environmental, technological and cultural issues underlying the development of extraordinary architecture.

8. Architecture Tours - The School places great value on the *architecture tour* as a powerful alternative strategy for the transmission of knowledge. Examples of tours that have shown significant impact include; study-abroad programs in Italy, India and China; visits to NYC architecture offices and on-site construction tours (as part of the Integrated Design Development Studio) a site analysis tour (associated with the 2nd year design studio / capital region initiative) and building tours associated with each of the courses in the Environment and Ecology course sequence and Building Systems course..

9. Unique Pedagogical Instruction - The program has initiated a series of ‘Hands-On-Learning’ exercises associated with several courses. Both the *Environment Comfort and Energy* and *Environment and Ecological Systems* courses generated enthusiasm for the subject and a better understanding through direct measurement of environmental phenomena. Structures I and II use unique gaming strategies to test 3D physical structural assemblies to failure in real-time, giving students a first-hand understanding of the anatomy of ‘structural demise’. Hands-On-Learning also is used extensively in studios, Performance Installation Production [PIP] initiative, and the Bedford A/E Seminar.

10. Course Assistants Program - Although nascent, a recent shift in the definition of our *course assistants* program from a for-pay program to a for-credit program, has led to a new initiative requiring learning outcomes for the learning skills associated with teaching alongside an assigned instructor.

11. URP Program – The Institute’s Undergraduate Research Program (URP) provides real-world, hands-on research experience for students interested in contributing to faculty-led research. Students have an invaluable opportunity to work with leading academics and practitioners on project based research in areas ranging such as: building design, performance, lighting, acoustics, structure, built ecologies, or sustainability, etc.

12. Dean’s Student Advisory Council – Discussed previously, the Council’s role is to increase communication between the student body and the Dean to strengthen the School’s academic vitality.

13. Student Participation on Faculty Committees – Students serve as members of the Library and Interactive Pedagogies committees, and periodically participate in Curriculum Committee discussions.

Studio Culture Policy
How it is Distributed - The Policy, provided in supplemental materials, discusses studio-based learning as the core of the architecture student's professional education. As noted above, the policy addresses matters of respect, modes of learning, time management, collaborations, research investigations, review and assessment of work, and studio spaces and furnishings. The Policy is online, distributed by email, discussed by the Dean at the all-school meeting at the beginning of every year, and is discussed by studio faculty and students at the beginning of each semester.

Level of Community Understanding and Engagement - Understanding the purposes of the document and following it do not always align. While its purposes are with little doubt unassailable by faculty, staff or students, it is fair to question whether in every situation students make best and highest use of the studios and that every faculty member remains cognizant of the fact that students have other courses and should be leading rich lives outside the studio. While this is in the majority true, there are exceptions that the leadership of the school address with individual faculty members each semester, just as there are concerns that faculty address with individual students as a part of the learning experience.

Evaluation and Update Process - The policy is evaluated and updated every two years by the Curriculum Committee with input from staff and the Dean's Student Advisory Council. The committees assess the level to which faculty, students, and staff understand the purposes and intent for which the policy was established and whether it requires revision.

I.1.3 Social Equity

Institute Initiatives for Diversity / Inclusion and how the Program Benefits
The School of Architecture abides by the Institute's policy on Institute Diversity as stated by President Shirley Ann Jackson (www.rpi.edu/dept/diversity/): *"Rensselaer must and will achieve true intellectual, geographic, gender and ethnic diversity in our students, faculty and staff, in order to draw upon the best talent available, and to prepare our students to work and lead in a global economy."* The President said further that: *"For any institution to reflect an entire world of intelligence and perspectives – to achieve global reach and global impact – it must, by its very nature, reflect, represent and respect people and viewpoints from every walk of life. Rensselaer, as part of its official mission, aspires to such diversity – not just of cultures, races and genders, but of thoughts, disciplines ad ideas. Nothing less."*

In light of the institute's unwavering commitment to strengthening diversity, the *Rensselaer Plan 2024* (*http://www.rpi.edu/plan/RensselaerPlan2024.pdf*) provides a compelling list of aspirations, including to: (1) recruit, empower, and competitively compensate a diverse faculty and staff, (2) recruit substantially more women, and ethnically and culturally diverse students, (3) focus participation in research as a means to cultivate underrepresented groups to pursue academic careers, (4) provide for our students an inclusive community, within a residential college model, that supports them in their personal growth and success, (5) provide all members of the Rensselaer community with the opportunities for professional development and growth, and (6) create a lively community discourse on important cultural, social, gender, and geopolitical issues.

For many years, the Institute has worked proactively to ensure a healthy, inclusive environment for students, faculty and staff who are LGBTQ (Lesbian, Gay, Bisexual, Transsexual, and Questioning their sexuality). The Institute provides "Safe Zone" training several times per year to faculty and staff, to ensure an open, inclusive and productive environment for all. Training includes basic education as well as sensitivity training and ways in which faculty and staff may serve as advocates. The School of Architecture sponsors "Safe Zone" training sessions in the Greene Building, and the Dean requires all faculty and students to attend.

In addition, the Institute has recently updated its *Sexual Harassment* policy (http://www.rpi.edu/dept/hr/policy/17_Sexual_Harassmen_Policy.pdf) and has distributed procedures for

reporting instances of sexual harassment. The Institute has established hearing boards to review cases of sexual harassment. Dean Evan Douglis is the chair of the all-institute Hearing Board.

Each of Rensselaer's five schools is charged with preparing yearly Performance Plans aligned to the strategic framework of the *Rensselaer Plan 2024 9* (*http://www.rpi.edu/plan/RensselaerPlan2024.pdf*). There are firm expectations of the School of Architecture to show progress in this area from one year to the next. In response, the School has made 'a commitment to diversity' a cornerstone of its own strategic plan.

The School has taken deliberate steps to increase diversity in its student population, as well as in faculty hiring. In 2013-14, the Institute made it possible for the School to hire three new tenure-track faculty. We hired three outstanding female faculty (Dr. Alexandra Rempel, Dr. Nancy Diniz, and Dr. Lydia Kallipoliti) who contribute to the intellectual and gender diversity of the School. With the addition of these new faculty this brings the number of tenured/tenure-track female faculty to 5 out of 19, or 26%.

In addition, we note that currently 1 (5%) faculty member is Black/African American, and three (15%) are Hispanic. Since the last NAAB visit, Professor Mariana Figuerio was promoted to Full Professor increasing female representation among our senior faculty from 1 to 2. Of our 5 full professors (not counting our Dean), 2 (40%) are female.

This is in keeping with the Institute's commitment to diversity and its strict adherence to affirmative action and diversity hiring. This also is a reflection of the commitment on the part of our Faculty Search Committee to seek highly qualified female faculty who will serve as extraordinary role models especially to our growing number of female students.

In addition, it is noteworthy that one of our female faculty members, Professor Anna Dyson, is Director of the Institute-wide Center for Architecture, Science and Ecology [CASE], a long-term research partnership with the firm of Skidmore, Owings & Merrill in New York City. She was promoted to full professor in 2011.

Plans to maintain / increase the diversity of faculty, staff, and students

FT Faculty Recruitment – The school will continue its commitment to diversity hiring by being proactive throughout its solicitation in search of outstanding women and underrepresented minority candidates.

FT Faculty Mentoring – The school will continue its commitment to faculty mentoring throughout the P&T process, in support of enabling our FT faculty to excel in the three primary categories for promotion; teaching, scholarly research and service.

Contingent Faculty Hiring – The School recognizes the invaluable contribution provided by women and underrepresented minority hires among our part-time faculty, and therefore will make every effort to seek out outstanding candidates to teach at the school from one academic year to the next.

External Guest Critics – In support of increasing the intellectual, gender and ethnic diversity throughout the school, we will continue to seek out a broad range of outstanding and diverse guest critics for our mid-term and final juries.

All-School Lecture Series – In support of increasing the intellectual, gender and ethnic diversity throughout the school, we will continue to seek out a broad range of outstanding and diverse guest lecturers for our all-school lecture series from one semester to the next.

Student Diversity Data - Regarding our student population, the School of Architecture is proud of its ability to attract and retain female and minority students. Charts provided in our supplemental materials (http://www.arch.rpi.edu/naab/04-StudentDiversityCharts.pdf) reflect the Institute's and the School's

commitment to increase diversity. The statistics clearly show that the School of Architecture leads the Institute in percentages of female and minority students.

Harlem Academy Initiative - Rensselaer, and in particular the School of Architecture, have worked diligently to increase the numbers of female and minority students. Our admissions office targets high schools with high diversity populations and in the School of Architecture, we have begun working directly with several highly diverse high schools in order to encourage students to enroll in our programs. In addition, the Institute sponsors the Harlem Academy annually, bringing a group of high-potential 7th and 8th grade students to campus for a 3-day program introducing them to Architecture, Engineering, and Science and Technology Studies.

Student Organizations - The School of Architecture supports two student professional organizations: AIAS, the student segment of American Institute of Architects; and NOMAS, the student segment of the National Organization of Minority Architects. Both of our student organizations are very active and in Fall 2014, the School sponsored travel for 3 students to attend the NOMAS conference in Philadelphia. Our NOMAS organization has grown from 10 to 27 in the past 2 years.

Multicultural Student Clubs - The Institute has 25 multi-cultural clubs on campus and 10 religious organizations. The Institute hosts many diversity events annually including: Black Family Technology Awareness Day, Hispanic Heritage Month, Women's History Month, Safe Zone Training, Cultural Pride Night, Asian Awareness Week, and others. The Institute's Office of Minority Student Affairs [OMSA] publishes a "Minority Resource Guide," which is available online at www.rpi.edu/dept/diversity/resources/html.

Latin American Study Abroad Initiative - In support of the program's commitment to increasing diversity among throughout the student population, the School of Architecture is currently in the process of finalizing study abroad agreements with schools in Chile and Argentina in anticipation of a start date of FY16. The larger objective is expose our students to the brilliant and inspiring cultural and architectural legacies of our friends in South America as well as increase awareness of our program in support of establishing student recruitment feeder opportunities for our B.Arch, B.S, M.Arch and II programs.

Brazilian Exchange Program – Rensselaer has agreed to welcome a selection of students from Brazil every academic year as an opportunity to reaffirm the university's commitment to promoting cultural exchange around the world. In light of that all-institute initiative, the School of Architecture currently has a total of 7 Brazilian students in the B.Arch program for the full academic year 2015-16.

Increasing Student Diversity – In the context of increasing the total number of women and underrepresented minority students in the School of Architecture, the leadership overseeing recruitment has made a significant effort every year to target high schools throughout the U.S with diversity populations (i.e. DASH High School, Brooklyn Tech, Bronx Science, etc.).

Staff Diversity - The staff in the School of Architecture includes administrative, clerical, business, research, and shop professionals and supervisors. The School works closely with the Division of Human Resources to ensure that Affirmative Action policies and procedures are followed in all hiring decisions. All six of the professional administrative staff for the B.Arch and M.Arch programs are female; none is a member of an under-represented minority group. The staff in the Lighting Research Center includes 19 research/scientific/administrative professionals. Of those 19, eight are female and two are Hispanic. Of the two Hispanics, one is female, and one is male. Of the three Communications staff in the Lighting Research Center, two are female; none is a member of an under-represented minority group.

The Process by which Plans are Developed and the Individuals Involved in the Process

The Dean prepares yearly Performance Plans that include a comprehensive outline of proposed

initiatives associated with increasing student and faculty diversity throughout the School. Plans are submitted in narrative form to the Institute's senior leadership. After these presentations, Deans present budgets linked to their Performance Plans. The process is rigorous and requires extensive commitment throughout the first half of every academic year. The Dean, in consultation with his leadership team (comprised of the Associate Dean, Head of Graduate Studies, M.Arch and II Directors, Dean's Executive Assistant, and Business Manager), devises messaging, recruitment and hiring plans to address the school's commitment to diversity.

The Dean is extremely proactive in his communication and charge to the Faculty Search Committee regarding the school's commitment to diversity and his expectation that they make every effort to solicit and consider as many qualified diversity candidates as possible for every one of the searches. Additionally, upon the launch of every faculty search, the school's faculty search committee receives a representative from Human Resources who provides clear guidance concerning 'affirmative action and equal opportunity' institutional and federal guidelines.

How Initiatives are linked to Program Self-Assessment or Long-Range Planning.

The School of Architecture yearly Performance Plans include past performance and future projection charts, providing critical data in order to assess progress from one year to the next. The priority to increase student and faculty diversity is a shared goal that is considered on a continuous level in the context of part-time and full-time hiring, student recruitment, the selection of speakers in our all-school lecture series, promotion and tenure process, and external messaging.

I.1.4 Defining Perspectives

The Defining Perspectives Chart (http://www.arch.rpi.edu/naab/06-M-Arch-DefiningPerspectivesChart.pdf and http://www.arch.rpi.edu/naab/07-B-Arch-DefiningPerspectivesChart.pdf) indicates curricular and co-curricular activities that map to the defining perspectives demonstrating how these values transcend any one course or experience, are over-arching and reach every student in the B.Arch and M.Arch programs.

A. Collaboration and Leadership

Development of Interpersonal Skills to Foster Unity, Communication & Decision Making

Responsible leadership is emphasized from the outset of the educational experience. The sense of individuality that often emerges in courses such as design studios is tempered through a set of designed collaborative experiences requiring collective engagement and exchange. The relationship between the singularity of an architectural idea and the multiple participants involved in the realization of architecture is offered to the student body as a fundamental set of lessons reiterated over successive courses and collaborative experiences both within and outside the studio.

From the beginning, students are instructed in the dynamics of individual and collective engagement that is critical to the development of a set architectural values. Several required courses and studios - including the fourth-semester B.Arch housing studio Architectural Design Studio 4 (second-semester M.Arch Graduate Architecture Design 2), Integrated Design Development Studio (Graduate Architecture Design 4 for the M.Arch), Materials and Design, Materials and Enclosures, and Case Studies - structure collaborative work as a major course component. Other courses provide a balance of individual and collaborative work. Instructors coach students on development of team communication skills, cultural awareness and empathy, fostering unity, developing guiding principles and decision-making.

In some courses, student course assistants (under faculty supervision) organize study groups and serve as mentors, fostering a community ethic of individual and shared responsibility in obtaining knowledge. This component is crucial as it offers students an opportunity to teach and learn from each other.

Beyond the formal curricular structure, students are supported as they form the creative, intellectual, and cultural fabric of the school. Events such as Section Cut Pin-Up and CANstruction allow students to organize learning experiences in which collaborative planning and the exchange of ideas are essential. Such events empower students, allowing them play a role in establishing dynamic learning environments.

Conflict Resolution - Since a central part of an architecture school's culture involves critique and debate, encouraging the airing of different points of view on various aspects of creating architecture is essential to the intellectual and ethical development of students and faculty alike. The School has taken great pains to establish and encourage a collegial and professional atmosphere among students and faculty where differences of opinion and ideas are dealt with civilly, respectfully, and intelligently. Faculty serve as exemplars in how to deal with conflict, creative differences, and debate in a mature and civil fashion.

Students are made aware of the inevitability of conflict that emerges when individuals enter into a collaboration with the unique dynamic of realizing a work of collective architecture. Students are encouraged to remain respectful and understanding of diverse viewpoints, and the backgrounds of all individuals who form a community. If contrasting ideas emerge within or outside of a curriculum framework, students are encouraged respectfully to debate and assess various solutions to problems.

Preparing Emerging Professionals to Serve Clients and the Public - Through the Capital Region Initiative, the importance of serving clients and the larger public is introduced early to our students. In the first semester of the second year studio (first semester of first year for M.Arch students), studios engage institutional cultural client organizations to address their architectural design needs in a collaboration between the students, faculty and institutional leaders and staff. Over the last five years, projects associated with the Shaker Museum, the Hyde Collection, The Museum of Innovation and Science, Troy Riverfront Park, and OMI International Arts Center have given students a means of envisioning a work of architecture while gaining experience addressing and responding to the complexities of a client's needs and aspirations. Professional architects, trustees, staff and other members of the respective organizations are invited to attend critiques over the duration of the project. Where possible, exhibitions of studio work take place in the facilities of the cultural institutions at the end of the semester. The Capital Region Initiative extends the learning environment beyond the typical boundaries of the studio, and moves the creative search into a larger conversation, where feedback, exchange and input come from a wide range of participants and stakeholders.

Engage Allied disciplines and Professional Colleagues – The School is proactive in engaging allied disciplines, most particularly from engineering and the arts. Interdisciplinary engagement and direct interface with the profession are signature attributes of the professional programs as evidenced by:

> **1. Bedford Studio, Seminar and Traveling Workshop** - The Bedford Architecture/Engineering initiatives, as noted previously, include 1) an elective interdisciplinary seminar offered by a leading practicing structural engineer (the Bedford Visiting Professor), 2) the required Integrated Design Development Studio (Bedford Studio that is co-taught by an Architecture professor and the Bedford Visiting Professor), and 3) the annual Bedford Traveling Workshop. The seminar enrolls a balance of architecture and engineering students who are exposed to exemplary projects that rely on a close collaboration between architects and engineers and places students on interdisciplinary design teams tasked with the design of a pedestrian bridge or pavilion. The studio teams 5th year engineering and 4th year architecture students on the collaborative design of a building. The Traveling Workshop takes six architecture and six engineering students on a 10-day workshop to best A/E practices and exemplary projects in places such as London, Paris, Berlin, Tokyo and Sydney, etc. In addition to in-office seminars from leading engineering and architectural professionals and visits to projects that illustrate the importance of integration,

interdisciplinary teams of students design a pavilion to enhance the discourse surrounding collaboration. The Bedford visiting professor also serves as a regular consultant and reviewer in the design studios.

2. ART_X@Rensselaer Initiative - The annual PIP initiative, discussed previously, is a design studio collaboration between architecture and art students and faculty who work with an artist of renown in the design, development (fabrication and/or construction) and performance of a live work. In addition, Rensselaer has launched the Art X@ Rensselaer initiative, which aims to move art across the curriculum through interdisciplinary courses. The School of Architecture will play prominently in that initiative. In addition to PIP, the school will is offering *Mestizo Robotics,* an architecture course and associated seminar that is open to all disciplines.

3. CASE / SOM NYC Program - Few places are as interdisciplinary as the Center for Architecture Science and Ecology [CASE] where all Master of Architecture students and select B.Arch students spend a semester, embedded in the professional culture of SOM, one of the world's leading A/E firms, and a robust interdisciplinary research culture. Projects are characterized by collaboration between experts as wide-ranging as biologists, physicists, environmental engineering consultants, façade consultants, mechanical engineers, structural engineers, controls experts, experts in optics and architects.

4. Professional Practice Courses - Professional Practice 1 and 2 focus on project and practice management respectively, including instruction on the various consultants and stakeholders that are part of the design and construction team. The sequence focuses on the professional relationships between architects, clients, and other participants in the building process. These courses reinforce professional commitment and service to a client, while also discussing opportunities to engage and understand other disciplines in the building industry.

5. **Smart Geometry Conference** - The 2012 international Smart Geometry Conference, mentioned previously, provided students with exposure to interdisciplinary leaders and their work. Hosted at EMPAC by the School the conference provided students and faculty opportunities to collaborate and engage with architects, engineers, and computer scientists in the process of researching, conceptualizing and realizing a project. In preparing for the event, students worked months in advance with faculty to determine and organize the activities. Students also had the valuable experience of engaging other students, faculty, and practitioners worldwide in questions of material and technological exploration.

6. Exposure to External Interdisciplinary Expertise - In addition to the broad knowledge and experience student acquire concerning the profession and allied disciplines through courses and related outreach activities, students are encouraged to pursue minors and co-terminal degrees and to participate in a semester at CASE. During mid-term and final reviews, students interact with external guest reviewers who possess expertise and knowledge in the sciences, arts, and humanities, and offer students an invaluable opportunity to gain new insights.

7. SoA Lecture Series - The School's Lecture Series, curated to represent a wide variety of world-renown artists, engineers, and architects provides an important enrichment opportunity for students, faculty and others campus- and community-wide. Besides attending the lectures, B.Arch and M.Arch students each have dedicated structured opportunities to meet with the lecturers during the day for informal discussions.

B. Design

How graduates are prepared to engage in design activity as a multi-stage process aimed to address increasingly complex problems.

Students Learn Multiple Methods, Skills and Cognitive Processes - The studio is the primary place for the synthesis of the design process. Immersion in design studio helps students form a fluid and dynamic understanding of architecture's complexities. Studios employ a wide range of approaches to engage and understand the design process. As students progress through the design sequence, they are exposed to numerous tools, methods, intellectual and creative frameworks demonstrating a deep-seated commitment to employing multiple ways of seeing and doing through a complement of digital and analog tools and methodologies, precedent studies, analysis and investigation techniques.

The curricula also integrate a number of co-requisite courses including a four course sequence in Digital Constructs that are mapped to the early design studios; Environmental and Ecological Systems [EES], mapped to the second-year second-semester design studio (second semester first year for M.Arch1); and Professional Practice 1 mapped to the Integrated Design Development [IDD] studio, required for both B.Arch and M.Arch students. In each case, there is a formal interface between select course assignments and the associated studio. As noted in the latest curriculum reform (2013), it is evident that the semi-autonomous course model has great value, allowing non-studio courses to be taught based on first principles relative to a particular body of knowledge while also assisting and informing the particular studio content and methods. In other words, the integrated/dis-integrated model ensures courses will be more than vocational training in how to use a particular digital modeling tool, environmental application or how to perform a code analysis on a single building type, etc. While providing those important grounding application outlets in the studios, the co-requisite courses also remain free to teach at a higher level.

1. Critical Software Practices - Students receive a wide exposure to software applications and their particular biases and strengths, and are expected over time to be flexible, fluid and discerning with respect to their ability to migrate from one to another. In the first semester of Digital Constructs, students learn basic 2- and 3-dimensional skills in Rhinoceros, basic rendering in VRay, and graphics in Adobe Illustrator together with their underpinnings. In the second semester students learn more advanced techniques, and are introduced to procedural thinking through Grasshopper, which is taught both parametrically and algorithmically. Students learn the fundamental difference between these two ways of engaging a design tool. In the third semester, students learn Maya, Fusion 360, and Mental Ray, and are introduced to GIS. In the fourth semester, they learn to use Ecotect and Diva as analysis and optimization tools. Java Script and Python scripting languages are taught to empower students to create their own digital tools. Each semester, students engage one or more of the software applications being taught as well as those they learned earlier in conjunction with, and as a complement to the simultaneous employment of physical modeling and drawing. Integrated Design Development Studio includes instruction in the premises behind, and use of Building Information Modeling [BIM] for their studio projects. There they gain both a working knowledge of Revit, and an understanding of its greater potential for integrated practice.

2. Fabrication Lab - Starting in the first year, B.Arch and M.Arch students are introduced to the Architecture Fabrication Lab through a series of online and onsite safety training and orientation sessions. Coordinated studio projects teach the development of model making skills, including analog tools as well as laser cutting and 3D printing. As students progress, they use the Lab's many digital fabrication CNC tools including milling, vacuum forming and the ceramics lab. Second-year students are introduced to 3D printing and its advantages and shortcomings, and learn to create digital models suitable for these machines. In Digital Constructs 1, students are introduced to the laser cutter. In Digital Constructs 2, they are introduced to three-axis milling. Digital fabrication is taught as a translational process, not simply an act of recreating a digital model in the physical world.

3. Advanced Environmental and Energy Modeling - In the second year Environmental and Ecological Systems [EES] course students learn a number of environmental and energy modeling and analysis tools that they use as another way of informing their designs.

4. International Building Code [IBC] and Accessibility Standards - In Professional Practice 1 students study the International Building Code [IBC] and accessibility standards, and apply their knowldege of the subject in their ISS studio design projects.

Students Learn to Identify and Frame Problems from a Complex Milieu - The complexity of projects increases as students progress. In early courses, they engage the fundamentals of abstract form, space and program as basic 2- and 3-dimensional representational skills are addressed. Second-year students are challenged with mid- to large-scale projects of cultural and social content, and in which the complexity of geography, site, program, context and culture are simultaneously explored. The core sequence culminates in the Integrated Design Schematic Studio (IDS) and Integrated Design Development Studio (IDD), courses that serve as critical moments of broader yet more specific syntheses of information, regulations, technical and material parameters, practices and values.

Vertical/Option studios open possibility for the consideration of a wide range and scale of architectural problems, and how to frame and propose meaningful responses. By reverse engineering a contemporary project and the motivations and influences that formed it, the required Case Studies course provides students a broader perspective on the diverse influences; -technological, cultural, intellectual and other - that shape the architecture of buildings.

In the final project studio(s), within directed research areas set up by faculty, students demonstrate their ability to frame and respond to a contemporary problem that is part of the complex milieu. Students' work is ultimately presented publically and archived in a book.

Students Learn Generative and Evaluative Strategies – A defining characteristic of design instruction includes teaching students to be cognizant of strategies for generating and evaluating architectural ideas. In studio, students learn multiple ways of framing a problem within the parameters of given conditions and limitations. Generative methods range from the use of a borrowed fragment or metaphor as a beginning strategy, to biomimicry, to the development of mathematically generated systems, structural and/or environmental form-finding. Contextual analysis and bioclimatic design, among others, are introduced, employed and discussed, some premised on working from the whole down to the component, others from the DNA or component code up to the scale of the whole. Students use evaluative analysis and visualization tools and methods to test schemes in relation to specific criteria, whether structural, environmental, regulatory, or in relation to experiential or sensorial criteria. Complementary methods of drawing and making physical study models are coupled with a wide range of digital-modeling, analysis, and visualization techniques.

Methods for generating ideas are mirrored with strategies of critically assessing and evaluating the steps in developing an architectural idea, concept and/or strategy. Students learn to understand the dynamic relationship between the quantitative and qualitative necessities of architectural design. Frequent desk critiques and public reviews allow students and faculty to discuss collectively and shape the progress of each student's work. Central to this process is the manner in which faculty and students understand the parameters of a given problem, and how methods of critical evaluation are developed. Critique coupled with inquiry and reflectivity is essential to the learning and design processes. Inquiry is essential to critique as the asking of questions broadens the scope of a design response and assists in revealing unintended consequences. Reflectivity is crucial, requiring the designer to stretch beyond his or her current horizon and examine implications and consequence of their own biases on the development of a design response. Inquiry and reflectivity together form an ethical underpinning to the way the design process is taught.

Cycles of Evaluation - Conjecture is essential to imagination. Design is taught as an iterative and critical process that requires the continuous implementation of conjecture on the part of the student. Students are encouraged/required to imagine and partially develop multiple alternatives in response to a design

situation at multiple scales of investigation. They then must submit these alternatives to analysis and critique on the basis of external criteria (e.g., site, climate, structure, constructability, etc.) identified by the studio and by their own conceptual ideas and stated objectives for the project. The process of speculation and analysis typically culminates in a series of possible directions and solutions to a given design project. Through critical review and feedback, students learn to identify and implement the most effective and successful aspects of a design. Evaluation and implementation skills are cultivated as students are challenged to articulate the reasoning for their design decisions.

Methods of Research – Fundamental to the teaching of design process is engaging students in various modes of investigation. Studio projects typically begin with the necessity to investigate and understand the basic parameters related to a given project such as site, context, program, precedents, technologies, client aspirations, social issues, and conceptual possibilities. From this, students build hypotheses and paths of inquiry to create a coherent, responsive and provocative design.

As students progress, projects increase in complexity and research explorations take on greater depth, breadth and diversity. Investigations involve conducting site visits in order to understand the physical, historical and social aspects of a particular place; and may also include the use of library archives, scholarly literature, GIS data, and/or other resources – primary, secondary and tertiary – that may relate to specific questions regarding a given project. For example, at the start of second-year studio (first-year studio for M.Arch), which is dedicated to small institutional buildings (i.e. art and science museums) within the Capital Region initiative, students are simultaneously charged with conducting rigorous investigations into the specificity of the institution and site (i.e. archive and building history) as well as programmatic and typological precedents in the discipline of architecture that could contribute knowledge to the design considerations.

The Final Project sequence for both the B.Arch and M.Arch students overtly engages research and design and their relationship. A Methods Seminar focuses on various research methodologies, the development of a thesis and introduces students to graduate-level research tools and methods with respect to information access, literary searches, and the proper use and citation of texts and images. Symposia and lectures focus on the relative criteria and knowledge regarding students' final project topics and the relationship to contemporary architectural discourse.

Technical Expertise – The core courses in the technology sequence address the appropriate use of materials and their relationship to various aspects of design, construction principles, structural principles, and the ways that buildings respond to and perform with respect to natural and human-made environmental systems. Students encounter these subject areas throughout the first six semesters of the undergraduate program and first four semesters of the graduate program. Aspects of these issues are reinforced in the design studios, and are dealt with more comprehensively in Integrated Design Schematic Studio and in the Integrated Design Development Studio.

Skillful Action and Judgment - From the outset of the design sequence, students develop the skillsets and critical concepts necessary to conceive and advance design ideas. Parallel to the skills in visualization, and fabrication, students are taught to assess critically the decisions and results of the activities of making and creating formal and spatial artifacts. Faculty establish a framework for continuous evaluation of student work through desk crits and public reviews. Students learn that though some design decisions are fundamentally arbitrary, others can and must be made based on sound reasoning. Students are taught to pursue an understanding of the internal logic of a design situation through diligent application of thought and iterative practice, and to find ways to capitalize on the external constraints imposed upon a particular design situation (codes, program, structure, climate, societal imperatives, etc.). Students are taught that in architecture, even arbitrary decisions are subject to one's cultivation of a particular set of tastes and the pursuit of the often-elusive pleasures of design, have consequences.

C. Professional Opportunity

Educating students on the breadth of professional opportunities and career paths - Students are exposed to a variety of best practices, both traditional and alternative, with respect to their underlying biases and aspirations, as well as to the significant differences in size, structure and makeup of different practices. In the required undergraduate Case Studies course, students examine a contemporary building in different contexts including an in depth investigation of the firm and team that designed it. Students study the structure, size, services offered, history, background and biases of the firm and, whenever possible, interview someone from one of the practices (design, engineering or construction manager) who was responsible for the project. Students present and discuss their findings, thereby making each student aware of 10-12 different architecture firms.

In the IDD studio, students participate in a 3-day traveling workshop to New York City where seminars offered by principals/leaders of three to four firms (typically SOM, Grimshaw and Partners, SHoP, AECOM, and/or Snøhetta) give students a first-hand opportunity to experience the setting, hear guiding principles and ask questions.

In addition all M.Arch and select B.Arch students spend a semester at CASE within the NYC office of SOM, where they experience the professional culture of a leading multidisciplinary firm, and engage directly with their personnel, scientists and engineers on joint research projects.

Understanding alternative roles for architects in the building industry - Exposures to allied professions and roles are in part made possible through interdisciplinary courses with Engineering (Bedford) and Humanities (PIP). All professional program students also take required Professional Practice courses where a variety of firm types, diverse practice management models, traditional and alternative career paths and settings are presented and discussed. As indicated in the chart provided (see supplemental materials) numerous additional opportunities to gain exposure to and understanding of professional opportunities range from the previously mentioned Bedford Traveling Workshop, to BLAST>off-Off! events, to the Position Series, to visits to offices associated with our travel abroad programs, portfolio review opportunities and the annual career fair featuring as many as 30 practices on site. In addition, the School Lecture Series features a diverse set of 11-12 lecturers who represent the many ways of practicing in a global landscape.

Preparation for Transition to Internship and Licensure - Each year the School's Architect Licensing Advisor addresses the incoming class, 1) to make certain they know that he is their Licensing Advisor and available for questions relating to internship and licensing, and 2) to detail the path to licensure and their eligibility to establish an NCARB Record and participate in the Intern Development Program [IDP]. In that session and follow-up communications, students receive links to the NCARB site and IDP Guidelines. A second annual presentation geared toward upper year students who have already begun, or are considering entry into the IDP, discusses requirements for licensure and registration including the Intern Development Program and the variables between jurisdictions. Although Rensselaer is in New York State (where IDP is only counted after graduation), most of our students will license elsewhere. Students are encouraged to establish their record and begin IDP regardless of where they think they may wish to register. The presentation covers recent changes in IDP, the ARE and when students/graduates may be eligible. This material also is covered in the Professional Practice 1 course.

D. Stewardship of the Environment

Courses Addressing the Environment and Design Practices Relating to it - The ethos of sustainable practices is featured prominently in the core curriculum of both the B.Arch and M.Arch programs as well as in elective and other offerings. Two recent tenure-track hires in the area of environmental stewardship and bioclimatic design have enabled us to move forward confidently in developing a scientifically rigorous and ethically principled foundation on which our students are able to act. B.Arch students are introduced

to principles of environmental stewardship in their first year (Energy Comfort and Ecology [ECE]) through discussion of climate-responsive vernacular buildings, classical and architectural ecology, human thermal comfort, fuel types and end-uses in buildings, climate change, and embodied energies of materials. This prepares them for study of passive heating, cooling, ventilation, and daylighting in their second year and high-efficiency mechanical systems in their fourth year. M.Arch students, in lieu of taking ECE, spend a semester at CASE in the Built Ecologies Program where they take Built Ecologies 1, a course focused on environmental and bioclimatic design principles.

Second Year B.Arch and first year M.Arch students take Environmental and Ecological Systems [EES] in conjunction with their design studio. They focus on the use of quantitative climate and microclimate data, material thermal properties, and basic heat transfer and airflow relationships to design high-performance envelopes and controllable passive systems for heating, cooling, ventilation, and daylighting. Analysis and system designs are tailored to each student's studio project and are evaluated according to their abilities to meet ASHRAE 55 adaptive comfort zone requirements using both hand calculations and introductory-level building energy modeling. Half the instructional time is devoted to laboratory exercises, in which students evaluate performance of envelopes and passive solar heating, daylighting, shading, and natural ventilation systems of existing campus buildings, using research instruments (illuminometers, surface and air thermometers, infrared cameras, solar pathfinders, anemometers, and flow bubbles). These exercises, conducted along with design work, enhance students' experience and intuition regarding such systems.

In their third year, both professional cohorts take Building Systems and the Environment [BSE], which address high-efficiency HVAC and electric lighting systems, water and wastewater, and acoustics. Topics closely related to environmental stewardship include photovoltaics, air- and ground-source heat pumps, advanced VAV systems, photo-controlled electric lighting, and graywater systems.

Two elective courses, Sustainable Building Design Strategies and Sustainable Building Design Metrics, allow students to explore green building strategies, as well as LEED and other building rating systems, through detailed case studies.

In their final year, B.Arch students select a directed research area in which to undertake their final projects. Many are guided by ecological principles and thinking. The M.Arch students, complementing their semester at CASE, develop a masters project focused on either Urban Ecologies (Regional/Urban Scale) or Environmental Parametrics (Building/Urban Scale), giving the program significant distinction in relation to environment concerns.

Courses with content on the laws and practices governing architects and the built environment – Courses with content on the laws and practices governing architects and the built environment include ECE, EES, BSE, and BE1 all of which include ASHRAE 55: Thermal Environmental Conditions for Human Occupancy, Professional Practice 1 which includes instruction on the IBC, BSE which includes content on the International Building Code content, especially Ch. 12: Indoor Environment and Ch. 13: Energy Efficiency and the Sustainable Building Design Metrics and Sustainable Building Design Strategies which include, among regulatory laws instruction on LEED and other environmental standards.

The Ethos of Sustainable Practices - Students in upper-level sustainability courses are encouraged to prepare for and take the LEED Green Associate exam. Students in Building Science courses are encouraged to join the Society for Building Science Educators (whose mission is promoting education in passive and low-energy architectural design), and to attend conferences in green design, including the Symposium on Simulation and Urban Design, GreenBuild, the American Solar Energy Society Conference, and the Passive and Low-Energy Architecture Conference.

E. Community and Social Responsibility

Examples of public and community projects/programs as structured elements within coursework - The School's commitment to creating better places and increasing livability starts with The Capital Region Initiative in the required 2nd year B.Arch design studio (1st year for M.Arch). Recent studios focused on designs for the Shaker Museum, the Hyde Collection, The Museum of Innovation and Science, Troy Riverfront Park, and Omi International Arts Center.

Studios also regularly engage key sites in the City of Troy, which is transforming from a post-industrial city to a vibrant livable community. Pressures to develop key sites are growing, and our housing studio course has used key sites such as One Monument Square and the hillside between the City and campus to develop students' understanding of urban design, its relationship between building design and public consequences. Similar urban sites have been taken up by upper-level studios, including one that designed Urban Furniture for Troy's Riverfront Park. This work was presented to the City leadership and has promise to receive a second round of funding to realize several of the designs.

At CASE, environmentally-based research projects also relate to communities, including development of a new building material developed from the byproducts (husk and shell) of the coconut industry that promises to recycle what was previously waste material into a green product while creating an industry for the otherwise unemployed. Other CASE research includes development of novel flexible off-shore (mangrove-like) foundation systems to create artificial barrier islands that have the potential to protect cities vulnerable to sea level rise, and in particular, storm surge.

Examples of public and community projects/programs outside of coursework - Outside of class, students participate in CANstruction, which contributes significantly to the regional food pantry. For several years running, in competition with local firms and organizations, they have been award winners and major contributors to the energy and success of the program, which is locally run by one of our alums. In addition, some students are involved in tutoring Troy High School students.

Nurturing a Calling to Civic Engagement – The Professional Practice courses introduce students to public processes, including zoning and planning meetings, and the significance of informed public input. Students are required to attend and reflect upon at least one public meeting in each course, preferably featuring a controversial project, to reflect on the different players, process and findings, and to take a position. Students are encouraged to become involved in issues related to local initiatives.

The Programs' Approach to Each of the Five Perspectives

To great extent, each of the defining perspectives characterize Rensselaer's B.Arch and M.Arch programs well and played a significant role in the 2013 curriculum reform initiative that is now phasing into the curriculum.

Learning Culture - many of the collaboration and leadership initiatives – in particular, student leadership in the Dean's Student Advisory Council, the AIAS and NOMAS - contribute to a strong culture inside and outside the classroom, through the Position Series and Section-Cut Pin-Up, broad participation of honors reviews, Brown's Fellows presentations and exhibitions, and lecture series attendance. We have a community of engaged learners who engage in not-for-credit activities as well as their coursework. Within the studios and classrooms, constructive collaboration characterizes the way our students learn. It is a culture of design that builds on the integration of abstract ideas and pragmatic concerns supported by advanced technologies, techniques and workflows aimed at ensuring that students (and graduates) are prepared to think forward. It is a culture that connects to best practices in the professional world. Our students are motivated stewards of the environment and are increasingly responsive to the social responsibility that belongs to those who design built environments.

Curriculum Design, Review, and Development - The defining perspectives played a prominent role in our recent curricular reform, and in our faculty hires. The perspectives were key in affirming and recommitting to the Capital Region Initiative, important in establishing the balance between collaborative and individual work, and in developing ways to execute and assess collaborative work in a learning environment. They were catalytic to creating a semi-autonomous Digital Constructs course sequence, enhancing the professional practice course sequence (from one to three required courses), key to committing to new hires in the area of bioclimatic design and the environment, and in creating a new course in Energy Comfort and the Environment in the first year.

Specific Course Review, Development, or Revision – The defining perspectives had significant impact on the design/re-design of courses including Professional Practice, where in addition to expanding the number of required courses, a new requirement to attend a public meeting exposes our students to public processes regarding development, regulations and the environment. The perspectives also factored into our changes to the fifth-year Methods Seminar course with respect to presenting different Research Methodologies to ensure that students understand their differences of approach and outcome; the splitting and expansion of the Design Development studio into a two-course Integrated Design studio sequence.

Off-campus, Extra-curricular, or Co-curricular Learning Experiences - The Defining Perspectives inform the selection of lecturers [All-School Lecture Series], as well as the addition informal student meetings with the lecturers. The perspectives support the importance of a vibrant student leadership team as evidenced in our Deans Student Advisory Council, the NOMAS and AIAS chapters, and their many recent initiatives, the BLAST>off! initiative, the Brown's Travelling Fellowship, the three-day IDD trip to various exemplary practices in New York City, and the Bedford Interdisciplinary A/E and PIP initiatives.

Long-Range Planning for the Program – The Defining Perspectives are critical to the long-range planning of the school as evidenced in the latest curricular reform. Faculty agree that the world and our profession are in a phase of significant transition, that we must graduate students with an understanding of overarching outcomes that help them understand that knowledge, technology, techniques and even the scope and possibility of our influence evolve. Students need elastic minds and willingness to engage and lead in those transitions, and to work successfully with others inside and outside their discipline. They need highly developed design and analysis skills, a broad awareness of the range of professional opportunities, and an awareness of the consequences of their actions on the environment and in society.

Self-Assessment Activities for the Program - Continual self-assessment to maintain these perspectives and realize our mission is taken seriously. The next section describes in detail our regular and rigorous commitment to outcome-based learning, and the review and assessment of individual courses, the curriculum and programs at the School of Architecture.

I.1.5 Long-Range Planning

Identifying multi-year objectives within the context of the institutional and program mission. Annual performance planning that moves from the school to the institute level, and through the curriculum committee and associated task group committees.

Performance planning, tied to the development of highest priorities, new initiatives, new and replacement faculty lines, and annual budget allocations is the means by which each Rensselaer portfolio (including the five schools) aligns hires, efforts, initiatives and resources to Institute-wide highest priorities [IWHP], program mission and objectives. In 2015 those priorities are aligned with the grand challenges of our time, pedagogical innovation, the student experience, and resource generation. In addition to providing the current state of the school, the plan is organized by IWHP's, identifies portfolio (school) related goals and key initiatives, indicates how the school plans to address those goals and the resources required to do so. After presentation and review at the Dean's Council and President's Cabinet, and discussion with

the Provost, a budget plan is developed and forwarded to Institute leadership. The annual Performance Plan is used as a guide for recruitment and marketing, and in 2014-15 resulted in the re-envisioning and re-launch of our 4-year Building Science B.S. program, and the re-envisioning of our M.ArchI post-professional program to become a Master of Science in Architecture program. In addition, Performance Plans guide responses to signature thrusts, research programs, and institute initiatives such as the Art_X@Rensselaer initiative. The Performance Plan also guides internal long-range planning in light of institute-wide highest priorities, the state of the profession, the School's mission and ongoing assessment of the programs.

Our Curriculum Committee, which meets bi-weekly, addresses curricular issues including development of new programs, revision of existing programs, assessment of programs in relation to stated mission and goals, accreditation standards, response to Institute initiatives, preparation of documents and presentations of proposed curricular and course changes to the Faculty Senate (Institute-wide) curriculum committee, internal policy changes, and catalog changes. In addition, task groups are charged with issues such as innovative pedagogical methods, School of Architecture tenure standards, etc.

Every few years, the planning process includes a thorough review of programs and curriculum in relation to: state of the profession, state of the academy, accreditation standards, School mission and goals, and Institutional mission and goals. In 2013-14, the Curriculum Committee undertook a comprehensive review of the B.Arch and M.Arch programs, and made (with input and approval from the faculty, Dean and the FSCC) several major changes to strengthen alignment with the School's mission, NAAB SPC's and Defining Perspectives. Recent large-scale changes include: revisions to the B.Arch Program; revisions to the M.Arch Program (pending State approval); re-invention of the post-professional Master's Program; and relaunch of the Bachelor of Science in Building Science Program.

Process by Which the Program Identifies Student Learning Outcomes

Outcome-based learning is important in planning and assessment at both the program and course levels. Rensselaer's focus on learning outcomes is strongly reinforced at all scales of the Institute through the hire of a Student Learning Assessment Specialist (who operates out of the office of the Provost), the creation of a standing Assessment Committee with members from each school, and the use of Digital Measures [DM], a centralized online system for mapping learning outcomes to courses and their assessment. With the exception of agreed-upon program level outcomes that are mapped to required courses, faculty are responsible for developing learning outcomes that meet the standards of the Institute, namely that each student demonstrate learning in a particular area. Much attention is paid to the difference between intentions (objectives) and accomplishments (outcomes).

The required use of Digital Measures, to create an online record for each course, includes completion of learning outcomes and student assessment. Compliance is monitored by the Assessment Committee, Dean and ultimately by the Office of the Provost. Specific course learning outcomes are not reviewed centrally unless the course is new, being revised, or if there is a comprehensive review initiated by the department or school. New and revised courses must first pass through the department and/or school curriculum committee responsible for ensuring that learning outcomes meet the standard of the institute. Following school-level approval by the curriculum committee and Dean, Associate Deans present new course(s)/program(s) or course/program changes to the FSCC, which scrutinizes, among other things – the learning outcomes for compliance before approving the course or program.

In 2013-14 the school's comprehensive assessment of the B.Arch and M.Arch programs led to a number of significant changes. Following a thorough analysis of the required course sequences, including a chronological listing of every course learning outcome and content area covered in each of the various required course sequences (Design, History/Theory/Criticism, Technology, and Professional Practice), the committee mapped the school's aspirations and mission to the NAAB Student Performance Criteria and Defining Perspectives, curricula of peer and aspirant programs and the changing profession, as the

basis for a collective discussion about the realignment, sunsetting and addition of required courses and their learning outcomes. Program level outcomes, relating to the mission of the school and its vision for the development of 21st century leaders in the profession, were addressed at two day-long faculty retreats. This led to an alignment between program-level learning outcomes and revised set of required courses designed to impact the professional programs and all professional program students.

Each affected (required) course was packaged together with its particular program learning outcomes, presented to, reviewed and passed by the FSCC. Program level outcomes were uploaded to Digital Measures and faculty are responsible for 1) listing the agreed upon course learning outcomes in accordance with the associated program level outcomes, 2) mapping assignments and 3) course evaluation criteria (grading) to them. Instructors are encouraged to add course learning outcomes as long as program-level outcomes agreed upon by the faculty are maintained and fulfilled. At the end of each semester, after receiving student evaluations, faculty are required to self-assess their course with respect to each of the learning outcomes, whether they were achieved and how they might improve the next time it is offered. We are currently phasing-in those changes to the curricula. (http://www.arch.rpi.edu/naab/08-Curriculum-Pre-Retreat-Documents.pdf.

Data and Information Sources used to Inform the Development of Learning Outcomes
Data and information used in this process includes: NAAB's SPCs and Defining Perspectives; a compilation of course syllabi, broken down into learning outcomes and content areas; an analysis of peer and aspirant schools' curricula; information from the Dean's Student Advisory Committee; ARE Pass rates published by NCARB; and the results from graduating student exit interviews. In addition, the Curriculum Committee compares best practices by peer and aspirant schools and incorporates the expertise of our own faculty and colleagues in professional practice. Our faculty also provide information they obtain from professional conferences and workshops, while serving as guest reviewers, and in best-practice discussions with colleagues from other schools.

The Role of Long-Range Planning in Other Programmatic and Institutional Planning Initiatives
Long-range planning is a part of the ethos of the Institute, driven by the Rensselaer Plan 2024 that identifies institute-wide highest priorities and ensures, through annual performance planning, that each school Dean map their key initiatives to the overarching priorities of the institute. Within the context of an Institutional commitment to, and strengths in scientific and technological innovation, the School has built graduate research programs in areas of Lighting, Architectural Acoustics, and Built Ecologies. Long-range planning has led to the development of the Lighting Research Center and CASE, the development of a Ph.D. in Architectural Sciences, and all programs and centers that have a direct impact on our learning culture and professional program students.

Recent planning has led to: 1) a recommitment to and redesign of the 4-year Building Science program; 2) direct engagement in the Art_X@Rensselaer (Art across the curriculum) initiative; 3) sustaining and growing our international study abroad options in India, Italy and China including close attention to partnering with peer institutions at those locations; and, 4) development of a Latin American initiative. We also are continuing to build on the Bedford A/E initiatives, expand our marketing initiatives, and use BLAST>off! to expand students' awareness of professional traditional and non-traditional career options.

At the Institute level, Architecture's Associate Dean has assumed a leadership role in the review of the Institute's Core Curriculum, which has led to development of a new set of Institutional overarching outcomes. He is currently co-chairing a committee charged with developing a new institute-wide core curriculum that is linked to the *Rensselaer Plan 2024*. In addition the curriculum committee is engaged in long-range plan to institute a sophomore summer session that will be phased in over the next four years.

The Role the Five Perspectives Play in Long-Range Planning - The five defining perspectives play prominently in long-term planning and the initiatives of the School. Consideration of collaboration and leadership has led to: 1) increased attention to the balance of collaborative and individual work inside

studios and courses; 2) development of new interdisciplinary collaboration experiences; 3) increased exposure to other disciplines through coursework, research and learning settings; 4) strategic strengthening of course assistantships, and 5) increasing the number of research opportunities that cultivate leadership. Additionally, strategic discussions of design led to a an agreement upon a revised, collectively owned core design sequence that structures first- and second- year studios with respect to specific learning outcomes and expands the Design Development studio into a two-course integrated design studio sequence.

Regarding professional opportunities, the school determined to: 1) strengthen the Bedford A/E initiative with full funding of the traveling workshop; 2) reaffirm the Integrated Design Development's field trip to best practices in New York City; 3) affirm the use of the Lecture Series to bring in experts from a variety of allied disciplines; 4) expand from one course in professional practice to three courses, including one dedicated to practice management; 5) create a digital constructs course sequence linked to studios and 6) launch the BLAST>off! initiative.

With respect to stewardship of the environment: 1) long-range planning through the performance planning process secured two faculty-line hires dedicated to areas related to bioclimatic design, 2) the faculty moved to expand the number of required courses in this content area from one to two for the B.Arch students, and 3) to require M.Arch students to spend one semester immersed in environmental and ecological design at the Center for Architecture Science and Ecology [CASE].

Regarding community and social responsibility, the school: 1) created the Capital Region Initiative in the second-year studio, 2) engages key community sites in the City of Troy, and 3) exposes students to civic engagement through required attendance and reflection on public meetings and processes relating to development and the quality of the built environment.

I.1.6. Assessment

A. Program Self-Assessment

With regard to ongoing mission evaluation and multi-year objectives - Self-assessment occurs at every level from faculty, to course, program, school and the Institution. As outlined in I.1.5 long-range planning, individual faculty members are required to self-assess their teaching and course(s) learning outcomes through Digital Measures each semester. For faculty whose course outcomes are linked to program outcomes this is particularly important.

Course Assessment - Within weeks of completing a course, and after receiving student evaluations, faculty members are required to assess their course, course learning outcomes, associated assignments and evaluation (grading) criteria through the Digital Measures course assessment module. Course assessment is designed to trigger course changes. As instructors are preparing syllabi for the next semester, they receive individualized communications, reminding them of program level outcomes that are linked to their courses.

Student Course and Faculty Evaluations - In addition to the Digital Measures course records and assessment (by faculty members), the Institute employs a system of student evaluations. Evaluation forms are given electronically to students at end of each semester. The results of the evaluations are shared with the individual faculty member responsible for the course and their department head. The statistical summary of the course evaluations, which rates the teaching and the course separately, and comments are generally seen as valuable.

Institutional and Program-Level Self-Assessment - Institutional and program-level assessment is ongoing through annual performance planning and through regional accreditation. Program-level assessment is undertaken locally by the schools and/or triggered by the Institute Assessment Committee

that requires all schools and departments develop and submit and update program-level outcomes for each degree-granting program. Subsequently, program level re-assessment is triggered by an accreditation cycle such as ABET, or NAAB, or may be voluntarily undertaken as was the case for the B.Arch and M.Arch programs in 2013 as outlined above in I.1.5 Long Range Planning. On a 10-year cycle, the Institute is reviewed by Middle States Commission on Higher Education with a focus on course learning, program and Institutional level outcomes and assessment.

In Architecture achievement of program level outcomes are assessed periodically by the Curriculum Committee and leadership team. Part of that assessment includes a review of progress in addressing "causes for concern" raised at the last accreditation visit, progress toward meeting program goals and toward addressing shifting factors and new opportunities. Solicitation of faculty through the recent curriculum reform process was inclusive. Subcommittees assessed various curricular areas in relation to the mission and NAAB criteria. Students provided input via the Dean's Student Advisory Council, comprised of elected students from each class and program. The Council is engaged in vetting materials and also in bringing student issues to the Dean's attention.

How self-assessment is used in long-range planning, curriculum development, learning culture and responses to external pressures or challenges to the institution - At Rensselaer long-range planning and assessment are closely wed. A description of the manner in which the results of program self-assessment informs long-range planning is integrated in section I.1.5. Not only did the most recent reform influence curriculum development with respect to perceived deficiencies, but was instrumental in finding ways to inculcate a greater sense of a unique architecture culture. It provided students with an early experience in both material and environmental technologies and strategically realigned how digital tools and applications are taught and integrated with respect to our mission of ensuring that our graduates have a highly principled command of computational tools and techniques. It enabled us to better address integrative design in light of increasingly numerous and complex criteria associated with the profession, and to reshape the Final Project research/design experience to help students understand their professional role as agents of change.

Faculty Assessment - The Dean executes a performance evaluation of each faculty member in the areas of teaching, research/ scholarship, and service annually. Following submission of a self-assessment report, faculty members meet with the Dean and receive a written summary of his evaluation.

B. Curricular Assessment and Development

A chart identifying all the parties in the curricular assessment process (http://www.arch.rpi.edu/naab/09-CurricularAssessmentChart.pdf).

Students' assessments of the accredited degree programs' curriculum and learning context

Assessments of the degree programs is obtained through annual exit surveys of graduating class and periodic surveys of faculty, alumni, and students. **A 2015 survey of B.Arch students** showed that in general, students strongly agreed that their academic program provides a strong education and understanding of the need for lifelong learning. Students indicate overwhelmingly that they are effectively prepared to develop independent ideas, to consider and solve complex design problems, and to understand environmental impacts and concerns. Students also express great satisfaction with their study-abroad opportunities, as well as curriculum enhancements, including charrettes, lectures and workshops.

The **B.Arch students** also expressed some concerns. Only 62% agreed or strongly agreed that *the program provides ample opportunity to explore their interests in related fields, areas of inquiry, and to pursue minors*. 15% disagreed with the statement, and 23% remained neutral, making this a topic to be addressed by the Curriculum Committee in coming months.

Another area of student concern is the statement, *"the program provides students with opportunities to engage and learn from and with allied disciplines and professions."* While this may be the result of a tightly controlled and rigorous 5-year academic program, it will be a topic for the Curriculum Committee to discuss, since 7% of students disagreed and 30% remained neutral.

In a similar concern, only 67% of students agreed or strongly agreed to the statement, *"the program provides opportunities beyond the studio and classroom that further develop leadership and collaboration skills."* 8% of students disagreed, and 25% remained neutral, making this a topic for the Curriculum Committee to discuss. (It may be that the very full academic program in Architecture does not allow for many extra leadership and collaboration opportunities.)

A 2015 survey of M.Arch students showed that, in general they are very satisfied with the quality of their academic program. 100% of respondents said they agreed or strongly agreed with 11 of the survey questions, covering topics including lifelong learning, collaboration and teamwork, experience with a variety of approaches to Architecture, preparation for licensure and career, and environmental concerns.

On several of the survey questions, students expressed some dissatisfaction. 25% disagreed with the statement, "*The program provides students ample opportunity to explore their interests in related fields, areas of inquiry, and to pursue minors."* This may be a reflection of the fact that, in the interest of allowing students to minimize their time to degree completion, the M.Arch. program is filled with required courses and studios, setting students on an accelerated path to degree completion.

In a related question, 25% of students were neutral regarding the statement, *"The program provides students with opportunities to engage and learn from and with allied disciplines and professions."* Again, this may be a result of the tightly scheduled plan of study, which was established to allow students to progress through the program in a very efficient manner. It may be important, at a future Curriculum Committee meeting, to consider building flexibility into the demanding and rigorous M.Arch schedule.

The following statements, with which students expressed significant disagreement, will be matters for further discussion in future Curriculum Committee meetings: (1) 12.5% of students disagreed with the statement, *"Students are prepared to understand how architecture relates to its surrounding communities;" (2)* 12.5% of students disagreed with the statement, *"The program provides opportunities to understand the role the architect plays in the larger building process."*

Graduates' assessments of the accredited degree programs' curriculum and learning context

A 2015 survey of alumni less than ten years out showed that they generally provided very positive feedback about their experiences as students and the long-term value of their Rensselaer education. Similar to the B.Arch and M.Arch students, alumni gave very positive responses about being educated to understand environmental impacts and environmental/sustainability concerns. Although alumni had some specific complaints about too much design focus and not enough practical focus, the comments in general showed that alumni were well educated and reaping the benefits of an extraordinary education.

Alumni indicated that they felt they did not have many opportunities beyond the studio and classroom that were effective in furthering their leadership and collaboration skills. Current students rated this question more positively than the alumni, indicating that progress has been made in this area, although there is more to do, apparently. Similarly, alumni and current students disagreed with the statement that they had opportunities to engage with and learn from allied disciplines and professions.

Only 57% of alumni agreed that the curriculum provided ample opportunity for them to explore interests in related fields and areas of inquiry through minors, majors and co-terminal degrees. Again, this matches the responses of the current graduate and undergraduate students, and may be a reflection of the demanding and rigorous Architecture plan of study. Perhaps it will be a topic of discussion by the Curriculum Committee.

Some 14% of alumni disagreed that the School prepared them for internships, licensure and practice in the architectural profession. This is interesting, since 91% of alumni reported that they are currently pursuing a career in an architecture-related field, and 87% agreed that the curriculum provided them with a strong education based on foundational principles the lead to lifelong learning.

In conclusion, there appears to be overwhelming agreement by alumni that their education has been valuable. While the alumni did point out in the comments and in some survey responses that there are things that might be improved upon in the future, the overall response of alumni is extraordinarily positive.

Faculty assessments of the accredited degree programs' curriculum and learning context

A 2015 survey of faculty indicated that, in general, faculty have a high degree of satisfaction with the curriculum and the ability of the School to produce graduates who are equipped to succeed and lead in the profession of Architecture. In particular, faculty indicated very strong agreement that the School's study-abroad and CASE opportunities provide students with important curriculum options.

Regarding curriculum specifics, faculty strongly agree that students are made aware of the environmental impact of building practices, that the program effectively prepares students to engage in and solve complex design problems, and that the program effectively prepares students to pursue architecture on an innovative level. Interestingly, tenured and tenure track faculty rated the program much higher than contingent faculty with regard to preparing students to understand the relationship between design and the other components of the discipline of architecture. One reason for the discrepancy may be that tenured and tenure-track faculty are more familiar with all the facets of the curriculum, including opportunities for interdisciplinary collaboration. Tenured and tenure-track faculty provided a much more positive response to a question about minors, majors and co-terminal programs which, again, may simply indicate that tenured and tenure-track faculty are more knowledgeable about these matters.

It is also important to note that, in one of the few survey questions that deals directly with the professional growth of faculty, there was an overwhelming agreement – 85% - who indicated that supportive mentorship is provided to them.

Regarding financial investment in the School of Architecture, this faculty member said that infrastructure investment has been "low to nonexistent," and that the Fabrication Shop technologies are in need of upgrading. This faculty member also said that "the poor acoustics of the gallery threatens its viability as a teaching platform."

On a more positive note, the faculty member expressed satisfaction that the School has been able to hire replacement faculty, and that those hired have been female, addressing a need for increased faculty diversity. Additionally, the faculty member said that the design faculty are united and committed to the reformed curriculum which has "wide buy-in" and that the design faculty are a cohesive group. In conclusion, the comments of the faculty member mirror the survey results, which indicate strong support for the curriculum and some concerns about the career development path for faculty in the School.

A Description, if applicable, of Institutional Requirements for Self-Assessment - See above in Assessment and Long-Range Planning.

Section 2 - Progress since the Previous Visit

Program Response to Conditions Not Met

CONDITION 3.12 Professional Degrees and Curriculum (M.Arch)

VTR text: The Master of Architecture criterion has not been met. It is a 3 ½ year program which requires an undergraduate degree in any field plus 112 credit hours. The 3 ½ year Master's program has been continuously accredited since 1979/80. At the time of the visit, the program required an undergraduate degree in any field plus 88 undergraduate credits plus 24 graduate credits. The condition of accreditation requires at least 30 semester credit hours of graduate level by 1 January 2015. The team recommends a transition that will establish an identifiable graduate level curriculum as soon as possible to help promote stronger intellectual integrity and a collective identity within the Master of Architecture program.

RESPONSE: M.Arch 1 curriculum revision.

In 2010 the Master of Architecture curriculum was revised to conform to the requirement of having at least 30 credits of graduate-level coursework. This change in the template was approved by the School of Architecture and the Institute-wide Curriculum Committees and then became part of the curriculum, bringing it into conformance with the NAAB standard. The change was made by adding a requirement for 6 elective credits at the graduate level.

1. **Distinct identifiable Graduate Level Curriculum** - In 2014-15 the School, with approval of its Curriculum Committee, faculty, Dean, and the Institute's Faculty Senate Curriculum Committee, took the M. Arch through a curricular reform that increases the number of graduate credits to 47 at the 5000-level and 41 at the 6000-level (35 required and 6 elective). The remaining 12 credits are professional and general electives that may be fulfilled with courses at the 4000 (undergraduate), 5000 or 6000 level. Courses taken with B. Arch students (5000-level courses) require faculty to develop unique syllabi and have distinguishing content. We built in an expectation that M. Arch students with greater world experience and a prior degree should be able to reflect on their work and to position it more substantially than B. Arch students. The 6000-level courses are graduate courses unavailable to undergraduates, except by special permission.
2. **Distinct Professional Practice and Research Culture Identity -** To establish an identifiable graduate-level curriculum, we integrated a semester at the Center for Architecture Science and Ecology [CASE] embedded within a professional practice and research culture. Working with Ph.D. students and without undergraduates significantly promotes stronger intellectual integrity and a collective identity of the M. Arch program. At CASE these students take 13 6000-level credits and are engaged in research projects relating to next-generation sustainable building technologies.
3. **Distinct Thesis Level Identity -** Furthermore, and to complement the semester at the CASE, the Final Project has been shifted to an association with the post professional students, placing M. Arch in a uniquely graduate culture for their final year of studio.

CONDITION 13.14 Accessibility (B.Arch. and M.Arch. 1)

VTR text: Ability to design both site and building to accommodate individuals with varying physical abilities. This criterion has not been met, again. The course manuals indicated that students had an awareness of the ADA requirements. However, the studio projects did not clearly demonstrate an ability to design for accessibility. Projects lacked identification of handicapped parking and curb cuts.

Some flat sites might work out to be accessible, but sites on sloping surfaces do not appear to have been closely studied nor solved. Some door and egress issues were not resolved. Areas of refuge in stairwells were non-existent in the majority of the design projects.

RESPONSE: In 2011-12 the school responded by:

1. **New Design Studio Module on Accessibility** - Adding a required 2nd Year B. Arch. (1st Year M. Arch.) design module integrating emphasis on site and building accessibility.

2. **New 'Tech Talk' on Accessibility** - The Design Development studio increased emphasis on accessibility through a 'Tech Talk' component dedicated to understanding and meeting accessibility standards from the curb to and throughout the building.

3. **Stronger Professional Practice + Design Development Course Interface** - Strengthening Professional Practice teaching on accessibility, including coordination with Design Development Studio to ensure substantial instruction regarding accessibility.

4. **Increased Faculty Awareness** - Awareness of need to include accessibility in studio projects.

Under the 2013-14 curriculum reform:

5. **Site Planning + Site Accessibility / New Learning Outcome** - Site planning and accessibility remained a learning outcome and topic of attention in the 2nd year fall B.Arch Design Studio (1st year fall semester M.Arch) as an integral studio requirement.

6. **New IDS Studio Course w/ Emphasis on Site and Building Accessibility** - Integrated Design Schematic Studio [IDS] includes learning outcomes and project design expectations dealing with site and building accessibility as part of the pre- and schematic design phases.

7. **Stronger Professional Practice + Design Development Course Interface** - Greater integration of co-requisite Integrated Design Development Studio and Professional Practice 1 courses increase emphasis on building and site accessibility through coordinated assignments and evaluation of design of accessible stairs with areas of refuge, and meeting accessibility standards.

CONDITION 13.17 Site Conditions (B.Arch. and M.Arch. 1)

VTR text: Ability to respond to natural and build site characteristics in the development of a program and the design of a project. This criterion was not met. Many projects were presented with sties that seemed like they could work; however, on closer examination projects did not clearly show an ability to respond to natural and built site characteristics. For example, there were no clear examples of ground level development including entrance, landscaping, access, drainage, parking etc. for sloped sites. There needs to be more attention paid to the sloping sites by showing appropriate contours and spot elevations along with building modifications to accommodate the site conditions. RPI is located in a setting where the dramatically sloping landscape forms provide convenient examples for students to visit and get a better understanding of the impact of contour changes.

RESPONSE: In 2011-12 the School responded by:

1. **New Design Studio Module on Site Conditions -** Adding a 2nd Year B. Arch. (1st Year M. Arch.) studio module on site conditions as a requirement, including emphasis on site condition analysis

and documentation, and ability to respond to natural and built site characteristics, especially on sloped sites with attention to landscape development, access, entrance, and parking.

2. **New 'Tech Talk' on Site Development** - The Design Development Studio dedicated a 'Tech-Talk' to site development including slopes, vegetation, trees, use of contours, cut and fill techniques, parking, hard and soft-scaping, as well as the development of a site plan. Some student-selected buildings in DD are on zero lot-line urban sites and not effective for this purpose.

3. **Increased Faculty Awareness** - The school also made a concerted effort to increase faculty and student awareness regarding the importance of site conditions in studio projects.

Under the 2013-14 curriculum reform:

4. **Site Conditions and Planning / New Learning Outcome** - Site conditions and planning became a learning outcome and topic of attention in the 2nd year fall semester B.Arch Design Studio (1st year fall semester M. Arch) as part of the studio project requirement. A module teaching design and management of slopes, contours, cut and fill as well as vegetation, roadways, parking, hard and soft-scaping has been added.

5. **New IDS Studio w/ Emphasis on Site Conditions and Planning -** Integrated Design Schematic Studio, required for the B.Arch students, has learning outcomes and teaching expectations regarding site conditions and planning as part of pre- and schematic design phases.

Program Response to Causes of Concern

CONDITION 3.4 Social Equity (M.Arch 1 and B.Arch.)

VTR text: The cause for concern in 2010 is based on lack of faculty diversity. There are only two women faculty who are full time. Both work primarily off campus.

The accredited degree program must provide faculty, students, and staff- irrespective of race, ethnicity, creed, national origin, gender, age, physical ability, or sexual orientation- with an educational environment in which each person is equitably able to learn, teach, and work. The school must have a clear policy on diversity that is communicated to current and prospective faculty, students, and staff and that is reflected in the distribution of the program's human, physical, and financial resources. Faculty, staff, and students must also have equitable opportunities to participate in program governance.

This criterion was met with concern in the two previous visits and again in this visit. This team finds the original issues have only been partially resolved. Student recruitment efforts have increased the number of women and minorities enrolled in the undergraduate program and there has been a significant increase in the level of student retention.

However, there continues to be an issue regarding the hiring and retention of female and persons from underrepresented groups to serve as full-time faculty members. In addition, no women or minority faculty members have been promoted to the level of full professor, when asked about the historical record of promotion for women, RPI was not able to provide additional information. With the assurances and immediate actions by the new dean regarding recent hires for clinical and adjunct faculty positions and with the diversity hiring goals set forth by the university administration, the team

is confident that the issue of social equity as reflected in the distribution of faculty positions will be rectified within an expedited time span. To temporarily bridge the gap regarding the lack of women and minority role models for the students, women speakers dominate the list of lecturers featured in the 2009-10 All-school Lecture Series. This year's adjunct and clinical faculty hires reflect a commitment to bring more women and minority architects to RPI.

RESPONSE

SoA's Commitment to Diversity - The School has taken strong steps to increase diversity among the full-time faculty, in response to the program's unwavering commitment to intellectual, gender and ethnic diversity. The School of Architecture abides by the Institute's policy on Institute Diversity as stated by President Shirley Ann Jackson (www.rpi.edu/dept/diversity/).

1. **Diversity Candidate Solicitation -** Specific teaching and research areas were identified as strategically important profiles. An aggressive faculty recruitment drive comprised of advertising in premier architectural journals, an extensive amount of School mailings, and personal outreach efforts helped draw a large pool of diverse candidates. Selected advertisement journals included: *Higher Ed Jobs, Inside Higher Ed, Diverse Issues in Higher Education, Chronicle of Higher Education, ACSA News,* and *Women in Higher Education.* The Dean delivered a clear message to the Faculty Search Committee concerning the school's unwavering commitment to diversity and the importance of acquiring outstanding candidates with diverse intellectual, gender and ethnic profiles.

2. **Fall 2011 Successful Tenure Track Hires** - The Dean succeeded in acquiring support from the President for five (5) new Full-Time Tenure-Track lines. In the fall of 2011, SoA appointed five (5) new Full-Time Faculty to the program. Two were diversity hires (one female and one African American male). All five were exceptional and represented a major asset to our program.

3. **Fall 2014-15 Successful Tenure Track Hires -** In 2013-14, School was allowed to hire three tenure-track faculty. Working with the Office of Human Resources, we hired three outstanding female faculty (Dr. Alexandra Rempel, Dr. Nancy Diniz, and Dr. Lydia Kallipoliti). This is in keeping with the Institute's commitment to diversity and its strict adherence to affirmative action and diversity hiring. This brings the total number of tenured/tenure-track female faculty in the SoA to 5 of 19, or 26%. In addition, we note that currently 1 (5%) faculty member is Black/African American, and 3 (15%) are Hispanic.

4. **Faculty Diversity / Promotion 1** - Anna Dyson, who in 2008 was appointed Director of CASE, was promoted to Full Professor in the spring of 2011. This promotion was significant, given that Professor Dyson was the first female Full Professor in the School of Architecture.

5. **Faculty Diversity / Promotion 2** - Since the VTR, another of our female faculty, Mariana Figueiro, was promoted to Full Professor in July 2014. Now, of our 5 full professors (not counting our Dean), 2 (40%) are female.

6. **All-School Lecture Series** – Since Fall 2009, 27 or the 91 invited speakers in our all-school lectures series have been women, which means 30% of our speakers have been female. This sends another clear message to our students and faculty that we're committed to diversity.

7. **Diversity Task Force** – In Fall 2015, the Dean established a diversity task force to develop an official *policy on diversity*, which will be distributed to our faculty, staff and students.

CONDITION 7.0 Human Resource Development (M.Arch 1)

VTR text: Students and faculty recognize the effectiveness of the intensive infrastructure needed to advise students at multiple points within the B.Arch. undergraduate program. In contrast, students within the small M.Arch complained of inadequate and inconsistent advising. The Team is concerned about the School's ability to provide an effective advising program to students. This will become even more challenging as the graduate program increases in size and complexity. A clear and effectual advising system must be developed and implemented to meet the anticipated growth within the graduate program. Schools must have a clear policy outlining both individual and collective opportunities for faculty and student growth inside and outside the program.

The team finds this condition to be met with concern regarding mentorship and student advising for the M. Arch program. The School of Architecture provides abundant opportunities for student involvement in academic and professional experiences beyond curricular instruction nationally and abroad. Some of these events and programs include the Bedford Travelling Scholarship, the Center for Architecture Science and Ecology, foreign study travel to India, China, and Rome. The spring Lecture Series and regional fieldtrips broaden the understating of architecture. Many of these programs and events also contribute to faculty development and professional enrichment. Along with the Lighting Research Center and EMPAC these facilities and initiatives act as both intellectual and physical resources for cross-disciplinary research and creative activities.

Although a strong campus ethos of progressiveness and professional relevancy is shared by university and school administration as well as faculty, a lack of clarity about the internal mechanisms to facilitate the professional development of faculty persists. There is a need for additional articulation and campus-wide advocacy of the expectations for tenure-track faculty in the production of research, scholarship, and creative activities uniquely framed by standards within the field of architecture. However, the team notes that the concern for strengthening or implementing internal mentorship between more senior tenured faculty and junior tenure-track faculty towards tenure is exacerbated by the deficit of tenured faculty.

Both, students and faculty recognized the effectiveness of the intensive infrastructure to advise students at multiple points in their academic experience. It is noted however that this commendation in the area of advisement is limited to the B. Arch undergraduate program. Students in the M. Arch have a different advisement system which needs continual support especially in light of future plans to increase the number of students enrolled in the program

RESPONSE: M.Arch 1 Academic Advising

The School of Architecture has made a concerted effort to provide a comprehensive, thorough and impactful student mentorship and advising program for all graduate students.

1. **Increased Student Advisement** – The School expanded the administrative leadership team overseeing graduate studies to include a Head of Graduate Studies and a M. Arch I Program Director who serves as an official academic adviser to each M.Arch student. The Institute's Office of Graduate Education [OGE] requires the yearly filing of a formal Plan of Study document that mandates a meeting between the student and adviser. Students may also avail themselves of the Graduate Program Administrative Director, who is able to answer questions about degree requirements and School and Institute regulations. In doing this, the M. Arch program duplicates the

formal structure of the B.Arch program, which received the team's commendation. There is now a significant mentorship program in place for all of the graduate students.

RESPONSE: Facilitating Professional Development of Faculty

In response to the school's commitment to empower the professional development of the FTT faculty, the Dean established a series of important committees that have had a transformative impact.

1. **Tenure-Track Mentoring Program** – In Fall 2010, the Dean established a mentoring program by which all tenure-track faculty are assigned two tenured senior faculty to oversee their progress in scholarly research, teaching and service. Junior faculty are to meet with their mentors at least once per semester. Mentors are expected to provide professional development advising in support of the junior faculty moving toward the promotion & tenure process. The Dean makes a concerted effort from one semester to the next, to share information regarding career development opportunities (i.e. peer-reviewed publications and conferences) with the junior faculty. The program has proven to be a resounding success, given that junior faculty now have strong mentorship support, and senior faculty are far more involved in the entire P&T process than ever before.

2. **Established Architecture Tenure Standards Task Force** -In 2012-13, the Dean created an Architecture Tenure Standards Task Force to develop an outline of standards relating to the diverse expectations for tenure-track faculty in the production of research, scholarship, and creative activities uniquely framed by standards within the field of architecture. The work of the task force was intended to clarify the diverse P&T candidate profiles in our School for the school's P&T committee, the Dean's Council, and Faculty Senate.

Program Response to Change in Conditions (if applicable)

The school's response to changes in the conditions has been significant. A 2013-14 inclusive and thorough curriculum review and reform of the B. Arch and M. Arch programs in the context of NAAB's Defining Perspectives and student performance criteria led to a number of related changes, including:

1. **Increased Faculty Expertise** - Adding two full-time faculty members in the area of environmental analysis and design, in response to *Stewardship of the Environment*.

2. **Expanded Core Courses** - Expansion of the core (required) environmental conditions and design courses from two to three, with the additional of a first-year course in Energy Comfort and Ecology for the B. Arch students, in response to *Stewardship of the Environment.*

3. **Strengthened M.Arch Program Distinction** - Creating a dedicated semester at CASE for the M. Arch students, in response to *Stewardship of the Environment.*

4. **Expanded Professional Practice Courses -** The expansion of the Professional Practice sequence from one course to three. Professional Practice 1 is re-dedicated to project management and is a coordinated co-requisite with Integrated Design Development Studio. Professional Practice 2 is dedicated to practice management. The Economics of Architecture will address the economics of the design and construction industries and has yet to be phased in. In response to *NAAB SPCs associated with Realm C.*

5. **Expanded Professional Practice Courses -** The expansion of the core studio sequence with the addition of Integrated Schematic Design Studio for the B. Arch students that serves as a primer and

prerequisite to the Integrated Design Development Studio. In response to *NAAB SPCs including B.1 Pre-design, and B.2 Site Design, and Realm C.*

6. **Strengthened Methods Course -** Specific attention to the methods course in the final year of the B. Arch and M. Arch studies, including focused attention on understanding the various theoretical and applied methods of research.

Section 3 – Compliance with the Conditions for Accreditation

I.2.1 Human Resources and Human Resource Development

Faculty Resumes and Matrices

- Faculty Resumes are available by accessing link http://www.arch.rpi.edu/naab/10-Faculty-Resumes.pdf).
- Faculty Matrices for 2013-14 and 2014-15 are available by accessing link http://www.arch.rpi.edu/naab/11-FacultyMatrices.pdf
- A Faculty Matrix for 2015-16 will be made available in February 2016.

1. Human resource development opportunities - At Rensselaer, professional development of faculty and staff is a priority, and for students, human resource development is our very business. The School's policy is to "broadly educate men and women who will be able to exert constructive leadership in society and to contribute to human welfare. Both for the enrichment of Rensselaer and for the greatest contribution to society, Rensselaer seeks to nurture an environment for Faculty and students from a variety of geographical, intellectual, ethnic, economic, and cultural backgrounds." … "Rensselaer strives continuously to attract and nurture a Faculty of outstanding scholarship and educative ability and will work to provide those material facilities and opportunities needed for optimal achievement and intellectual growth."[1]

Rensselaer has been consistently ranked highly as an employer, in no small part due to its benefits policy which can be viewed at http://hr.rpi.edu/update.do?artcenterkey=270. Key components of that policy include generous tuition benefits, a parental leave policy, and sabbatical leaves for faculty.

The Institute and the School of Architecture provide opportunities for faculty to remain current in their knowledge of the changing demands of the discipline, practice and licensure through an explicit understanding that their active employment is nine-months per year, leaving three months for research and scholarly production including the possibility for creative activities and design production. During the academic months it is also expected that a portion of their time be dedicated to research and/or scholarship. In Architecture, one path to tenure is through critical practice that uses design as a form of research production that is disseminated and recognized as significant by one's peers.

How Faculty Remain Current in the Discipline - Faculty remain current in their knowledge of the changing demands of the discipline, practice and licensure by a variety of means including but not limited to professional practice as licensed Architects, practice under licensed Architects, practice as designers and builders at a variety of scales, and through continuing education as required by the AIA and/or licensing jurisdiction. A substantial percentage of professional program faculty engage in design practice as part of their scholarly and research pursuit. In addition, faculty members remain current in their discipline by engaging in research and scholarship, and presenting at conferences and symposia.

Faculty with Architecture and/or Engineering Practices

Full-Time

- **Lonn Combs**, co-Founder/Principal, Easton + Combs, Architects, (Licensed Architect)
- **Gustavo Crembil,** Them
- **Demetrios Comodromos**, co-Founder/Principal, Method Design (Licensed Architect)
- **Josh Draper**, founder/partner, PrePost
- **Lydia Kallipoiti**, Principal, **E**co**R**edux research network **+** ANA*cycle* design+writing studio, (Licensed Architect)
- **Will Laufs**, Founder/Principal, Laufs Engineering Design, (Licensed Engineer)

- **Mark Mistur**, AIA - Founder/Principal Mark Mistur, Architect (Licensed Architect)

Adjunct

- **Koray Duman**, Founder/Principal, Buro Koray Duman (Licensed Architect)
- **Yael Erel,** Design Practice (Licensed architect - Israel)
- **Melanie Fessel**, Director of Design, Terreform ONE (Licensed Architect)
- **Oliver Holmes**, Independent Consultant – Energy and Sustainability, (Licensed Engineer)
- **Carla Leitao**, Founder/Principal, Speculatis Aeterna (licensed in the EU)
- **Murat Mutlu**, Founder/Principal, International Office of Architects (Licensed Architect)
- **Richard Peckham**, AIA, V.P. / Executive Principal, CSArch Architecture (Licensed Architect)
- **Stephen Reilly**, AIA, Lacey, Thaler, Reilly, Wilson Architecture + Preservation. (Lic.Architect)
- **Kyle Stover**, Founder/Principal, Kyle Rx Stover Architecture and Design (Licensed Architect)
- **Lauren Thomsen**, Architectural Designer, EYP, (Licensed Architect)
- **Farzam Yazdanseta**, Project Architect, Actual/Office LLC

Faculty with Design Practices

Full-Time

- **Evan Douglis**, Founder/Principal, Evan Douglis Studio LLC
- **Ted Krueger,** Technologist / Interdisciplinary Design
- **Michael Oatman**, Artist
- **Chris Perry**, co-Founder/Principal, pneumastudio
- **Anthony Titus**, Artist

Adjuncts, Lecturers, Professors of Practice

- **Francis Bitonti**, Founder/Principal, Francis Bitonti Studio
- **Adam Dayem,** founder, actual/office
- **Fleet Hower**, Fleet Hower, LLC
- **Serban Ionescu,** Serban Ionescu Studio
- **Ajmal Aqtash**, Form-ula
- **Erik Churchill**, Bldgworks
- **Brian Deluna,** Designer
- **Edwin Liu**, ISOFORM
- **Joachim Mitchell**, Founder, co-president, Terraform ONE
- **Murat Mutlu,** Founder/Principal, INOA/Internaional Office of Architects
- **Stefano Passeri,** Designer
- **Kyle Stover,** Founder, Kyle Rx Stover Architecture and Design

Resources Available to Faculty and the Extent to which Faculty are Able to Use these Resources

Sabbatical Leave Policy - Rensselaer's sabbatical leave policy encourages faculty to take advantage of this plan once in every ten years, "*for the purposes of professional development through study, research, scholarly activity or service in government, industry, universities or consulting in the practice."* Tenured faculty with 6 semesters of service, and upon request of the faculty and approval and Provost, may be given leave of one semester with half salary. Tenured faculty with 12 semesters of service, and upon request of the faculty and approval of the Dean and Provost, may be given leave of two semesters with half salary or leave of one semester with full salary. Sabbaticals provide opportunities for practice as well as for fellowships, travel, visiting teaching positions, research and scholarship.

Sabbatical Information - The following faculty have taken Sabbatical leaves since 2007:

Faculty Name	Time Period	Activities
David Bell	Fall 2010 semester	1. Wrote article for *JAE*. 2. Worked on writing of three books: *Bernini & Borromini: Theater and Heresy; Jefferson's University as American Dream; and Adolf Loos: The Irritation of Modernity.* 3. Wrote an article for a conference attended in January 2011.
Ted Krueger	Fall 2007 semester	1. Worked on doctorate. 2. Attended Heinz-von Foerster Conference in Vienna, Austria and other conferences in Canada, Czechoslovakia, and France.
Mark Mistur	Spring 2014 semester	1. Autodesk "Educator in Residence Fellowship" at IDEA Studio in San Francisco, CA. 2. Research for and writing of book on Performance Based Design, Vol. 1 (Momentum Press), in progress. 3. Working as editor of book collection series, "Performance Based Design," in progress.
Michael Oatman	2015-16 Academic Year	1. Work on new materials for his courses, including seminar with EMPAC Artist Laurie Anderson. 2. New research in his art studio. Develop a website and archive of his work. 3. Travel to Scotland to develop an art project and conduct research. 4. Develop new work in his studio in Troy, NY.

Start-Up Funds - Rensselaer's policy of awarding new full time faculty hires start-up funds as a means to support the early career scholarship, research, and professional development of new faculty hires is particularly helpful. Funds may be used for research activities including but not limited to hiring assistants, purchasing equipment and travel to conferences and workshops. If faculty do not use all their start-up funds in their first two years, they may apply for an extension of time to use the funds. Currently, faculty in the School of Architecture who have start-up funds include; Alexandra Rempel, Nancy Diniz, and Lydia Kallipoliti. Since the last accreditation five (5) other new faculty hires received Start-up funding as well.

Travel, Conference and Professional Meeting Attendance - In addition to faculty sabbatical leaves and release time, the School, under certain circumstances, will provide funding towards conference fees and travel support to tenure-track faculty that no longer have any start-up funds available or tenured faculty unable to acquire support funds from research grants. (See list of supported travel below.)

List of Conferences and Faculty Travel

Faculty Name	Date	Event
Jonas Braasch	July 2014	Organized 2nd Annual International Conference on Deep Listening, held at Rensselaer.
Lonn Combs	May 2015	Invited, through peer-review process, to present at the 2015 Daylight Symposium in London in August 2015. Presentation is entitled, "Constructing in Natural Light: the Aesthetics of Well-Tempered Domestic Environments."

Gustavo Crembil	October 2014 August 2013	Presented a paper at the 2014 ACSA Fall Conference at Dalhousie University in Halifax, Nova Scotia. Paper is "Working-Out: Thinking While Building." Presented work at "Tactical Robotics: Latin American Media Art at the Intersection of the Pedagogy," an international symposium held at the University of North Texas. Art/Research Residency at the Sachaga Art Center in Peru.
Mariana Figueiro	March 2015 December 2014 August 2014	Keynote speaker at Light Symposium 2015 in Stockholm, Sweden. Traveled to Swedish Energy Agency and met with Nobel Laureate in Physics, Hiroshi Amano. Grand Rounds Presentation at the Mount Sinai Icahn School of Medicine, and at Mount Sinai St. Luke's Roosevelt Hospital, discussing lighting characteristics affecting the visual and circadian systems of older adults, sleep and behavior problems, and light therapy solutions.
Jean Paul Freyssinier	February 2012	Presented work at "Strategies in Light 2012," in Santa Clara, CA. This is a LED lighting conference.
Mark Mistur		AIA Convention (National) 2015, Atlanta AIA State Convention Architect Licensing Advisor Summit IDP Coordinator Conference Atiner Conference, Athens Greece, 2012 ACSA Administrators Conference, 2012
Ted Krueger	March 2015 June 2014	Presentations at several schools in Brazil. Presentations included: "Redesigning Human," and "A Gene for the Anthropocene." 3-week workshop at University of Brazil that included team-based projects building technologically enhanced wearable sensory devices. Students were from Automotive, Aerospace, Biomedical, Software and Electrical Engineering programs. Presented a series of 6 lectures at several universities in Brazil.
Carla Leitao	April 2015	Co-organized a "Designed Matter Symposium" held at SUNY Buffalo to explore developments in science and engineering, and how they can be used to re-imagine design of cities, buildings and consumer products.
Nadarajah Narendran	February 2012	Presented work at "Strategies in Light 2012," in Santa Clara, CA. This is a LED lighting conference.
Chris Perry	March 2015	Co-organized and co-hosted a round-table event at Whitebox Art Center in New York, featuring *PAJ* editor Bonnie Marranca. Chaired a panel, "Disciplinary Centrism" at the ACSA annual conference in Toronto, Canada.
Mark Rea	December 2014	Traveled to Swedish Energy Agency and met with Nobel Laureate in Physics, Hiroshi Amano.
Ning Xiang	June 2013	Faculty and students contributed a series of papers to the International Congress on Acoustics, held in Montreal, Canada.

In 2012, the School of Architecture hosted the SmartGeometry Conference, an international, inter-disciplinary event that ran from March 19th -24th , 2012, bringing some 500 attendees and presenters from around the world to the Rensselaer campus. Entitled, "Material Intensities: Simulation, Energy and the Environment," the conference comprised of (10) research cluster groups, (4) "talkshop" events and (5) keynote lectures, engaged a high percentage of SoA faculty and students throughout the weeklong event. Two of the faculty in the School of Architecture, were selected in a competitive process to serve as cluster leaders: Prof. Dyson (*Bioresponsive Building Envelopes*) and Prof. Vollen (*Form Follows Flow)*.

- **Demetrios Comodromos** and **Jefferson Ellinger** (Co-Coordinators)
- **Evan Douglis**, Dean, (Keynote Speaker)
- **Anna Dyson**, (Cluster Leader: Bioresponsive Building Envelopes)
- **Prof. Robert Hull** of the Materials Science Department in School of Engineering, (Keynote Speaker)
- **Mark Mistur**, Associate Dean, (Conference Site Director)
- **Zbigniew Oksiuta**, (Talkshop Speaker)
- **Jason Vollen**, (Cluster Leader: Form Follows Flow)

Study Abroad Directorships - Faculty members also are selected each year to serve as leaders of our Study Abroad programs. Our faculty members have opportunities to go to Italy, China, and India immerse themselves in the culture of the host country, and participate in joint educational opportunities with faculty at the foreign universities where they and the students spend an entire semester.

Faculty Name	**Semester**	**Location**
Zbigniew Oksiuta	Fall 2015	Rome
David Bell	Spring 2015	India
Elena Perez-Guembe	Fall 2014	Rome
Kyle Stover	Spring 2014	China
Ted Krueger	Fall 2013	Rome

Brown's Traveling Fellowship - The School of Architecture offers an annual opportunity to be awarded a Brown's Traveling Fellowship. Each year, (3) SoA faculty – (1) tenured (award: $12,000), (1) tenure-track (award: $12,000) and (1) contingent – (award: $7,500) are selected to receive a fellowship that provides them funding to study a topic of their choice in a foreign country.
Upon their return, they are required to make a presentation to the faculty, staff and students so everyone may learn from their experiences. Attached is a list of recent Brown's Fellowship faculty winners and the titles of their travel proposals.

Faculty Name	**Year**	**Travel Location / Project Title**
N. Narendran	2015	Asia/South Asia / *Understanding Lighting Practices in Rural Homes of South Asia and Asia*
Anthony Titus	2015	Japan / *Projected Futures: Contemporary Japanese Museums and the Art of Display*
Yael Erel	2015	London, England / *Constructing Reflections*
Ted Krueger	2014	Brazil / *Sensory Substitution*
E. Perez-Guembe	2014	Netherlands / *Real and Imaginary*
Lonn Combs	2014	Germany (has not traveled yet) / *Between Form and Belief*
Ted Ngai	2013	Western United States / *A Visual Guide to Speleomorphology: The Landscapes of Calcium Carbonate Formations*
Andrew Saunders	2013	London, England / *Sartorial Tectonics: Fabricating Cultural and Material Affects of British Textiles*

Ning Xiang	2013	China / *Study of Acoustics Innovations in China's New Performing Arts Centers, and Development of New Room-Acoustics Capabilities*
Julia Watson	2012	Bali and Indonesia / *Landscape Architecture without Landscape Architects: On the Subaks of Bali, Indonesia*
Mariana Figueiro	2012	U.S, Canada, Switzerland, Germany, UK and Brazil / *24-hr Lighting Scheme for Older Adults Around the World*
Zbigniew Oksiuta	2012	Japan / *Clap with One Hand*
Mark Mistur	2011	France and Germany / *IT'S ABOUT TIME: Re-Forming Design Practice and Architecture and Engineering Education*
Gustavo Crembil	2011	South America / *The State of Informal, a Comparative Catalog of Latin American Cities*
D. Comodromos	2011	Spain and France / *Know How Know What: Analogical Models, Documented Construction + Projected Simulations*

Guest Reviewers – In support of the School of Architecture's is commitment to increasing the intellectual diversity throughout the program, distinguished practitioners, engineers, theorists, historians, artists, industry experts, and researchers from related fields, are invited to share their unique perspective and experience with our students and faculty on a continuous basis as 'guest reviewers'. School of Architecture Faculty also keep current in their fields by serving as reviewers at other architecture schools in the United States and internationally. A vital part of the educational program at Rensselaer's School of Architecture is the review of student work by outside reviewers. The review process is conducted as a public event and open to the entire school. This is an exciting and important part of the curriculum for each of our studio courses, and it also provides our faculty with important opportunities to meet with colleagues from other schools and disciplines, as well as architects with practices in New York City, Montreal, Philadelphia and other major metropolitan areas.

Our faculty regularly serve on each other's studio reviews, and as invited guest reviewers at others schools providing them many opportunities for intellectual exchange.

Faculty Serving on Juries as Critics at Other Schools

Faculty Name	Date	Event
Gustavo Crembil	2014 2013 2012 2011	Tectonics & Construction Curriculum Committee, Lawrence Technological University (Michigan) Macapa Municipality, Amapa, Brazil. Macapa Municipality, Amapa, Brazil. International Dual-Degree Graduate Program, College of Architecture and Urban Planning at Tongji University, Shanghai, China. One-week design charrette on urban design and development for Iquitos Municipality, Loreto, Peru. Also served as guest critic at Rhode Island School of Design, Washington University in St. Louis, Universidad Nacional de Cordoba in Argentina, Universidad Catolica de Cordoba in Argentina, Universidade de Sao Paulo in Brazil, City College of New York, Lawrence Technological University (Michigan) and Cranbrook Academy of Art.
Anna Dyson		Yale University, Columbia University, Syracuse

		University, Parsons, University of Pennsylvania, Pratt Institute, Massachusetts Institute of Technology.
Ted Krueger	2015 2014 2014	Universidade Federal do Rio de Janeiro, Brazil Several universities in Brazil Clemson University Cranbrook Academy Lawrence Institute of Technology (Michigan) Pratt Institute
Carla Leitao	2013 2011-12	Jury in Peer Review, "Future Traditions," Regional International Workshop, Portugal. Jury/Nominator Lisbon Architecture Trienale, Premio/Debut/Award. Roving Critic at Columbia University Graduate School.
Mark Mistur	2015 2013-14 2012-13	SUNY Buffalo Georgia Tech Stanford University Berkeley University California College of the Arts Auburn University University of Arkansas, Auburn University (Rome) University of Arkansas University of Calgary Bath University (UK) École Especial d'Architectur (Paris) University of Arkansas (Rome) Auburn University (Rome) City College Undergraduate Architecture
Michael Oatman		Rhode Island School of Design Vermont College CEPT University in Ahmedabad, India Maine College of Art State University of New York at Albany
Anthony Titus		Art Center Environmental Studies in Pasadena, CA; Barnard College in NYC City College Undergraduate Architecture in NYC; Columbia University GSAPP Cornell University APP Harvard Graduate School of Design Massachusetts Institute of Technology Parsons/New School in NYC Rhode Island School of Design SCI-Arc in Los Angeles CA: University of Idaho University of Maryland at College Park; Yale Univ.

Tuition Benefits Policy - For regular full-time employees and their spouses, Rensselaer will pay 75% of the cost of tuition for a maximum of 2 courses per semester up to a maximum of 6 courses in each fiscal year for courses taken at Rensselaer. Rensselaer also offers benefits (External Tuition Policy) for regular full-time employees who take courses at schools outside Rensselaer. Reimbursement is 75% of the cost of tuition, and coursework. All coursework must be job-related and approved in advance by the immediate supervisor and Department Head, Dean or Vice President, The Human Resources website (http://rpi.edu/dept/hr/tuition_files/TuitionBenefitEmployeesSpouses.pdf) describes the details of the tuition policy.

In the School of Architecture, the Business Manager is currently completing a Master of Business Administration program through the State University at Albany. Staff also remain current by attending on-campus workshops and meetings on student advising, diversity, purchasing, and other work and learning-environment related matters.

Parental Leave Policy - A parental leave policy provides relief from teaching for one semester with full pay with the potential for a one-semester extension at half-pay (See Faculty handbook for details / http://www.rpi.edu/dept/provost/facultyhandbook1-06.pdf . In the case of tenure-track faculty, a parental leave results in an automatic extension of the tenure clock (unless the faculty member choses to forgo this option), in order to ensure that having a family and being a productive and successful member of the faculty with every opportunity to advance, are not in conflict.

Professional Development that Contributes to Program Development - Many individual professional development opportunities also contribute to program improvement. The development of the Bedford A/E seminar and studio can be credited in part to the development of an international network of architectural and engineering professionals through the Bedford Traveling workshops. Sabbaticals have resulted in fellowships that inform the development of new pedagogies relating to the integration of BIM. The Brown's Fellow program has added richly to the learning culture of the school through faculty and student presentations and exhibitions. Experiences from conferences, workshops and travel regularly enrich the classroom and discourse of the school.

Faculty Workloads - At Rensselaer, faculty are responsible for teaching and do not rely on Ph.D. Teaching Assistants for more than assistance delivering the courses. In Architecture, especially the professional programs, even that is rare. There is a rich culture of exchange between students and faculty especially as it relates to studio culture and the many contact hours (typically 8-14 hrs. per week) dedicated to that setting. Architecture faculty are committed educators and apt to make even greater time commitments to promoting student achievement on field trips, workshops and semesters abroad, etc.

Tenure and tenure track faculty nominally have a four-course load per year although this may be adjusted, based upon release time granted by the Dean attributed to the allocation of significant research funding on the part of the faculty or for those assuming an administrative role on behalf of the school. For studio instructors it is typically one 5 or 6 credit studio and one 2-credit seminar per semester. Non-studio instructors in Architecture will typically teach two four credit courses per year.

Each year, workloads and teaching assignments of all faculty are developed in relation to administration loads, service loads and funded research obligations. Associate Deans have a two-course load reduction, program heads and center directors a one course reduction, and faculty with substantial research obligations (>$200k) a one-course reduction, but no faculty member is permitted to teach less than one course per year. The Dean reviews the loading annually and makes provisions for special circumstances relating to service and in some cases relating to the tenure clock, etc., to ensure that faculty have sufficient time to engage in productive research and scholarship.

A list of past and projected faculty research (funded or otherwise), scholarship, creative activities by full-time instructional faculty since the previous visit.

For a complete listing see List of Faculty Research and Activities (http://www.arch.rpi.edu/naab/15-Faculty-Scholarly-Activities.pdf).

Faculty Lectures

Faculty Name	Date	Event
Gustavo Crembil	April 2015 June 2014 October 2013	"Informal Practice(s)," California State University at Long Beach, College of Arts. "Haptic Thinking: Contemporary Craft in Architectural Education and Practice," World Congress of Designers, Dalian, China. Invited speaker. Presented a paper, "Mestizo Robotics" at the 2013 RE-NEW Festival and Conference in Copenhagen.
Evan Douglis, Dean	April 2014 November 2014	Keynote speaker at the Future Cities conference in London. University of Cincinnati ACSA Administrators Conference Phila, PA.
Yael Erel	December 2014	Show and artist talk, "Revealing Lightscapes," at miSci museum in Schenectady, NY.
Mariana Figueiro	September 2014	TedMed talk on 9/12/14 at Kennedy Center in Washington, D.C. On lighting and health.
Ralph Ghoche	December 2012	Presented lecture at Columbia University as part of a *History in Architecture* course.
Ted Krueger	November 2012 February 2014 April 2014	Presented a lecture at the New Jersey School of Architecture, NJ Institute of Technology. Chaired the Laskey Charrette at Sam Fox School of Architecture at Washington University in St. Louis. Panelist at "The Future of Food: Redesigning the Food Supply" at Stone Barns Center for Food and Agriculture in Pacantico Hills, NY.
Russ Leslie	November 2012	Attended 3rd International Off-Grid Lighting Conference in Dakar, Senegal.
Ivan Markov	April 2015	Presented an invited lecture at Harvard University's Graduate School of Design, and another at Princeton University's Civil & Environmental Engineering Dept.
Mark Mistur	February 2013	Invited Lecture at the Rome Center: "Eco-logics: A New Paradigm for the Design of Urban Environments"
Nadarajah Narendran	November 2012	Attended 3rd International Off-Grid Lighting Conference in Dakar, Senegal
Chris Perry	October 2013	Presented a lecture at the New School in NYC Presented a paper at the annual Phyllis Lamber Conference at the University of Montreal.
Alexandra Rempel	April 2015	Presented a paper at the Symposium on Simulation and Urban Design in Washington, D.C.
Anthony Titus	Fall 2014 February 2013	"Marginal Tactics," at University of Wisconsin Milwaukee. "Blank Field," Bennington College, Bennington, VT. Invited speaker at University of Maryland symposium on future of architecture and relationship between Art & Architecture.

Faculty Exhibitions, Installations, Projects, etc.

Faculty Name	Date	Event
Gustavo Crembil	October 2013	Opening of exhibition of his students' work at the MiSCI museum in Schenectady, NY.
Evan Douglis, Dean	September 2015	Shanghai Biennale (invitational)
Mark Mistur	May 2015	Opening of Challenger Learning Center, Schenectady, NY – Mark Mistur, Architect - $1.6m
Michael Oatman	September 2014	Exhibition, Nuit Blanche 2014 (the White Night) , a 12-hour art festival showing the works of 40 international artists who were invited to exhibit. Oatman's project, *The 8th Wonder*, is a 25-foot inflatable sculpture supported by scaffolding, which serves as the site of a music endurance work by cellist Paul deJong and Prof. Oatman, who plays drums and percussion. Several students assisted with the project.
	Aug-Dec 2013	Exhibition entitled, "An Armory Show," with Prof. Kenneth Ragsdale (RPI Arts Dept.) at the Opalka Gallery at Safe Colleges in Albany. Project pays homage to "The Armory Show" of 1913, which was held at the 69th Regiment Armory in NYC and presented by the Association of American Painters and Sculptors.
	March 2013	Supervised a student production entitled, *The Machine Starts,* an interactive performance piece based on E.M. Forster's 1909 science fiction novella, The Machine Stops. This was part of the School's PIP program (Production-Installation-Performance).
	Feb-Sept 2013	Exhibit, "Some Assembly Required," at Albany International Airport in Albany, NY.
	April 2013	"Michael Oatman: Another Fine Mess," opened at the Thompson Gallery at the Cambridge School in Weston, MA, as part of the gallery's "Collage at 100" series.
	October 2012	His monumental collage, "The Branch," or "The Site of our Complete Liberation," was featured in the inaugural exhibition of the Ruth and Elmer Wellin Muerum at Hamilton College in Clinton, NY.
Anthony Titus	2015	Group exhibition, *Measure*, at Storefront for Art and Architecture in NYC.
	February 2015	Exhibit of 20 new paintings at Friedman Benda gallery in NYC.
		Exhibition entitled, "Oblique Strategies," at the Peter

	January 2013 June 2014 2014	Fingesten Gallery at Pace University. Work is included in the exhibition and accompanying catalog, *Vienna for Arts Sake!* Curated by Peter Noever. *Surface Mining*, AAP, Cornell University, solo exhibition.

List of Faculty Research Projects

Faculty Name	Date	Event
Jonas Braasch	September 2014	Working with Prof. John Wen (RPI) on a project to transform less expensive, human-friendly industrial robots into affordable assistive robots capable of assisting quadriplegics and other disabled persons with daily living and health tasks.
CASE	Current	Faculty and students are working with colleagues in Ghana to develop building materials from coconut husks (the parts that are discarded after the coconut is harvested). In Ghana currently, most building materials are imported, and the disposal of the coconut husks is creating pollution problems, since the husks are often burned or dumped in rivers. With a grant from NEXUS (New Energy Accelerator for Upstate New York), CASE is working to accelerate commercialization of coconut for integrated building applications and transform building practices.
Gustavo Crembil	August 2013	Developed a robotic prototype with video documentation ad a book draft, through a project supported by a Production Incentive grant from VIDA 14.0 Art & Artificial Life, the Telefonica Foundation in Spain.
Lighting Research Center	December 2012 October 2013 December 2013 December 2013	Developed a concept for roadway illumination to provide lighting for crosswalks in traffic circles. Research sponsored by NYS Energy Research and Development Authority (NYSERDA) and NYS Dept. of Transportation. Study on *Sleep Deprivation* for the naval Medical Logistics Command. Research on Incubators for Premature Infants, sponsored by National Institutes of Health. Working with researchers at Duke University, studying sleep and insomnia patters in lemurs with expectation that it will help researchers understand sleep disturbances in people with dementia/Alzheimer's and

		whether light therapy can help.
	March 2014	Research on "Lighting Africa" testing services, sponsored by the World Bank.
	July 2014	NIH sponsored study entitled, *Individually Tailored Lighting Systems to Improve Sleep in Older Adults.*
	February 2015	Research entitled, *Warning Beacons for Front-Line Service Worker Safety,* sponsored by National Institutes of Health.
	February 2015	Federal Aviation Administration research study entitled "Airport Lighting and Visual Guidance: Technology and Human Factors Research."
Alexandra Rempel	November 2014	She and Prof. Anna Dyson and other RPI partners received a "Knowledge and Innovation Program" seed grant from the RPI Office of Research.
Anthony Titus	2013	Graham Foundation Grant, *Twisted Siblings: Relationships Between Contemporary Painting and Digital Architecture.*

List of Faculty Awards, Honors, Etc.

Faculty Name	Date	Event
Lonn Combs	June 2015	His firm, Easton+Combs is among five finalists for Florida International University's *Emerging Architects Initiative Installation* at the FIU Modesto A. Maidique Campus in Miami. The installation is to be housed by French-Swiss architect, Bernard Tschumi.
	March 2015	Received the Distinguished Alumni Award for Professional Achievement, from the University of Kentucky College of Design, given to recognize alumni who have made significant contributions to society and whose career and accomplishment have brought distinction to their profession, local community and the College of Design.
	December 2012	His practice, Easton+Combs, was recognized for innovative work in Architectural Record's 2012 Design Vanguard series. The firm was one of 10 selected by a jury process resulting from an open call of design firms worldwide.
	2011-12	Fellow at the American Academy in Rome: Gorham P. Stevens Rome Prize Winner in Architecture. Proposal: "New Vectors of Liquid Stone: speculations on the Material Innovations of Pier Luigi Nervi and the Roman Tradition."
Demetrios Comodromos	May 2014	Received a national Architeizer A+ Award for

		architecture and collaboration for the Louisiana State Sports Hall of Fame + Regional History Museum, which was done by his firm, *Method Design*.
	2014	Named one of America's Most Admired Educators by *Design Intelligence*.
Nancy Diniz	June 2015	Won a prize in a competition for Milan EXPO 2015, which has a theme of "Feeding the Planet – Energy for Life."
Evan Douglis, Dean	February 2015	Received the John Q. Hejduk Award from the Irwin S. Chanin School of Architecture at The Cooper Union. Award is given annually to a graduate who has made an outstanding contribution to the theory, teaching and/or practice of Architecture.
	2015	Named one of America's Most Admired Educators by *Design Intelligence*.
Koray Duman	May 2015	His firm, Buro Koray Duman Architects in NYC, received a Bronze Award of Merit from SARA NY (Society of American Registered Architects, New York Council) for his project entitled, "Design Within Reach – 57th Street."
Anna Dyson	September 2012	Received the 2012 ACADIA Award for Innovative Academic Program.
Mariana Figueiro	February 2015	Invited to serve on editorial board of newly formed journal, *Sleep Health: Journal of the National Sleep Foundaiton."* Additionally, her paper was selected for publication in the inaugural issue, released March 2015.
Carla Leitao	February 2015	Her design practice, *AUM Studio*, is featured in a new book, Global Design, edited by Pedar Anker, Louise Harpman and Mitchell Joachim.
Lighting Research Center	June 2015	Bloomberg Philanthropies announced the 4 cities selected to receive up to $1 million each as part of the Public Art Challenge. The Lighting Research Center's submission (for Albany-Troy-Schenectady) was selected. The LRC plan is to illuminate up to 300 vacant homes over the next several months in order to regenerate interest in once-vibrant neighborhoods that currently have high-vacancy rates.
Mark Mistur	December 2014	Trustee's Outstanding Teaching Award, is the highest teaching award of the Institute recognizing outstanding accomplishments in classroom instruction.
Nadarajah Narendran	December 2012	Awarded a patent entitled, "Solid-State Light (SSL) Source Light Bulb."
Zbigniew Oksiuta	February 2012	Awarded the Ars Bioarctica Residence at the University of Helsinki the Finland.
Chris Perry	June 2015	Elected to the Board of Directors for the Association for Computer Aided Design in Architecture (ACADIA).
	February 2015	His design practice, *pneumastudio,* is featured in a

		new book, Global Design, edited by Pedar Anker, Louise Harpman and Mitchell Joachim.
	June 2014	His design practice, *pneumastudio,* has been commissioned to design an experimental pavilion for the OMI Internaitonal Arts Center in Ghent, NY. The design studio also has been commissioned to submit a schematic design proposal for the 7th Street Park in Hudson NY, in support of the city's application for a state grant to redesign the park.
	May 2014	His students were awarded 2nd Prize in the *WT SmartCity Award* in Milan, Italy, International urban and Architecture Competition.
	2013	Recippient of the MacDowell Colony Fellowship for a 3-week residency.
Anthony Titus	June 2014	Wrote Foreword for the book, The Great White Whale is Black, by Anthony Candido. Peer reviewer for *Journal of the British Interplanetary Society*, related to a special issue on architecture and outer space.
Ning Xiang	October 2014	Received the 2014 Wallace Clement Sabine Award of the Acoustical Society of America. The award is presented to an individual who has furthered the knowledge of architectural acoustics, as evidence by contributions to professional journals and periodicals or by other accomplishments to the field of architectural acoustics.

Student Support Services

1. School-based and Institute Advising - Both the Institute and the School of Architecture offer a wide range of advising and career planning services, creating many opportunities for students to engage with faculty and professional staff to assist in developing and achieving their goals. In the School, every student is assigned to a faculty academic advisor who provides academic, personal and career guidance as the student progresses in their program. M.Arch students are assigned to the M.Arch 1 Director who personally oversees their development.

On the first day of classes in the first year of the B.Arch program, the school holds a "Meet Your Advisor" session. Subsequently, students are required to meet with their advisors at least one time per year, and must do so to be cleared for registration. Faculty advisors assist with a number of issues relating to course registration, developing plans of study that include the integration of a semester abroad and/ or at CASE, minors and/or the pursuit of a co-terminal degree. Students may also receive notifications of concern originating from their instructors through an Electronic Warning System (EWS) that generates emails to advisors, CLASS Deans (Clustered Learning, Advocacy and Support for Students) in student life and to ALAC (Advising & Learning Assistance Center). Notifications may be the result of poor test performance, low performance on assignments, poor attendance or more specific personal concerns that trigger the advisor to reach out to the student. Should ALAC and/or CLASS see a pattern for a particular student intervention may be initiated.

2. Mandatory Faculty Training Sessions - In 2014, in response to student exit survey indications that students wanted more from faculty advisors, the School held two mandatory training sessions for all faculty who serve as advisors, providing them with updated information about curricula, research and internship information, co-terminal degrees and other relevant information. In 2011 and 2014, the School of Architecture initiated two mandatory preemptive information and training sessions with senior professional staff from the Institute health center regarding early warning signs with respect to stress, depression, and potentially harmful behaviors and how faculty and advisors should respond. The school also has a full time Student Services Administrator who is available to assist students with registration, minors, and degree clearance, etc.

3. Architect Licensing Advisor (ALA) - The school's Architect Licensing Advisor (ALA), Prof. Mark Mistur, holds a mandatory meeting with first year professional program students annually to introduce himself as their ALA, present and discuss what it means to be an Architect and the path to licensure, including the establishment of an NCARB Record, the Intern Development Program (IDP), the Architecture Registration Exam (ARE) and the various jurisdictions. He gives optional talks to upper level students who are, or are soon to be engaged in internships. He is available to students for questions and advising on matters relating to the profession at all times. Faculty members provide assistance in finding internships, making recommendations and in some cases hiring students as interns during the semester break periods. The school also maintains a list of internships, scholarships and posted positions on our web site.

4. Career Development Initiatives - The School sponsors a Career Fair every spring. All students are encouraged to attend, since many of the companies in attendance seek summer interns as well as new graduates. Starting in Fall 2012, the Dean launched a "Blast-Off: career development chats" program that occurs once per semester, bringing students and two faculty together for an informal suppertime chat about career paths, options for graduate school and professional employment, working internationally, etc. In the last two years, the AIAS and NOMAS student groups have run a "Position Series" of Saturday workshops in which they invite professionals to talk with students about jobs, starting a practice, creating a portfolio, etc. Our AIAS students also run a student mentorship program, assigning each new first year student with an upperclass mentor for the year. Resume development, interviewing and cover letter writing strategies are addressed through portfolio review days, resume and portfolio workshops and presentations by faculty and local professionals.

5. CLASS - The Institute initiated the CLASS (Clustered Learning, Advocacy and Support for Students) several years ago, adopting a system to reorient the student experience focusing on six developmental themes delivered through clustering students by cohort and residential community. The themes are: personal development, leadership development, cultural development, community, and communiversity. Each class year has a CLASS Dean who together with professional staff from student life is responsible for and gets to know that cohort. CLASS is particularly effective for the important first two years when on campus residency is required. Details are available at
(see http://admissions.rpi.edu/undergraduate/life/class.html)

6. Additional Institutional Support - The Institute offers students a comprehensive array of services through the Dean of Students office, the Advising & Learning Assistance Center (ALAC), the First-Year Intervention Program, the Counseling Center (see http://studenthealth.rpi.edu/counseling.php) within the Health Center, and the Center for Career and Professional Development.
(see https://www.rpi.edu/dept/cdc/)

The Advising & Learning Assistance Center (ALAC) (see http://alac.rpi.edu/) offers advising, intervention, study skills, tutoring, and other services, plus language and culture programs for international students. The *Learning Assistant Program* engages selected student assistants who live in first-year residence halls and are liaisons to the ALAC. The *Teaching and Learning Assistance Program* trains selected

graduate students to tutor, advise and mentor undergraduates. The *First-Year Intervention Program (FIP)* is a mandatory mentoring program for 1st-year students whose GPA drops below 1.5 in the Fall semester.

7. Student Handbook - The Dean of Students Office provides a comprehensive "Rensselaer Handbook of Student Rights & Responsibilities," (see http://www.rpi.edu/dept/doso/resources/judicial/docs/2014-2016RPIHandbookofStudentRightsandResponsibilitiesAUGUST2014.pdf), which is made available to students when they enter Rensselaer. The Handbook covers student-teacher relationship, confidentiality of student records, student rights in the classroom, grounds of disciplinary action, academic integrity, leave-of-absence policy, use of buildings and facilities, maintenance of public order, sexual misconduct and harassment and other matters of importance.

8. SoA and OGE Support Services - Graduate students receive support services through the School of Architecture administrative offices and also through the Institute's Office of Graduate Education (OGE) (see http://gradoffice.rpi.edu/setup.do), which offers administrative, academic, and curriculum guidance. OGE provides confidential academic and personal counseling, problem resolution services, academic orientation, training for teaching assistants, international student services, professional development and other services.

Architect Licensing Advisor
The school's Architect Licensing Advisor (ALA) is Mark Mistur, AIA. In support of this activity and staying current with NCARB's ever-changing rules, he attends the annual Licensing Advisor Summit (ALAS – formerly the IDP conference). He is also a member of the AIA Continuing Education Committee at the national level and a licensed Architect in the State of New York. He makes presentations to and regularly communicates with students in the professional programs about the fundamentals of IDP as well as changes in the program and internships, and he mentors students with respect to internships.

I.2.2 Physical Resources

1. Facilities Overview - The Greene Building, home of the School of Architecture, contains all the design studio spaces, seminar and lecture rooms, Dean's conference room, faculty and administrative offices, public pin-up spaces including the main Greene Gallery, computer lab, fabrication lab, Ph.D. spaces and research labs (providing spaces for the architectural acoustics department as well as CASE), Publications production and archive offices, a gallery and black-box room for showing and reviewing students' work, seminars and lectures and the school's very own architecture branch library.

The Dean's Conference Room was recently upgraded and is used occasionally for classes requiring advanced technology. A recently purchased mobile "touch screen smart board" is used throughout the building, as needed, to connect students in the Greene Building with students, professionals, and others at remote locations. Named after Benjamin Franklin Greene, the Institute's second director and 19th century advocate for Rensselaer to create North America's first Architecture program, the building was constructed in 1930 for the purpose of housing an architecture department (later school).

Architecture has since expanded to and beyond the confines of Greene's 43,400 sf. (net assignable space) to include the scheduled use of classroom spaces on the core campus, a facility housing the Lighting Research Center in downtown Troy, an education and research center facility [CASE] embedded in the offices of SOM in New York City, and studio and classroom spaces periodically used in Italy, India and China. (see below)

2. Faculty Space Allocation - The program provides studios, classrooms and seminar spaces for the role of teaching. To fulfill their role in scholarship, service and advising, full-time faculty are provided an office within the Greene building. Assistant, Associate and Full Professors are assigned a private office. Lectures and Professors of Practice share an office, as do part time faculty who do not have scholarship,

service or advising expectations.

3. Additional Space Requirements - With the expansion of student enrollment in the professional programs, the creation of the new post-professional Geofutures program, the allocation of space for CASE's upstate research, the school will need to acquire additional space cross-campus beyond the Greene building to facilitate this added student population.

The School's short-term solution has been to keep core facilities of administration, faculty offices, exhibition space, project review space, seminar rooms, studios and workshop(s) together. To do so, several Greene classrooms have been converted to studio space, with an increasing and effective reliance on scheduling Institute multimedia and laptop classrooms and lecture halls (out of Greene) scheduled according to the course delivery format.

3. Off-Campus Facilities - The LRC is located on the 3rd and 4th floors of the historic Gurley building in downtown Troy, just a short walk from campus. In addition to housing the lighting education and research programs and its offices, classrooms and labs, it is also location to the telepresence and Virtual Acoustics Environmental Lab. Our most recent expansion is to the 24th floor of 14 Wall Street in NYC, at the location of Skidmore Owings Merrill (SOM) where 1,460 sf. of space are dedicated to the Built Ecologies education and research program and CASE for as many as 22 students, including 12 B. Arch or M. Arch students, per semester.

4. Study Abroad Program Facilities – The school has arrangements to use studio and classroom space and infrastructure at each of its international programs: in the University of Arkansas Rome Center each Fall semester; in India at the Center for Environmental Planning and Design (CEPT) in Ahmadabad (alternate Spring semesters); and at Tongji University in Shanghai, where the university provides a studio, classroom space and infrastructure (on a bi-yearly schedule in the spring).

5. Facility Overview - In 1998-9 the Greene Building was made accessible with the addition of an accessible connection to grade and an elevator linking the principal floors. A small mezzanine and split-level basement area beneath it cannot practically be made accessible and are used for faculty offices. These comprise a minority of the overall office inventory in Greene, the majority of which are accessible. Faculty assigned to those offices can meet with students in other locations and should accessibility be an issue for a faculty member, office assignments can be managed.

Greene Building Index of Floor Plans (http://www.arch.rpi.edu/naab/22-FloorPlansForGreeneBuilding.pdf).

- Greene Building (Troy Campus)
  - Basement
  - Mezzanine
  - Level One
  - Level Two
  - Level Three
  - Level Four
- Gurley Building (LRC)
  - Level Two
- 14 Wall Street (CASE @ SOM)
  - Level 24
- Rome Center
  - Empire Wing Level 1
  - Gabriella Wing Ground Level

Greene Building Facilities

1	Seminar rooms	561 sf.
2	Lecture Rooms [1,2]	2,961 sf.
10	Studios [3]	15,050 sf.
16	Faculty Offices [4]	3,367 sf. (74 to 484 sf. each)
9	Staff Offices	1,715 sf.
3	Project review/exhibition spaces	3,737 sf.
1	Architecture Library	4,166 sf.
1	Computer Facility	1,318 sf.
1	Workshop	4,166 sf.
4	Research Areas	1,580 sf.

Seminar room(s) (GR204) - Seminar rooms include large tables and chairs and are used for small classes based on discussion and presentation format. There is currently one schedulable room (GR204) that is furnished to serve this purpose for as many as 18 students. Projection setup and teardown is required. To supplement the small inventory of spaces vs. seminar space needs the Dean's Conference Room GR117 may be scheduled for individual meetings but cannot block regular time slots. Likewise, pin-up spaces (GR101) and the Gallery (GR201) and exhibition space GR201 can be signed out but not scheduled and do not have tables or projection.

Lecture Rooms (GR207,GR120) - Lecture Rooms include the Gallery that is used for studio presentations, large meetings and presentations. Though its acoustics can be challenging, particularly for simultaneous reviews and large meetings a linear focused sound system assists for podium presentations. Greene 120 is a registrar classroom scheduled by the registrar however Architecture is typically able to block it for substantial periods. Though its tablet armchairs are restrictive, dual project screens make it the best venue for presentations to groups between (20) and (50).

Studios (GR402, GR403, GR305, GR301, GR206, GR208, GR118/119, GR12, GR02) - In addition to the relatively expansive 4th floor studios, we have a north lighted third floor studio (GR305 that is typically home to the IDD studio, a relatively large studio on the second floor and a number of smaller studio rooms that were previously classrooms (GR206, GR208, GR012, GR002). GR301, which was previously a student run café/lounge has also been converted into a small studio space.

Project Review Spaces (GR101, GR207, GR401) - The School shares three dedicated review spaces including the 2050sf Gallery space for large reviews, GR401 (when it does not have to be dedicated as studio space - varies semester by semester) and GR101, a small pin up room. The exhibition space (GR201) also doubles as a pin up space when not in use for exhibitions.

Exhibition Space (GR201) - A 510sf exhibition space, "The Fishbowl" that can double as a small review space, was recently created.

The Architecture Library (GR306-309) - The Architecture library is a 4,150 sf. space including book stacks containing the Institute's Art and Architecture collection, periodicals relating to art and

[1] The Gallery is used both as a lecture space and as a Project Review / Exhibition Space.
[2] Additional Institute lecture rooms and multimedia-equipped laptop classrooms are scheduled for Architecture each semester.
[3] Fall semesters include a studio in Rome, spring semesters include a studio space in either China or India.
[4] An office space is assigned to each full-time faculty member.

architecture, study tables and a large library table meeting area. It is home to a visual resources slide library, large format (11x17) scanning, printing and copying equipment available to students and casual seating areas.

The Digital Futures Lab (GR210) - The Digital Futures Lab is a 1,300 sf. classroom lab with 36 high-end desktop computers, each with dual monitors, and four built in HD projectors. The room can be split visually by dropping the center screens. This allows it to operate as a single large space or simultaneously as a classroom on one side and workspace on the other.

The Fabrication Lab (GR014, GR016, GR017, GR019, GR021, GR022) - The Fabrications Lab is 4,150 sf. including a 380-square-foot ceramics laboratory; a 440-square-foot laser / 3D printing suite with two laser cutters and a 3D printer; and a 430-square-foot milling suite with a 4'x8' bed, 3-axis CNC milling machine. A general shop / machine room is equipped with traditional hand and power tools and an 840-square-foot class / benchroom space that accommodates shop-based classes and project assembly work. This room also contains a structural testing machine with a capacity of 100Kn. 2014 saw the addition of a spray booth at the East end of the building. It is fully automated and exhausts through a carbon filter. Access to the shop is dependent upon passing a Learning Management System Safety course. The LMS also offers courses on 3D printing, spray painting and 3-axis milling templates.

Faculty Offices - Faculty offices are distributed throughout the building in the basement, mezzanine, first, second and third floors. Tenure Track and tenured faculty have a private office for teaching preparation, scholarship and advising. Lecturers and Professors of Practice share a large office (GR304) and Part-time adjuncts share an office (GR102)

Research Spaces (GR001, GR003, GR010, GR0111) - Research Spaces are in the Basement and dedicated to the Architectural Acoustics Program and to CASE. CASE also shares research specific spaces in other departments and buildings on campus and at the primary CASE location at 14 Wall Street in NYC.

Dean's Office / School Administration Suite (GR115-117) - Located on the first floor this 1,700sf space is home to the Deans office and conference room, Executive Assistant, Business Manager, Business Administrator and Business Coordinator.

Student Services / Graduate Suite (GR103-106) - This 725sf suite includes offices for the undergraduate Student Services Administrator, Graduate Program Administrator and Graduate Program Director, as well as a lounge shared by faculty and students.

Publications Office (GR401A) - In recent years the school created a publication office that is assigned to a renovated air-conditioned fourth floor space near archiving. (replaced the prior archiving space)

Archiving (GR403A) - In recent years the school carved this 500sf space from the studio on the fourth floor for archiving

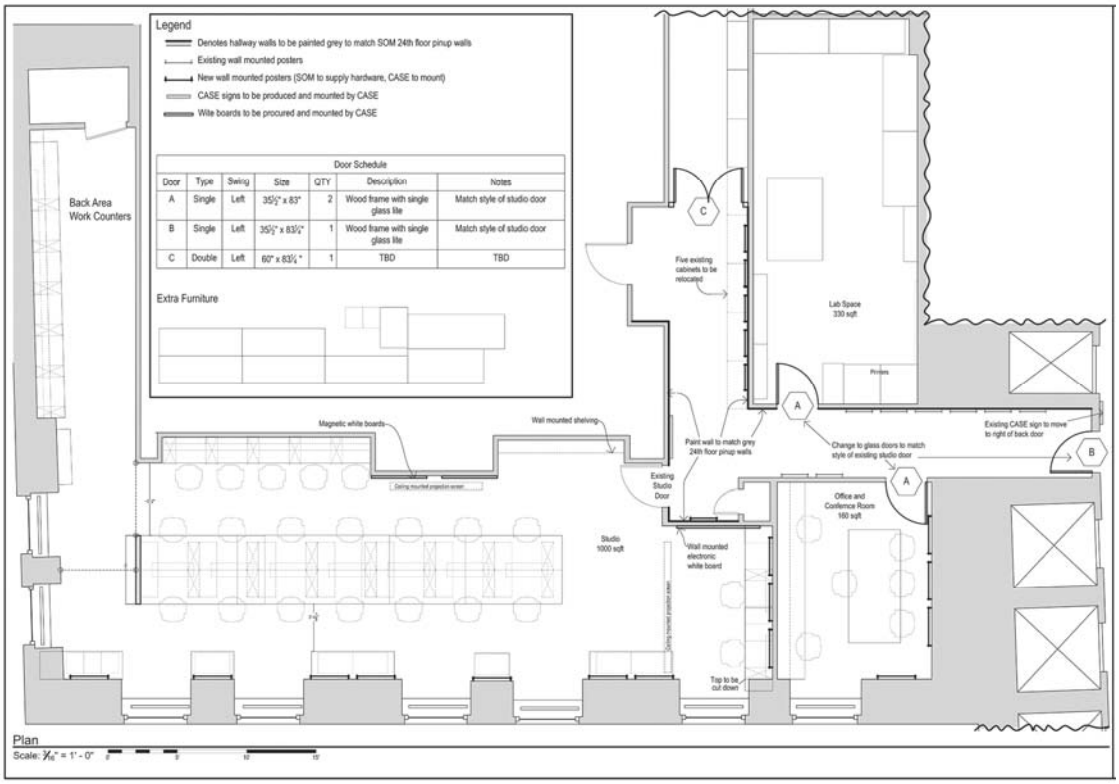
Spray Booth Room (GR007) - A new 125sf spray booth room has been created on the basement level for students' use.

Off-Campus Facilities

1. **The Center for Architecture Science and Ecology, 14 Wall Street, New York, NY** - The Center for Architecture Science and Ecology (CASE) is co-located within multiple labs and offices on the main campus, and is co-located within a facility in New York City at 14 Wall Street on the

24th floor. The NYC facility is accessed off the main lobby of Skidmore Owings and Merrill (SOM) and includes an independent area including a secure office, a lab space, and a studio for exclusive use of the Center. The faculty share an office and conference space and also have a workspace at the School of Architecture at the main campus in Troy, in addition to several dedicated lab spaces in the schools of Engineering and Science on the main campus. The CASE Director has an office space on the main campus within the context of the Center for Materials, Devices and Integrated Systems.

The lab space in NYC is used for the development of prototypes. The studio is set up with individual workspaces with workstations for graduate students, staff and visiting faculty and is equipped with projection for teaching and presentations. Students and research staff have access to SOM's printing infrastructure and use of their model shop facility as well as the SOM conference rooms which are equipped with projection and are available for meetings and classes on a sign-up basis. The studio space typically integrates (10-12) Masters and Ph.D. students with 10-12 professional program students each semester. Each student receives a desk, chair and desktop computer with dual monitors.



CASE Facility_ 14 Wall Street – Door 8 Leads to SOM Lobby

2. The Lighting Research Center (LRC) - The Lighting Research Center has 30,000 sf. of research labs, offices and educational space located on the second and third floors of the Gurley Building in downtown Troy. B. Arch students may participate in elective courses associated with a lighting minor, but not as part of courses where NAAB student performance criteria are being met.

3. The Rome Center, Rome Italy - While this semester is key to developing global perspective and some of the program outcomes of the school it is not required or associated with any of the NAAB student performance criteria. The Rensselaer Polytechnic Institute Italian Studies program is hosted by the University of Arkansas Rome Center (UARC), located in the Palazzo Taverna (Via di Monte Giordano 36 00186), one of the oldest palaces in the center of Rome. The building today houses many different activities, from private residences, to banquet halls, diplomatic residences and artist studios. The UARC is housed in the Empire and Gabrielli wings of the Palazzo where the historic headquarters of the INARCH (Istituto Nazionale di Architettura) was located for about thirty years.

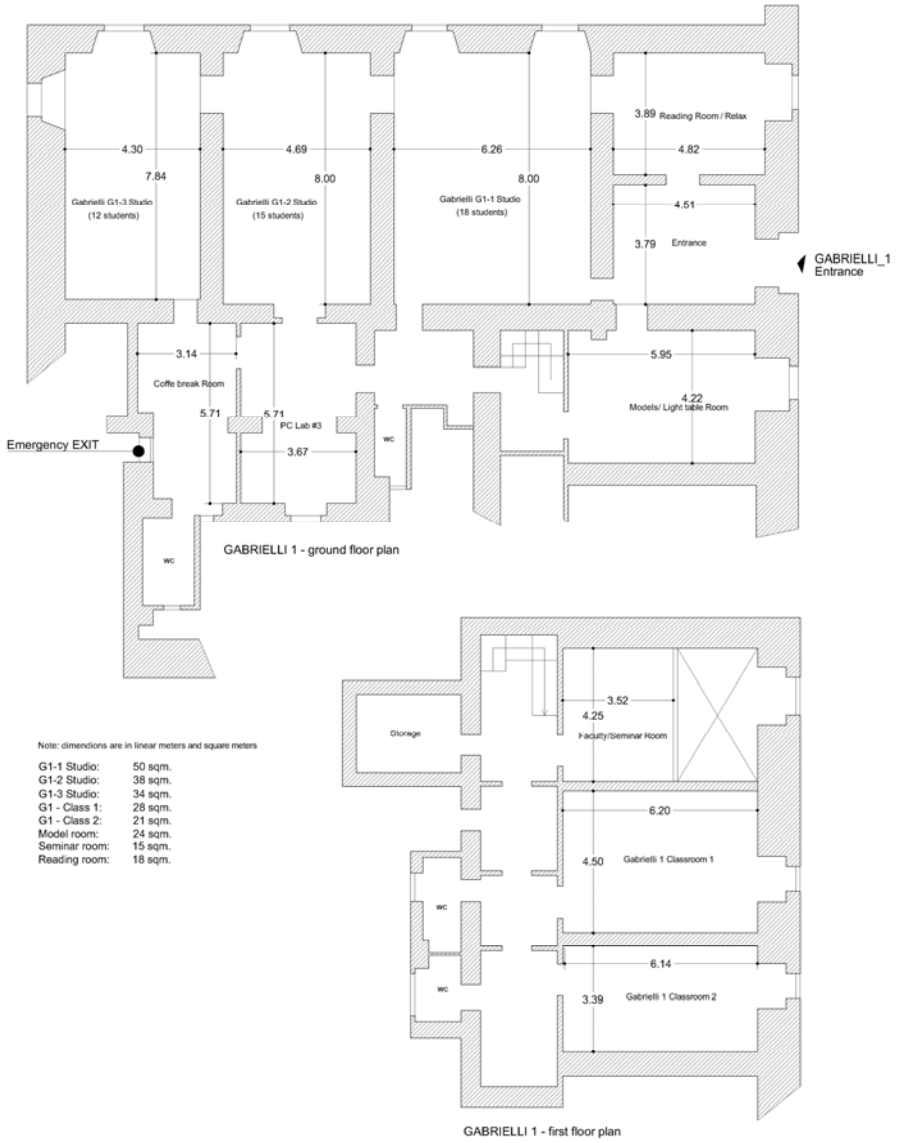
The spacious studios used by several programs including our own, are housed within the 16th century wing of the palazzo compound and include design and humanities studios, classrooms, AV rooms, a library, faculty and staff offices as well as computer labs. It is also where the main offices are located. The computer labs operate on a Windows network with PCs and a wireless network. An internet connection through an HDSL/wi-fi line offers access to the web. The lab is equipped with laser printers, 2 plotters and scanners (A3 and A4 and one wide format) and a laser cutter.

- The **Upper Studio** (Empire Wing) located on the first floor is comprised of the main offices (including the Student Services Coordinator), the Library, the "Yellow Room", 2 classrooms ("Fresco 1" and "Fresco 2") and the beautiful Main Hall for lectures and reviews. This part of the UARC is dedicated to courses, projections and conferences.
- The **Gabrielli 1** studio, on the ground floor of Palazzo Taverna, is used mostly for practical activities. It is set to allow students to work on their projects and includes printers, plotters, and cutting areas. The studio comprehends many meeting rooms, three large studios, toilets and a relaxing area.
- The **Gabrielli 2** studio, is also located on the ground floor of Palazzo Taverna; it has two large studios for up to 30 students, one computer lab and the printer/plotter and laser cutting suite.

Fresco 1 classroom

Yellow Room studio

Empire Wing - Level One



Gabriella Wing – Ground Level

4. China and India Study Abroad Programs - While this semester abroad is key to developing global perspective and some of the program outcomes of the school, it is not required or associated with any of the NAAB student performance criteria. Both of these semester-long International programs are associated with well renowned highly ranked schools of Architecture in University abroad and provide as part of their agreement with Rensselaer, studio and classroom spaces and infrastructure that are equivalent to and shared with their own students. The assigned spaces change annually but include studio furnishings and access to infrastructure. At the Center for Environmental Planning and Technology (CEPT) In Ahmedabad RPI is provided with studio space and access to various facilities at CEPT. These include the library, fabrication shop facilities, printing and copying facilities, and virtually every other amenity and privilege offered to CEPT's matriculating students. Our students also have access to CEPT's Wi-Fi system at no cost. CEPT is open to all students 24/7.

CEPT Studio – India

CEPT Studio - India

At Tongji University in Shanghai, our hosts provide mid-size classroom/studios that are accessible 9-5 pm with wireless LAN and access to fabrication labs as well as access to review space.

Tongji University – Studio

Tongji University - Classroom

2. Rensselaer's Hardware and Software Infrastructure - Rensselaer is a leader in the use of computing to support education and research. The Division of the Chief Information Officer [DotCIO] provides information services, technology, and support for this effort. DotCIO is committed to providing quality information solutions, bringing world-class services and support to the Rensselaer campus. The many accomplishments of the DotCIO staff include one of the nation's first laptop programs (requiring all

entering freshmen to have a laptop computer for use both in and out of the classroom), support of interactive learning (including Learning Management Systems [LMS] courses), state-of-the-art electronic information access, search and retrieval services by the Libraries, and on-line student and administrative services. At Rensselaer an integrated information environment is integral to teaching, learning, and research. Rensselaer employs a first-rate information culture and a robust information infrastructure. We must sustain this advantage, valuing information literacy at every level and implementing new methods for scholarly communication and electronic interactions.

3. Services of DotCIO include:

- A/V Media Services
- Accounts
- Administrative Applications
- Cable TV
- Campus Computer Store
- Data Warehouse
- Email (including Webmail)
- Help Desks, Consulting
- Libraries, Research
- Machining / Manufacturing Services
- Mobile Computing (laptop program)
- Networking
- Printing
- Repair & Maintenance Services
- RPILMS (WebCT)
- Student Information System
- Telephones / Telecommunications
- Web Publishing

4. Rensselaer's Mobile Computing Program - For over 15 years, Rensselaer's Mobile Computing Program has offered students a laptop package that includes a powerful laptop computer, software applications and accessories at a competitive price. The laptop computer maximizes CPU power and discrete graphics capabilities in portable form factor. Students are not required to participate in the program, but historically, over 65% of students do.
The Fall 2015 laptop package is built around a 15.6" Lenovo ThinkPad W541. The main hardware features of the ThinkPad W541 are:

- Intel Core i7-4710MQ processor, 6MB cache
- 16 GB PC3-12800 RAM (8GB + 8GB)
- 15.6" FHD 1920 x 1080 LED backlit display)
- 256GB solid-state ATA3 OPAL 2.0 hard drive
- NVIDIA Quadro K2100M graphics (2GB)
  (Switchable to Intel Graphics media Accelerator 4500 MHD)
- Ports include two USB 3.0, two USB 2.0, one VGA, one 4-in-1 multiread card slot
- 36-month manufacturer's warranty and ThinkPad Protection

The software packages that are preinstalled on the ThinkPad W541 include:

- Microsoft Windows 8.1 Enterprise (64-bit)
- Microsoft Office Professional 2013 (32-bit; 64-bit available for user installation)
- Microsoft System Center Endpoint Protection
- Maplesoft Maple symbolic algebra program (64-bit)
- MathWorks MATLAB (64-bit)

- Siemens NX CAD package (64-bit)
- National Instruments LabVIEW (local installer)

In addition to the standard Rensselaer software suite, architecture students have:

- Adobe Creative Cloud [2D Image and Graphic Design]
  Students subscribe and load it directly on their personal laptop
- Rhino 5.0 – Modeling – 13 30-seat Educational Lab Kits, for a total of 390 seats
  240 seats are in our floating license server
  60 seats (two Lab Kits) are used for fixed-license installations in Rome and NYC
- Grasshopper [generative modeling plug-in for Rhino] – unlimited licenses
- V-Ray [photorealistic rendering plug-in for Rhino] – 30 floating licenses
  Distributed through a license server, and can be used from off-campus via VPN
- Autocad Architecture 2016 [3D building design]
  Educational license are available to students using their RPI student credentials
- Autodesk Education Master Suite [125 Floating Licenses] includes:
  - Revit
  - Robot
  - Simulation CFD Design Study Environment
  - Sketchbook Designer
- Autodesk Entertainment Creation [125 Floating Licences] – includes:
  - Maya
  - 3ds Max
  - Softimage
- DOE 2.1E [building energy simulator] – unlimited licenses
- Ecotect 5.5.0 [environmental analysis tool] – 10 floating licenses
  Distributed through a license server, and can be used from off-campus via VPN
- WeatherTool 2.0 [weather data tool] – 10 floating licenses.
  Distributed through a license server, and can be used from off-campus via VPN
- RISA-3D 9.0 [Structural Analysis Tool] – 30 floating licenses
  Distributed through a license server, and can be used from off-campus via VPN
- SolidWorks 2015 – unlimited floating licenses. Administered by the campus.
  Distributed through a license server and can be used from off-campus via VPN
- LightTools 8.3.0 [Light Analysis and Design Tool] – 10 floating licenses
  Distributed through a license server, and can only be used on-campus
- Cisco VPN Client [remote connectivity] – unlimited client licenses
  Administered by campus
- Adobe Connect Enterprise [video conferencing and remote collaboration]
  Unlimited licenses – administered by campus.

The students use their laptops in laptop classrooms (over 25), the library, and other locations across the campus. Each laptop classroom includes a power outlet and a network port for each seat. Laptop classrooms range in size from 25 seats to over 70 seats. The library and other locations have power outlets and network ports plus wireless networking to provide complete coverage.

Supplementing the students' laptops are public and departmental desktop computing facilities. These facilities include computer classrooms and computers located in public areas. Over 400 desktop computers (80% Windows, 14% Linus/Unix, and 6% Mac) are available to students in over 25 locations. One PC classroom has been especially configured to support Architecture students and other power users. This classroom include high-end desktops running 64-bit applications (as well as 32-bit) on PCs with 16 GB RAM and high-end graphics under 64-bit Windows 8.

5. Campus Network - The campus network backbone is redundant 10G and 1G Ethernet running over fiber. The residence hall rooms have a network port for each resident. There are over 8,000 network

ports on campus plus over 90% of campus buildings have wireless coverage including residence halls. The campus has a 200 Mbps connection to Internet 2 and a 300 Mbps connection to Internet 1 that can be bumped up to 800 Mbps when needed. Rensselaer leases dark fiber to redundantly connect the main campus to the Computational Center for Nanotechnology Innovations as well as Internet 1 and Internet 2 facilities in Albany, New York. This dark fiber is terminated on our DWDM gear which allows Rensselaer to scale to multiple 10G connections as needed.

6. SoA Digital Futures Lab - In 2010, the Institute supported the development of the Digital Futures Lab in the Greene Building, featuring 32 high-end Alienware ALX51 design workstations and four video projectors. The lab serves as a teaching lab and high-powered resource for high-end analysis, visualization and rendering, especially for upper level students whose design studio models are too heavy (complex) for laptops.

7. SoA Computational Hardware - The following computational hardware and accessories are available in Greene for architecture student use:

- Dell Optiplex 760 (Qty. 4) – Acoustics Lab
- Dell Optiplex 240 (Qty. 4) – Fabrication Lab
- Dell Optiplex 270 – Studio
- Lenovo G530 (Qty. 2) – Presentation Laptop
- EPSON and Acer Video Projectors
- 19" – 21" CRT Monitors (Qty. 50) – Secondary monitors for studio and DD students
- HP DesignJet 750C Plotter – Studio 305
- Xerox C3545 Network Printer
  Library 11x17 Printer

8. SoA Online Storage – In addition to 25 MB of file storage in their RCS directories, students have FTP access to a file server with a total capacity of 750GB.

9. SoA Networking – All classrooms and studios are equipped with 100-BaseT Ethernet connections. In addition, wireless internet connectivity is available throughout the entire Greene Building, using 802.1x GTC-PEAP security. Students can also use Cisco VPN Client software to remotely access campus computing resource from off-campus residences or anywhere with Internet access.

10. SoA Printing - Students and faculty can also print and plot to over 75 public printers around campus, including three HP DesignJet 1055C high-resolution color plotters. In Greene, architecture students and faculty also have access to the Digital Fabrications Lab's peripherals and tools, including:

- 2 laser cutters – one small format Universal and one Zytec 48" x 48" large format bed
- 4 x 8 foot bed 3-axis router - milling machine
- Z-Corp – 3D Printing
- Drying Oven
- 30 Ton Ceramic Press
- Large Kiln
- Test Kiln
- HotWire Cutter
- Clay Mixer/ Pugmill
- Structures Testing Machine
- Planer
- Joiner
- Table Saw
- Panel Saw
- Mitre Saw
- Band Saw (2)

- Drill Press (4)
- Scroll Saw
- Lathe
- Vacuum Former

11. SoA Technical Support - Technical support is available to all students at the RPI Helpdesk by phone or in person seven days per week. In house support from Architecture's Director of Information Technology is also available to students, faculty and staff four hours per business day, to handle issues specifically related to Architecture hardware and software. Service includes PC and Mac troubleshooting, virus removals, software update installation, software license management, hard drive data recovery, operating system upgrades and installations. For faculty the Director of I.T. also assists with hardware upgrades, technology planning consulting, and remote access setup and is responsible for the Greene Building IT infrastructure including the servers, projectors, plotters and printers associated with the Architecture specific hardware and software applications and their licensing.

Computer hardware repairs can be performed on campus by RPI's computer repair center, certified for warranty repairs by Dell and Lenovo and Apple. For those participating in the laptop program loaner computers are available during repair periods.

12. SoA Computing Resources for Faculty

Hardware - Each full-time tenured or tenure-track member is provided a laptop for coursework and scholarship. Depending on needs and user preference, laptops will currently either be a Lenovo W541 (or equivalent Windows-based laptop), or a MacBookPro (or equivalent Macintosh). Faculty have access to the Rensselaer network and infrastructure and peripheral devices including the fabrication lab, 2 and 3D printing.

Software - Faculty have access to the same software that is available to students (see above). The following software are also provided to faculty:

- Microsoft Windows Enterprise 7, 8, 8.1, 10
- Microsoft Office Professional 2013 (for Windows)
- Microsoft Office Professional 2011 (for Macintosh)
- Adobe Creative Suite CS6 Design Premium

Online Storage

- In addition to 50MB of file storage in their RCS directories, faculty members have private accounts on an FTP file server with a total capacity of 750GB.

Technical Support - Faculty also have access to expert support from Architecture's Director of I.T. four hours per business day.

13. Center for Architecture Science and Ecology Computing Infrastructure - In addition to bringing their laptops and having remote access to Rensselaer software as described above, each student is provided with a dual-monitor desktop.

Each station is equipped with the following software:

Adobe CS63 (SOM license)
AutoCAD (SOM license)
EcoTect
Grasshopper
Microsoft Office (SOM license)

Rhino
Weather Tool

Software available for installation on the workstation through RPI includes:
Abaqus
Fluent
LabView
MapInfo
Maple
MasterCAM
Matlab
MSC. Nastran
MSC.Adams
MSC.Patran
Solidworks

All stations are networked to printing including:
11x17 printers (2)
Large-Scale Plotting

Additionally, students will have access to;
3D Printer
3' x 4' Laser Cutter

Changes to the Physical Resources, either Under Construction or Proposed.

No significant changes are underway or planned at this time.

Identification of any Significant Problem that Impacts the Operation or Services

1. Studio and Pin-Up Spaces - Depending on the number of students at CASE and/or abroad, the school has had to convert pinup space to studio space. As the number of students in studio-based programs increase, we will need additional studio and pinup spaces. The Division of Administration is mindful of the limited capacity of the Greene building in relation to the school's long-term commitment to increasing student enrollment, and has assured the SoA leadership that they will provide the necessary support required to accommodate for this new growth.

2. Studio and Classroom Furnishings – The school is committed to provide state-of-the-art work stations for all of our students in relation to the tools used in contemporary design settings (which includes: a large monitor, tabletop, storage unit and chair). Funds required to upgrade the current studio and classroom furnishings in order to achieve this goal are acquired through yearly a Capital Funding request.

3. Digital Futures Lab Technology Refresh - The challenge of refreshing high-end technology in the Digital Futures Lab every 4-5 years is critical to its mission of extending teaching and the capacity to design using advanced visualization and computational analysis in the design workflow. Given that the lab is in its fifth year, updated hardware is now of strategic importance. Funds required to upgrade the digital futures lab in order to achieve this goal are acquired through a Capital Funding request

4. Create an Environment and Energy Lab - Given a rededication to the B.S in Building Science program, increased attention to CASE classes upstate and a renewed focus on Energy and Environment

in the B. Arch and M. Arch programs demonstrated by two recent full time hires, the School will make a request through the Capital funding process to secure support for a future research lab.

5. Leveraging Laptop Computing - Laptops provide ubiquitous 24/7 access to computing and have been enormously enabling to students, the curriculum and program; however, the increasing demands on processing and for larger and dual monitors to perform upper-level integrated design work points to the need for increased student access to high-end desktop labs and software as well as to the already robust computing infrastructure and peripherals.

The school is currently examining strategies to 1) Incorporate a requirement for dual monitors in studio – either provided by the school or by the student. 2) Require architecture students to upgrade their computer before entering their 4th year and 3) Employ distributed computing to a greater degree in association with laptops in the form of remote batch / cloud rendering by remote processors etc.

6. Shop Expansion - Given the mission of the school, *"to prepare students for leadership in 21st century practice …"* we must equip them in the best use of the most advanced technologies and techniques relating to the integration of design and making that is increasingly pervasive as a way of thinking and doing. To do so, requires access not only to a wide range of tools and equipment (large format 3D printers, robotic technology, and metal tube bending machines), but also the space and capacity to handle the educational workflow and demand. Additionally, increased staff will be required to oversee the increasing technological demands of the shop. In support of this strategic goal, the school will apply for Capital Funding.

7. Distance Enabling Learning Formats - To make opportunity for second year M.Arch students to participate in the Built Ecologies program at CASE in New York City the ARCH 5150 Structures 2 course is synchronously taught at the Troy and CASE location. Using Rensselaer's DCC337 facility and tech support to establish a two-way audio/video link, downstate students are able to participate in real time. Multiple cameras focus on the professor, students, the overhead and/or work he wishes to show. CASE based students can ask question through a student helper present in the room.

DCC337 – Real-time, Two-Way Connect

DCC337 – Professor Station

I.2.3 **Financial Resources**

Description of the Institutional Process for Allocating Financial Resources

1. Yearly Performance and Budget Plans - Since 2001, the institute has been working with a budget process that is inextricably linked to annual Portfolio Performance Planning. This process represents the culmination of an integrated planning approach designed to link strategies with action and to measure progress toward achieving the objectives outlined in the strategic plan. Each fall, portfolio owners, including each of the five academic deans, are tasked with developing Performance Plans. The Dean of the School of Architecture first develops a set of Key Initiatives specific to the SoA that are also in

alignment with the institute's Rensselaer Plan 2024. The next step includes a detailed Performance Plan report that addresses how the School's Key Initiatives link to the Institute-Wide Highest Priorities. Following presentations to the Dean's Council and President's Cabinet, a Budget Plan is created corresponding to each of the initiatives in the Performance Plan for the upcoming fiscal year. This budget plan is done by incremental budgeting; the Dean either starts with the previous year's budget and then requests additional funding for specific initiatives or is asked to submit a revised budget based upon a reduction mandated by the Finance department. This plan is then assessed by Provost, the Chief Financial officer and the President in relation to the budget plans of all the portfolios. Final approval is issued by the Board of Trustees.

2. School Budget - Within the approved annual budget are two categories; salary and non-salary (Education & General, E&G). The salary portion, covering all SoA full-time faculty and staff (and benefits), represents approximately 92% of the school's budget and is non-discretionary. An annual merit increase percentage pool is typically provided to the Dean for distribution based on individual performance linked to annual faculty and staff evaluations. The non-salary portion, covering costs ranging from part-time adjunct hires to travel, hardware, software and office supplies etc., is discretionary and allocated based on approved budget line items by the Dean and Business Manager of the School.

3. GAP Funding – GAP funding is typically provided to portfolios throughout the institute, in order to provide support for replacement hires, due to sabbaticals, leaves of absences, open lines and departures. Annually the School assigns teaching responsibilities and develops faculty workloads to determine "the Gap" between the budget and the instructional needs. This fiscal data, in the form of a request for Gap Funding, together with a justification, is submitted as a request to the Office of the Provost for approval. The institute acknowledges that the SoA does not have sufficient permanent faculty lines in their yearly budget and is in the process of making as many GAP funded lines permanent in the future.

The line for short-term full-time lecturers and part-time adjuncts to meet the instructional needs of the school's programs is typically insufficient due to sabbaticals, leaves of absence, open lines and departures. Annually the School assigns teaching responsibilities and develops faculty workloads to determine "the Gap" between the budget and the instructional needs. This fiscal data, in the form of a request for Gap Funding, together with a justification, is submitted as a request to the Office of the Provost for approval.

4. Capital Improvement Requests - In addition, there is a process by which Schools and other portfolios make proposals and applications for capital improvements from a dedicated institutional pool. Capital improvement awards, tied to key initiatives, school's highest priorities and institute-wide highest priorities are reviewed by the Administration and allocated on a highest priority and impact basis.

5. Faculty Performance Compensation - Each April, Human Resources issues the faculty merit program guidelines. The merit guidelines are for all tenured and tenure-track faculty, professors of practice and lecturers. The guidelines include a range that merit awards must adhere to. Merit awards are based on overall academic performance to include, but not limited to, teaching, research, scholarship and service to the community.

6. Faculty Equity Adjustments - In addition to faculty merit, the Provost accepts recommendations for equity adjustments. This process allows the school to address areas where faculty salaries have created an inequity within the same-ranked faculty.

7. New FTT Hiring Lines - For new hires of tenure track faculty, faculty positions are requested through a faculty-hiring plan that is tied to performance planning and submitted to the Provost. The plan includes salary and startup funding as well as justification of how that position is critical to meet both the School and the Rensselaer Plan goals.

8. Capital Project Funding - Capital Project Funding procedures were put in place in 2001 as part of the Performance Planning process, which includes an assessment of priority needs for each portfolio/school and/or division. These expenditures can be facilities-related and include leasing of real estate, deferred maintenance and/or renewal needs, or they may be related to other initiatives within the portfolio that require capital funding. In all instances, requests must be considered high priorities and consistent with the Portfolio Performance Plan. Since the last accreditation, Architecture garnered $748,012 in support to renovate a portion of the building to establish a new Digital Futures Lab.

	Proj #	Project_Name	Project Cost
FY10	10044	Greene Building Digital Futures Lab	$748,071
FY10	10025	Greene 207 – Replace Homasote in Gallery	$13,700
FY11	11014	Greene 201 – New Lighting	$5,988
FY11	11002	Greene 401A – Publications Office Refurbishment	$25,795
FY11	11003	Greene 403A – Construct Wall for Archival Room	$7,398
FY12	12083	New Furniture for Faculty Offices	$14,839
FY15	15028	Architecture Spray Booth – Room Repurposing	$25,086
FY15	15025	GR M112 (Office upgrade)	$6,507
FY15	15026	GR M108 (Office upgrade)	$2,000
FY15	13098	GR 117 Dean's Conference Room renovations	$14,884

Description of the Expense Categories Over Which the Program has Either Control or Influence

1. Education and General (E&G) Funding - This is based on undergraduate and graduate enrollment, is provided by the Institute, and distributed annually through the budget process that is approved by the Board of Trustees. The school's E&G funding has seen a modest increase in the last five years (primarily due to faculty merit increases); the following table shows historical E&G data for the school. There is a reduction in the FY16 budget that has been accommodated through adjustments in special programs and reallocation to non-E&G funding. Our overall budget has increased due to faculty and staff merit.

2. Institute Support for Education and General Expenses

Fiscal Year	Budget	Expensed
2010	$3,161,312	$3,227,933
2011	$3,711,522	$3,726,239
2012	$3,912,770	$3,943,250

2013	$4,201,306	$4,201,024
2014	$4,211,167	$4,182,767
2015	$4,117,741	$4,151,750
2016	$4,206,293	

3. Revenue Categories Over Which the Program has Control or Influence - The School, through the Dean and Business Manager, has control or influence over the non-salary E&G portion of the budget, based on a number of preapproved budget line items including:

Facilities Support
Graduate Research Support
Equipment and Office Supplies
Discretionary funds
Faculty Expenses
Lectures
Publications Office
Student Workers
Student Recruiting

These represent approximately 8% of the School's budget, and in a typical year are supplemented with between $200,000 and $500,000 of Gap Funding specifically for instructional hires that are controlled by the Dean for semester and year-long part-time adjunct hires, and by the Dean (with endorsement by the tenure-track and tenured faculty of the School of Architecture) for full-time one- to three-year lecturer and professor of practice (non-tenure track) hires.

In addition to faculty and staff merit increases (limited to a % pool provided to the Dean), the non-salary E&G line items and annually awarded Gap Funding, the School has several endowments that generate restricted expendable revenues.

4. Endowments - In total each year, the school receives approximately $200k in restricted endowment income. This funding is used to support international programs, contingent faculty salaries, lecture and exhibit series, travel, academic programs, faculty, and student enrichment, and/or other designated purposes. Interest earned from the following endowment accounts provides the majority of the support.

- Dean's Development Fund generated by interest from Dean's Development Fund Endowment devoted to support alumni development and other special projects - $18,000
- Samuel F. Heffner '56 Fund to support computer facilities and academic program development - $26,000 per year.
- John Huberty '40 Fund to support computer facilities and academic program development - $4,000 per year
- Mabel Marsh Fund to support school lectures, critics, underwriting of student projects, and related extra curricula activities - $47,000 per year

- Lee Harris Pomeroy '54 Fund is used to support innovative teaching that demonstrates the creative use of technology in architecture - $7,000 per year
- James E. Penn Bequest to be spent at the dean of architecture's discretion - $98,000 per year – currently underwater and projected to receive only 20% of annual income ($19,000)
- Leslie Seward VanCampen '36 Fund to support faculty salary for the school's artist in residence - $32,000 per year – currently underwater and projected to receive only 19% of annual income ($6,000)
- S. Edward Jeter '60 Fund for the School of Architecture Fund to support educational programs in the School of Architecture on topics dealing with the practical application of business to architecture and architecture to business - $3,000 per year.

5. **Gift Income** - Gift income varies from year to year. Generally the school receives, on average, $155k in donations for various events, projects and initiatives. The Lighting Research Center receives approximately $1m in gift funding. The Center for Architecture and Ecology in NYC is now an Institute-Wide Center. They continue their agreement with Skidmore, Owings and Merrill (SOM), who gives $175k in funding together with in-kind contributions of just over $2 million annually.

6. **Designated Annual Gifts** - Included in the above gift funding, we receive:

- Bedford Traveling Workshop: $20-$30k yearly for an Interdisciplinary Bedford Traveling Workshop initiative. Each summer, (6) School of Architecture students, (6) School of Engineering students and (3) faculty, embark on a structures traveling workshop to investigate concentrations of best interdisciplinary A/E practices internationally.
- Production Installation Performance (PIP): The Jaffe family provided $60k for the first 3-year PIP installation. Their recent gift in 2015 is $75k for our Production Installation Performance (PIP).
- All-School Lecture Series: The School of Architecture receives $20k-$30k in funding for the lectures held each fall and spring semester. Most lectures are held in the prestigious EMPAC building. The entire campus is invited to a reception prior to the lecture. Lecture guests includes world-renowned architects.

7. Non-Designated Annual Gifts to Architecture - A small amount of gift funding is provided to a "general" gift fund. This amounts to, on average, $1,500-$4,000 over the last four (4) years.

8. Development Information as of Fall 2014

• Total number of school of architecture alumni (Grad and undergrad)	3,079	
• Total number of school of architecture alumni making at least one gift to Rensselaer during the past 10 years	910	34% of total
• Total number of school of architecture alumni donors to Rensselaer whose lifetime giving is $2,500 or more.	357	12% of total
• Raised for school of architecture by the campaign	(896 donors)	$8,861,773

9. Scholarship, Fellowship and Grant Funds Available for Student and Faculty Purposes

- Wilson Graham Memorial Fund endowment for students in financial need, with preference given to married students - $1,000 per year
- George T. Droste, Jr. Memorial prize Fund to provide an award to the student with the highest average grade in the Structures sequence within the School of Architecture - $5,000 per year.
- Jon D. McKee ’49 Award for International Architectural Studies Fund to provide financial support to students to participate in one of the international programs offered by the school of architecture - $3,000 per year.

Scholarships for Undergraduate Students - Most assistance from Rensselaer is based on financial need and determined by the Office of Financial Aid based on the difference between college costs and what student and family can be expected to pay. Rensselaer is committed to making a quality education financially possible for undergraduates and their families. The Institute is equally committed to making a complex process as straightforward as possible. Prospective first-year students as well as upper-class students apply for financial aid by submitting only the Free Application for Federal Student Aid (FAFSA).

To provide access to a quality education for high-quality students, Rensselaer offers substantial financial aid from its own funds. Scholarship grants are awarded after full consideration of the following factors: relative financial need, academic achievement and promise, qualities of character as suggested by recommendations submitted on behalf of the student, evidence of willingness to help oneself by working, and participation in community and school activities. Students do not apply separately for these awards.

Industrial, Foundation, and Endowed Scholarships - Many scholarships are given to Rensselaer by corporations and foundations and through the generosity of alumni and friends. Some of these scholarships are available to first-year students and continue for four years; others are available only in the upper-class years. A list of these scholarships is available through the on-line catalog. http://admissions.rpi.edu/aid/scholarships.html.

The Rensselaer Medal - For more than 90 years, Rensselaer Polytechnic Institute, in conjunction with high schools around the world, has awarded the Rensselaer Medal to promising secondary school students who have distinguished themselves in mathematics and science. The Medal was first presented in 1916 with two purposes: to recognize the outstanding academic achievement of young men and women, and to motivate students toward careers in science, engineering, and technology. This merit scholarship, with a minimum value of $15,000 per year, is guaranteed for four years for each medalist who is accepted and enrolls at Rensselaer. (Five years for the B.Arch program or a Co-Terminal Program.) Since the last accreditation visit the following medals have been awarded to architecture students:

F10 – 9 medals
F11 – 9 medals
F12 – 17 medals
F13 – 11 medals
F14 – 6 medals

Robert S. Brown ’52 Fellows Program - The School of Architecture Robert S. Brown ’52 Fellows Program provides an exciting travel-study opportunity for undergraduate students, graduate students and faculty. The Robert S. Brown '52 Travel Fellowships are awarded each year to faculty and students in the School of Architecture.

Goal of the Student Fellowship: The intent of the Brown Fellows Program is to provide a unique opportunity for students within the Rensselaer architecture program to consider architecture as an international discipline with global reach. Through the generous support of our alum Robert S. Brown, students will be able to experience in person the brilliant legacy and traditions of historical and contemporary architecture from around the world that is integral to a proposed research investigation that supports an academic and career trajectory. Offered as a compliment to their education here in the US, this unique travelling fellowship is also intended to provide a multi-cultural experience, in preparation for assuming a leadership position within the discipline in the years ahead.

Three (3) $5,000 fellowships for travel expenses are awarded annually to students (normally in their penultimate year) based upon competitive submission of a study plan proposal. Recipients of Brown Fellowships are obliged to present a public presentation and provide a final report of the results of their study to the school. (2) Fellowships are awarded to students who propose international travel, while (1) fellowship is awarded to a student who is selected to attend a one-month residency at Le Corbusier's Mill Owner's Building, in Ahmedabad, India.

Goal of the Faculty Fellowship: The intent of the Brown Fellows Program is to provide a unique opportunity for faculty within the Rensselaer School of Architecture to develop their research within the context of a travelling fellowship. Support funding covers international travel, lodging, and food throughout the duration of the on-site research period as well as the means of disseminating that research in an exhibition and/or publication upon their return. The fellowship is intended to reward exemplary scholarship and innovative design within the profession of architecture and assist in enabling new research to enter in to the public realm. It is expected that the outcome first be presented at Rensselaer and further disseminated in a traveling exhibit, lecture, or publication that reaches beyond Rensselaer.

Three (3) faculty fellowships are awarded annually; one in each of the following faculty categories: $12,000 to one (1) tenured faculty, $12,000 to one (1) tenure track faculty, and $7,500 to one (1) contingent faculty.

Selections of both students and faculty are competitive based on awards by a jury consisting of (2) members of the general faculty within the School of Architecture, (1) practicing architect beyond Rensselaer, and a former student Brown Fellow. The names of the finalists are forwarded to the Dean for final selection.

M. Arch Scholarships - Historically M. Arch students were provided merit scholarships that were funded through the school's E&G budget. However, with budget reductions and reorganization the funding for this support was reduced to only support the current students. This greatly impacted attracting new students and in 2008 no new M.Arch students matriculated. To rectify this program and help rebuild the enrollment, the Institute initiated a program of merit scholarships in the Fall of 2009 for exceptional members of each year's entering Master of Architecture class. Awards were made on the basis of GRE scores, GPA's, and a review of the applicants' portfolio. The Institute awarded scholarships allowed for an average discount rate of up to 40% for each semester of the program. The program is six semesters in length. No other institute support is available to M.Arch students as only Ph.D students qualify for teaching or research assistantships (TA or RA).

10. Other Funds Available

Principal Investigator Research Support (PIRS) - The institute returns to faculty principal investigators support that is calculated based on the indirect cost recovery expenditures on sponsored research contracts in the prior fiscal year and is distributed annually. The full year distribution is 3 percent of the indirect cost recovery. Research support funding is for infrastructure and research development support that cannot be funded on grants.

Sponsored Research - Research activity in architecture is a sea change for the School. Within the Performance Plan, the case is made for the need for the Institute to recognize the limitations of the School's budget to support this transition, and help seed the change in areas such as release time, cost sharing and startup packages comparable to science and engineering. Acoustics has seen some recent success with an initial St. Gobain award with additional awards projected. The Center for Architecture Science and Ecology has funding ranging between $500k-$770k in recent fiscal years. The Lighting Research Center, now in its 27th year, averages approximately $4 million dollars in research awards per year.

1. Pending Reductions or Increases in Enrollment and Plans for Addressing These Changes

	Fall 2014	**Fall 2015**
B. Arch	279	262
M. Arch	17	19
M. Arch II (M.S. Arch)[5]	5	8
B.S. Building Science	0	4
CASE (MS and PhD)	12	9
LRC (MS and PhD)	11	14
Acoustics (MS and PhD)	14	13

After several years of steady growth in the B. Arch program, the enrollment in 2015 has decreased. In response, significant efforts in the School of Architecture and admissions to address this challenge are being implemented throughout the fall of 2015. New initiatives include: (1) strengthening the message and outreach solicitation numbers associated with the external consultant firm Fire Engine Red that is working on behalf of the SoA to increase UG enrollment, (2) offering a total of six webinars promoting the B. Arch and B.S programs, (3) email solicitation to guidance counselors, art teachers and technology instructors from over 3,000 high schools (efforts in the SoA independent of the admissions department), (4) increase the solicitation pool currently in the admissions department, (5) the distribution of new digital flyers associated with the summer career discovery program as well as the B. Arch and the B.S program, (6) the distribution throughout the U.S. and abroad of a digital copy of the school's 632 page selected student work book entitled *INFLUX*, (7) expanded outreach efforts in South America for UG and graduate students, (8) increased number of scheduled on-campus visits, (9) the selection of faculty to travel to various high schools in the Northeast as part of a solicitation drive, and (10) the appointment of over

[5] Pending Title Change

twenty-five Student Ambassadors in the SoA to reach out to their former high schools and inform them of Rensselaer's outstanding architecture program.

2. Pending Reductions or Increases in Funding and Plans for Addressing These Changes
For Fiscal Year 2016, the School of Architecture was required to submit a 95% contingency. Decisions regarding future programs were made in order to meet the guidelines for the SoA budget. In order to meet the budget, the Italy Study Abroad Program will be conducted every other fall rather than every fall semester. As a result, students will still have the opportunity to travel to China or India and other study abroad opportunities will be offered. Additionally, the Dean's yearly discretionary funding typically used for student recruitment efforts will now be significantly reduced.

Changes in Funding Models for Faculty Compensation, Instruction, Overhead, or Facilities - There have been no substantial changes since the last accreditation visit.

Planned or in-progress institutional development campaigns

The Dean works closely with Institute Advancement to secure funding for priority areas for the School of Architecture. A matrix outlining a broad range of targeted areas critical to the continued vibrancy of the school is established (i.e. student scholarships, technology platform upgrades, all-school book publication, Bedford Chair summer traveling workshop, student support associated with the study abroad program, all-school lecture series, CASE / Center for Architecture Science and Ecology endowment and naming of the school) and used as a strategic guide for both the Dean and IA officers in the context of scheduling their outreach efforts every academic year. They meet with donors on a consistent basis as well as invite them to visit campus. The Dean's Leadership Advisory Council works with the Dean and School to help solicit funds from external donors.

I.2.4 Informational Resources

Library and Information Resources

1. Institutional Context - As part of the Division of the Chief Information Officer, the Rensselaer Libraries support Rensselaer's educational and research endeavors by providing access to needed scholarly content. Complementary to this, the Libraries provide learning and social spaces aimed at enabling learning and discovery and offer online, as well as in-person, consultation on information resources. The Rensselaer Libraries' main library, the Folsom Library, is a short walk from the Architecture Library which, along with the School of Architecture, is located in the Greene Building. The Architecture Library was established in 1929, and thus is approaching a century of collection-building and service to the School of Architecture. The website for the overall Rensselaer Libraries is http://library.rpi.edu and for the Architecture library is http://library.rpi.edu/architecture.

2. Library Materials - At the end of Rensselaer's fiscal year 2014, the Rensselaer Libraries held 353,099 print book titles and provides access to 131,038 electronic books. The Architecture Library holds 11,373 print titles,1,747 electronic book titles, an extensive art and architecture periodicals collection and 117,000 slides. Currently, the Libraries subscribe to over 20,000 electronic journals. Key Architecture packages include Archivision, ARTbibliographies Modern, Arts & Humanities Full Text, Arts and Humanities Citation Index, Avery Index to Architectural Periodicals, Bibliography of the History of Art, BuildingGreen Suite, Design and Applied Arts Index, International Bibliography of Art, Oxford Art Online, ProQuest: Arts & Humanities and Saskia Ltd. Cultural Documentation. A Collection Development Team meets weekly to review electronic resource usage statistics and make renewal, cancellation and new subscription decisions.

Methodologies for meeting the needs of Rensselaer's programs, faculty, researchers and students include:

Books

1. Purchasing individual print and electronic books based on subject librarian selections, patron requests and aggregated book subscription packages. Electronic book titles displayed in RensSearch, the Rensselaer Libraries website and online catalog, include thousands of publisher titles that are not owned by the Rensselaer Libraries but which, after a patron browsing them for 5 or 10 minutes results in a transaction triggering either a short-term loan or purchase of the electronic book. From the patron's perspective, the process appears to be just another electronic book in the catalog. The Rensselaer Libraries are increasingly reallocating portions of the book budget from librarian-selected to Patron-Driven Acquisition (PDA) eBooks.

2. Providing loan access via the Rensselaer Libraries' website and online catalog (RensSearch) linkage to ConnectNY, a resource-sharing consortium of 18 private New York State institutions of higher learning. The members of this consortium have agreed to use library system middleware that provides an online, merged catalog of the 18 ConnectNY institutions' library book catalogs containing over 9 million book titles. This consortium also provides a courier service that continually routes books between member libraries in order to provide access to the books in 2 to 4 business days. Pratt Institute, which just joined ConnectNY this year, has a School of Architecture.

3. Providing traditional interlibrary loan access via the worldwide OCLC library cooperative.

4. If only one chapter of a book is of interest, that chapter may be obtainable by the Libraries' participation in the RapidILL consortium's "Rapid Book Chapter" program where a scanned copy of the chapter is sent from the library that has the book in their collection to the requesting library.

5. Submittal of a "Purchase Request" form via RensSearch, the Library's website and online catalog. Book requests are routed to selection librarians for purchase consideration, if appropriate, or a response is sent to the patron suggesting they request the title via one of the Rensselaer Libraries' interlibrary loan options.

Journal Articles

1. Subscribing to electronic journals individually and/or via an aggregated package.

2. Providing traditional interlibrary loan access via the worldwide OCLC library cooperative.

3. Membership and participation in RapidILL a revolutionary article delivery system developed at Colorado State University. Rensselaer is a participant in RapidILL's Academic Pod E that includes many prestigious institutions of higher learning including a good number of institutions with notable engineering programs such as Carnegie Mellon, Georgia Tech, Johns Hopkins, and the University of Wisconsin.

4. If article is still unavailable, due to exceeding the annual "fair use" copyright restriction for a particular journal, the Interlibrary Loan Librarian will usually purchase the article directly from the publisher, or via the Copyright Clearance Center's "Get It Now" document delivery service and email, in PDF file form, to the patron.

5. Submittal of a "Purchase Request" form via RensSearch, the Library's website and online catalog. If warranted in the Libraries' judgment, the title is added to the Materials Request list for subscription consideration given funding coverage and prioritization over other requests.

Drawing upon its strong tradition of providing innovative ways to find and obtain information, the Rensselaer Libraries is transitioning from a “Just-In-Case” to a “Just-In-Time” library model. The electronic resources environment and nascent patron-driven electronic book loan and acquisitions offerings provide the tools to analyze usage and provide users with exactly what they want, when they want it. It’s also increasingly more cost and labor workflow effective to purchase, or obtain via interlibrary/consortia loan or fee-based short-term loan mechanisms, electronic delivery of articles from journals with lower Rensselaer usage statistics. The transition to the “Just-In-Time” model represents a shift in library resource expenditures from speculation and anticipation by librarians to real and immediate needs by patrons – preferably in electronic format.

This transition builds on recent pilot patron-driven acquisition (PDA) projects undertaken by the Rensselaer Libraries and also in conjunction with the ConnectNY consortium. The evolution from a print-based physical collection of books and a subscription electronic journal model to an on-demand “Just-In-Time” model focused, whenever possible, on electronic/online delivery, will accelerate as publishers become increasingly more flexible in their own business models.

3. Library Facilities and Services - Folsom Library serves as the main library for the Rensselaer campus, and houses materials in support of all curricula. The building has four floors covering 108,028 square feet, with the majority of the collections available in open stacks directly accessible to users. Most materials may be borrowed. Reference books, print journals, and archival materials are restricted to building use.

The second floor of the library is the main floor where one enters, and where the Service Desk is located. Reference services are available in person during standard business hours, by phone, and online via a Library Support web form. General questions may be asked at the Service Desk, during staffed hours. Class Reserves materials are made available by the Public Services staff, as well as requests submitted to InterLibrary Loan. The Class of ’96 Reading Room, in addition to comfortable seating, houses a rotating collection of approximately 350 trade fiction and nonfiction books. There are popular magazines as well as a selection of travel books. The magnetic poetry board is a popular feature as is the chess board. The nearby DVD collection has over 4500 titles for loan. Also on the second floor is The Library Café, open weekdays, from morning to evening. It serves beverages, and a variety of snacks, soup and sandwiches. Counter and table seating are available.

The first floor is occupied by the libraries’ Technical Services department, compact shelving with older journals and theses, a vinyl album collection, a book-swap shelf, and tables and carrels for study. The Center for Communication Practices occupies offices on the first floor, and a high-tech classroom is under construction.

The third floor is devoted to books and journals supporting the humanities. The Institute Archives and Special Collections are located in the Fixman Room. The fourth floor, on which the majority of the engineering and science books and journals are housed, is primarily a quiet study area with impressive views of Troy and the Hudson River.

The Architecture Library occupies 4184 sf on the third floor of the Greene (Architecture) building and serves as a kind of living room for the school. It houses the Art and Architecture section of the Institutional collection including the key architectural journals and packages listed above as well as a visual resources collection and slide library. Staff provide students and faculty assistance with access to the network of scholarly resources to which Rensselaer belongs, and specific searches. They also review Final Project books for conformance with standards and arrange for binding and cataloguing and continually assess the collection and acquisitions. The Architecture Library also serves as a study location equipped for scanning and printing materials related to research as well as for students’ studio and course projects.

4. Library Staffing - The Director of the Rensselaer Libraries oversees both the Folsom and Architecture Libraries including a staff of eighteen, which includes six librarians, three archivists, and six library associates or specialists.

Below the director-level, there are managers who supervise staff in three areas of operations: The Manager of Public Services supervises the Reference and Instruction, and InterLibrary Loan librarians, four Folsom Library Associates and one Architecture Library Specialist, who provide services for the Service Desk, Class Reserves, InterLibrary Loan and stack maintenance. The Manager of Technical Services supervises the Technology and Metadata Librarian, the Cataloging Librarian & Architecture Library Liaison, and a Library Specialist who performs acquisitions and serials functions. In Archives, the Institute Archivist, who is also the libraries' Head of Collection Development, supervises the Assistant Institute Archivist, and an Automation Archivist. In administration, reporting to the director, there is an Administrative Assistant, a Business Coordinator, and a Senior Systems Administrator who provides IT support for the libraries.

5. Consortia - The Rensselaer Libraries participate in a number or library consortia that provide benefit to the Architecture program. The most important is ConnectNY, consisting of 18 independent New York State colleges and universities with the mission to share collections, leverage resources and enhances services through cooperative initiatives and coordinated activities. This past year, ConnectNY and NExpress, a consortium of seven independent institutions of higher education in the New England states, agreed to provide a linkage for their shared print book programs. The Renesselaer Libraries also participate in RapidILL, an interlibrary loan network, and in the Capital District Library Council (CDLC). Finally, the Rensselaer Libraries has long participated in New York State's Coordinated Collection Development Agreement that provides an annual grant to be used for print books. The Rensselaer Libraries appropriates this annual grant to Management, Computer Science and Architecture print books.

6. School of Architecture Library - The Architecture Library is staffed full-time by a Library Specialist, with support from a Librarian who shares Folsom Library (main library) and Architecture Library responsibilities. Student workers, all from the School of Architecture, play a key role in running the Architecture Library. The Architecture Library is under the supervision of the Manager of Public Services of the Rensselaer Libraries. The Manager of Public Services reports to the Director of the Rensselaer Libraries, who in turn reports to the Vice-President for Information Services and Technology and Chief Information Officer.

> **Equipment and Furnishings -** There are spacious areas on all four floors of Folsom Library, providing seating for more than 500 people, with tables for group study, and desks and carrels for individual study. A total of fifty-four small and medium size study rooms are freely available, located around the perimeters of mainly the third and fourth floors, with a few on the first floor. Two larger group-meeting rooms on the third floor can be reserved for collaborative work. A seminar room and conference room on the main floor are also available for reservation. Lounge areas with comfortable seating are scattered around the four floors.
>
> Wireless LAN access is available throughout the library and several hundred ports are available for wired connections. A total of 24 public computers are in the building that can be accessed with a Rensselaer Username and password, and guests may be signed on by a staff member. There are scanners and printers on every floor of the library, including a KIC Bookeye 4 scanning workstation on the second floor. There are two microform readers with printing capability on the first floor, and a photocopier on the third floor. Also, in one of the first floor study rooms is a turntable to accompany the nearby vinyl album collection.
>
> In the Architecture Library there are five large study tables, each with lighting and seating for six. This is complemented by a large meeting table /area and several more casual, comfortable

seating areas. The lighting and décor provide a cozy, traditional library setting conducive to serious individual study, as well as group projects. Within the library are two large format scanners, 4 smaller high-end scanners, eight workstations, two photocopiers and a network-connected color printer accessible for student use students. The Architecture Library has wireless LAN access available.

Library Hours

During the academic year the Folsom Library Building is open

Mon. – Thur.	7:30 AM – 3 AM (Service Desk closes at midnight)*
Friday	7:30 AM – 9 PM
Saturday	10 AM – 9 PM
Sunday	12 PM – 3 AM (Service Desk closes at midnight)

During the academic year, the Architecture Library is open:

Mon.-Thurs.	8:30 AM – 9 PM
Fridays	8:30 AM – 5 PM
Saturdays	2:00 AM – 6 PM
Sundays	3:00 AM – 9 PM

I.2.5 Administrative Structure and Governance

The Institute - Rensselaer is a private university with a Board of Trustees. The President sets the vision and mission of the Institute. Since her arrival in 2000, Dr. Shirley Ann Jackson, in conjunction with her leadership team, established both the *Rensselaer Plan and The Rensselaer Plan 2024*; comprehensive strategic plans aimed at elevating the institute 'to achieve greater prominence in the 21st century as a top-tier world-class technological research university with global reach and global impact.' Conceived as a visionary roadmap for the institute to address pressing global challenges specific to the 21st century, the leadership throughout the institute is committed to rigorous annual performance plan procedures which ensure an evergreen examination of these larger aspirations in relation to each of the school's respective priorities. The President's cabinet is comprised of the Provost, ten Vice Presidents, the Chief of Staff, and the Secretary of the Institute and General Counsel. The University consists of five Schools, led by Deans who oversee their respective portfolio and report to the Provost, the Chief Academic Officer of the University: [see Institute's Organizational Chart - https://www.rpi.edu/president/bot/

Academic Leadership – Direct Reports Chart

Board of Trustees – Arthur J. Gajarsa, Chair

President – Dr. Shirley Ann Jackson

Provost – Dr. Prabhat Hajela

Academic Deans

- School of Architecture – Evan Douglis
- School of Engineering – Shekar Garde
- School Humanities, Arts and Social Sciences (HASS) – Mary Simoni

- Lally School of Management and Technology – Thomas Begley
- School of Science – Curt Breneman

Each of the five Deans report to the Provost and is part of the *Provost's Dean's Council*. The *Provost's Dean's Council* includes: the five academic Deans, the Vice-Provost and Dean of Undergraduate Education and the Vice Provost and Dean of Graduate Education. Under the performance planning process employed at Rensselaer, each School is referred to as a 'Portfolio'. The Deans are the 'Portfolio Owners', responsible for annual review reporting, strategic and implementation planning, faculty and staff hiring, accreditation oversight, budgeting, fundraising, student recruitment, outreach, accreditation and public relations linked to the overall short and long-term vitality of their respective schools.

The Board of Trustees - The Board of Trustees works with the President to oversee the Institute. The Board meets several times each year to receive updates on the programs and finances of the Institute, and to act on matters of importance. Officers of the Board of Trustees are: Chairman, Vice Chairman, Secretary, and President Shirley Ann Jackson.

The Board of Trustees is comprised of 25 members, including the officers noted above. (Additional information is available at https://www.rpi.edu/president/bot/)

The President and Leadership Team - The Honorable Shirley Ann Jackson has been President of Rensselaer Polytechnic Institute since 1999. She is the Institute's 18th President. Prabhat Hajela, Ph.D., is the Provost, the chief academic officer of the Institute. (Information on the Cabinet Members and Deans is available at www.rpi.edu/president/cabinet/index/html.)

President's Cabinet

- Prabhat Hajela, Provost
- Charles Carletta, Secretary of the Institute and General Counsel
- Elisha Mozersky, Chief of Staff
- Jonathan S. Dordick, Vice President of Research
- Virginia Gregg, Vice President of Finance and Chief Financial Officer
- John Kolb, V.P. for Information Services and Technology, and Chief Information Officer
- [Vacant], Vice President and Dean, Hartford Campus
- John Wexler, V.P. of Enrollment and Dean of Undergraduate/Graduate Admission
- Curtis Powell, Vice President of Human Resources
- Claude Rounds, Vice President of Administration
- Frank E. Ross III, Vice President of Student Life
- [Vacant}, Vice President of Strategic Communications and External Relations
- Graig Eastin, Vice President of Institutional Advancement

Additional Direct Reports to the President

- Johannes Goebel, Dir.of the Experimental Media and Performing Arts Center (EMPAC)
- James Spencer, Director of Rensselaer Technology Park and Commercial Real Estate

The Institute's Faculty Senate - The Faculty Senate, as reconstituted in March 2012, is a 19-member elected body comprised of 14 members of the tenured/tenure-track faculty, 4 members of the non-tenure faculty, and the Provost (ex officio). (Further information is available at http://facultysenate.rpi.edu/about-rensselaer-faculty-senate.)

The Faculty Senate's statement of purpose indicates that: *"The Faculty Senate shall represent the views of the faculty on issues affecting the common purposes of Rensselaer Polytechnic Institute. The faculty's role in the creation, understanding, and dissemination of knowledge is held in the highest esteem and will not be abridged. The Senate shall implement the faculty's participation in key aspects of academic governance by recruiting and nominating faculty; administering elections including elections to the Promotion and Tenure, Curriculum and Planning and Resource Committees, any standing and ad hoc committees, and other subsidiary bodies of the Senate as required; providing a forum for policy deliberation on matters of importance to the faculty; and advising the Provost as to faculty views in all matters relating to the principal missions of the Institute. Resolutions passed by the Senate shall help guide Rensselaer Polytechnic Institute in scholarly activities and instruction, and important issues affecting the faculty in general will be presented to the faculty with recommendations for consideration and action."*

Faculty Senate

Executive Committee - Chair of the Faculty, President, Vice President, Secretary of the Faculty, Secretary of the Senate, and Recording Secretary. Senators include two from School of Engineering, two from School of Science, two from School of Humanities and Social Sciences, one from School of Architecture, and one from Lally School of Management

Faculty Senate Committees

Curriculum Committee - (seven faculty members elected to 3-year terms), to consider proposals for changes in courses of instruction, requirements for a major in each subject, for new curricula, and changes or discontinuations in existing curricula. Additionally, the Committee considers proposals for changes in the Core Curriculum and encourages innovations in instruction and pedagogical materials.

Promotion & Tenure Committee - (eight full professors serving 3-year terms plus one selected annually by the student body) to review cases for promotion and/or tenure and make recommendations to the Provost. (Faulty Handbook, http://www.rpi.edu/dept/provost/facultyhandbook1-06.pdf .

Planning & Resources Committee - (five members of the tenured/tenure-track faculty elected to 3-year terms) to participate in strategic academic planning, review proposals to approve new academic programs or to terminate existing programs and solicit new proposals from the faculty. The committee also provides the Provost with guidance and advocacy on the development of new Institute Centers for Research.

Faculty Committee on Honors - (five tenured/tenure-track members appointed for staggered terms) issues a public call for nominations and then proceeds to evaluate and select candidates for specific honors. The Committee also evaluates, ranks and recommends candidates to the President for the following year's Commencement Speaker and Honorary Doctoral Degree Candidates.

The Senate holds one general meeting in the fall and one in the spring. Special meetings of the faculty can be called by the President of the Institute, the Provost, the Executive Committee of the Senate, by a majority of the Senate, or by a petition from the general faculty with the signatures of 10% of the faculty.

The School of Architecture - The School of Architecture is one of two schools throughout the institute [Architecture and Engineering] with professional programs. Of the five schools, three [HASS, Science and Engineering] have departments, and two [Architecture and the Lally School of Management and Technology] do not. The School of Engineering is the largest school comprising 59% of the undergraduate student population.

School of Architecture [see organization chart] (http://www.arch.rpi.edu/naab/16-OrganizationalCharts.pdf)

Dean[6,7]
Leadership
- Associate Dean[1,2,8]
- Head of Graduate Studies [1,3]
- Business Manager[1,9]
- Center Director [LRC] [2,3]
- Center Director [CASE] [2,3,10]
- LRC Associate Director [2, 11]
- Graduate Program Directors - [M. Arch I, M.Arch II, Lighting, Architectural Acoustics, Built Ecologies][12]

Faculty [3]
Staff
- Executive Assistant to the Dean [3]
- Administrative Staff [13]
- Digital Fabrications Lab Manager [8]
- IT Director [8]

In the School of Architecture there are no departments and faculty report directly to the Dean. Research faculty and specialists report to Center Directors. Although the Associate Dean, the Head of Graduate Studies and Graduate Program Directors serve an administrative role and are part of the Dean's leadership team they do not have faculty reports or perform annual reviews, as required of department heads in other schools throughout the institute.

SoA Leadership Team

- Prof. Evan Douglis, Dean
- Associate Prof. Mark Mistur, Associate Dean

- Assistant Prof. Christopher Perry, Head of Graduate Studies, M.Arch II Program Director
- Prof. Mark Rea, Director of the Lighting Research Center
- Prof. Russ Leslie, Associate Director of the Lighting Research Center
- Assistant Prof. Lonn Combs, M.Arch Professional Program Director
- Prof. Anna Dyson, Dir. of the Center for Architecture, Science and Ecology (CASE)*
- Assistant Prof. Alexandra Rempel, Acting Dir., B.S. in Building Science Program

[6] Leadership Team
[7] Tenured Faculty Appointment
[8] Reports to the Dean
[9] Reports to the Dean and Director of Budget in Finance
[10] Reports to the Dean (Academic Program) and V.P Research (CASE)
[11] Reports to the Dean and LRC Director
[12] Reports to the Dean and Director of Graduate Programs
[13] Reports to the Business Manager

- Associate Prof. Ning Xiang, Architectural Acoustics Program Director.
- Associate Prof. Gustavo Crembil, Online Projects Coordinator.
- Instructor Adam Dayem, Director of Publications.

* *CASE is co-located in New York City and at the RPI campus.*

In 2015, CASE was designated an Institute Center. While the research component of the program reports to the VP of Research, the faculty and academic programs at CASE remain under the purview and responsibility of the School of Architecture.

The NAAB-accredited degree programs of the school include the:

- Bachelor of Architecture (5yr)
- Master of Architecture (3yr)

B.Arch Program Administration - The Associate Dean administers the B.Arch program, under the directorship of the Dean. All curriculum-related issues are addressed by the school's *Curriculum Committee*. The committee is chaired by the Associate Dean and comprised of 5-6 tenured and tenure-track faculty who meet regularly to assess, curricula, conformance to program and course level learning outcomes, and to consider, initiate, approve and implement proposed changes. The committee maintains minutes, votes on recommendations that are forwarded to the Dean for approval, and where required, to the Faculty Senate Curriculum committee, Provost, President and New York State Education Department for approval. The committee periodically establishes task groups with membership outside the committee to consider more complex issues and sometimes consults the *Dean's Student Advisory Council* on changes to the curriculum.

M.Arch Program Administration - The Director of the M.Arch Program administers the M.Arch Program, under the directorship of the Dean. The Director of the M.Arch Program also reports directly to the Head of Graduate Studies who in turn reports administratively to both the Dean and the Vice Provost for Graduate Education. All proposals and changes are made through the SoA curriculum committee. Upon approval by the curriculum committee recommendations are moved to the Dean, and where required, to the Faculty Senate Curriculum Committee, Provost, President and New York State Education Department for approval.

Other degree programs include:

- **B.S. in Building Science** – 4 year

- **M.Arch II*** – Geofutures - 1 year Post-Professional
  (prior professional Architecture degree or international equivalent required)
  - Concentration in Environmental Paremetrics
  - Concentration in Ecological Urbanism

- **Master in Science in Lighting** – 1 year

- **Master of Science in Architectural Sciences** – 1 year
  - Concentration in Architectural Acoustics
  - Concentration in Built Ecologies
  - Concentration in Lighting

- **Ph.D. in Architectural Sciences** – 72 credits – (including a dissertation)

- Concentration in Architectural Acoustics
- Concentration in Built Ecologies
- Concentration in Lighting

* The SoA is currently in the process of changing the name to Master of Science in Architecture. The application has been approved at both the school and institute level and is expected to be submitted to NYS by Rensselaer's President momentarily, for final approval.

The Ph.D in Architectural Sciences provides the umbrella structure for the concentration areas described above and:

- Builds on the Rensselaer platform and distinction
- Promotes interdisciplinary approaches to research
- Creates resources, expertise and opportunities for professional program students in the form of faculty, research, scholars, labs, tools, minors, courses and programs (NYC – CASE) and undergraduate research opportunities.

The Master of Science in Architectural Sciences in those same concentration areas is much the same:

- Allowing students with professional degrees, and students from alternate related disciplines to engage in study in a specific area
- Preparing graduates with specific expertise, for consultancies, or in anticipation of/as part of a Ph.D.

Graduate Research Programs Administration - Under the directorship of the Dean, the Ph.D. in Architectural Sciences and Master of Science programs is administered by each of the program's respective directors. These Directors also report directly to the Head of Graduate Studies, who in turn, reports administratively to both the Dean and the Vice Provost for Graduate Education. Proposals and curricula changes are vetted and approved first by the SoA Curriculum Committee. The committee maintains minutes, votes on recommendations that are forwarded to the Dean for approval, and where required, to the Faculty Senate Curriculum committee, Provost, President and New York State Education Department for approval.

School of Architecture Standing Committees

SoA Curriculum Committee – Led by a tenured faculty member (the Associate Dean), this committee consists of the Head of Graduate Programs, the Head of the M.Arch program and four additional faculty members at the ranks of assistant and associate professor. The Dean is an ex-officio member. His executive assistant is the staff liaison to the committee and the Student Services Administrator also participates. The Associate Dean and one other member serve on the Faculty Senate Curriculum Committee. On matters concerning the Architectural Acoustics, Lighting, or Built Ecologies Programs the directors or their representatives attend and participate on an as needed basis. To better understand the student perspective, the curriculum committee periodically solicits the perspective of students from the Dean's Student Advisory Council.

The committee meets every two weeks to consider and recommend changes to programs and courses, address institute initiatives dealing with curricular issues

and to oversee and assess curricula in relation to program outcomes and mission. Recommendations are forwarded to the Dean and when required to the Faculty Senate Curriculum committee and New York State Education Department.

In 2013 -14 the Curriculum committee initiated a comprehensive review of the B.Arch and M.Arch I programs. The process was inclusive, engaging many additional faculty members at all ranks on task groups established by content area. Two daylong retreats to consider together how the school can best realize its mission in a 21st century ever-changing professional and global context focused on revisions to the B.Arch and M.Arch I. (http://www.arch.rpi.edu/naab/08-Curriculum-Pre-Retreat-Documents.pdf)

Faculty Search Committee – led by a tenured faculty member, this committee includes 5-6 tenured and tenure-track faculty who, once the institute provides funding for faculty hiring, take responsibility for developing the advertisement, reviewing applications, interviewing candidates and making hiring recommendations to the Dean.

Pedagogical Innovations Committee – led by a tenured faculty member, this standing committee includes 4-5 contingent and tenured/tenure-track faculty, as well as a student representative. The Committee's role is to study pedagogical innovations, including MOOCs and technological advancements, and make recommendations to the Dean.

Library Committee – led by a tenured faculty member, this committee is comprised of approximately 6 contingent and tenured/tenure-track faculty as well as one undergraduate student and one graduate student. The Committee's role is to review faculty and student requests for books, journals, and other materials, and to provide the Dean with recommendations for updates to the library, extended uses of the library, and other library-related matters.

School of Architecture Task Force Committees - Other committees and task groups are formed as needed. Recent committees have included a *NAAB Preparation Committee*, *Curricular Task Groups* (by content area), and a *Tenure and Promotion Standards Committee*.

Opportunities for Involvement in Governance by Faculty, Staff, and Students

Governance by Faculty, Staff and Students - A high percentage of tenure-track and tenured faculty teaching in the professional programs serve as part of the school's leadership team and/or serve on the School of Architecture *Curriculum Committee*. As a result, a majority of the full-time faculty are actively involved in the governance of the program. Fixed full-time faculty (comprised of Lecturers and Professors in Practice) and part-time faculty referred to as 'Adjunct' faculty, who do not assume administrative positions or committee membership, are often consulted throughout the course of each semester on matters relating to their respective content area.

The Dean and Associate Dean meet throughout the course of the academic year, with the Administrative, IT, Library, and Shop staff in order to exchange information, promote performance efficiency, and overall strengthen the support infrastructure in relation to the academic and graduate research units. The staff is encouraged to contribute their unique perspectives and insight with the school leadership.

In terms of opportunities for the students to participate in the governance of the school, students are represented on the *Dean's Student Advisory Council*, approximately 15 student-selected representatives from each undergraduate and graduate class, as well as the leaders of the AIAS and NOMAS student chapter organization are periodically solicited to contribute to the school's *Curriculum Committee* and students oversee two influential student chapter organizations in the school that interface with the administrative leadership of the school. The Council also meets with the Dean one to two times per semester to discuss career planning, program curricula, time management, faculty advising and student mentorship, study abroad program opportunities, technology infrastructure, student recruitment, publications, and a range of other matters of great importance to the student body. Meeting minutes are taken, distributed to all the attendees and student proposals are carefully considered in the context of implementing change.

The Curriculum Committee, in addition to engaging the Dean's Student Advisory Council on occasion, also involves the entire school on larger proposal, such as the recent curriculum reform of the B. Arch and M. Arch programs.

II.1.1 Student Performance Criteria:

The B.Arch and M.Arch SPC Matrices are available here: http://www.arch.rpi.edu/naab/29-B-ARCH-SPC-Matrix.pdf and http://www.arch.rpi.edu/naab/30-M-Arch-SPC-Matrix.pdf

Integrated Architectural Solutions – This pedagogical strategy has been a defining characteristic of the School for many years, particularly in the upper level required Design Development Studio where students are taught to integrate many of the concerns of complex building design from bulk and mass, to program, life safety, accessibility, environmental stewardship, building envelope, materials, site and building systems using multiple tools including BIM and large scale physical modeling to develop their creative ability to responsibly manage multiple criteria and constraints to a project's advantage. "Tech-Talks" associated with a variety of topical considerations launch weekly charrettes and exercises that build on the complexity while triggering questions and necessitating design iterations. The studio is joined by fifth-year master of engineering students and the Bedford professor (a structural engineer) to integrate the A/E enterprise in the studio setting and is a co-requisite with Professional Practice. Coordinated assignments explore code compliance, and issues of project cost.

At the graduate level the creation of the Built Ecologies Program and the Center for Architecture Science and Ecology demonstrates a commitment to these principles, particularly as they relate to research and developing skills associated with making integrated decisions considering multiple variables. At the undergraduate level the Design Development studio has been expanded to a two semester sequence of Integrated Design Schematic (IDS) and Integrated Design Development (IDD) with the anticipation that integrative evaluations and decision making in the design process will live in both studios with an emphasis on site conditions and predesign in IDS, and building systems integration in IDD. At the M. Arch level students experience a semester at CASE in a professional research environment working on, among other things, one of the next-generation sustainable building systems that are being developed there.

Emphasis on Interdisciplinary Research – Research is increasingly key to our discipline. As a school we demonstrate a commitment to various forms of research ranging from qualitative to quantitative, fundamental and applied in our graduate research programs and centers, through experimental studios, work that addresses design workflow, new fabrication techniques and tools, as well as design research methodologies. In the final year Methods course students are presented with and demonstrate an understanding of various theoretical and applied research methodologies in parallel with setting up their own research related to a final project.

Outcome Based Learning – Course Learning outcomes are listed in every course syllabus and are tied to some form of assessment. For those required courses that are linked to NAAB SPC's, either in whole or part, there are Learning Outcomes that directly relate to the SPC and that are assessed, either in the context of a project, assignment or through examination.

The Methodology for Assessing Student Work (i.e., "high" v. "low" pass) - The methodology for assessing work at Rensselaer is based on letter grades with modifiers (A, A-, B+, etc.). Many faculty use numerical systems for individual assignments; however, when calculated to derive the final semester grade they are transposed to letter grades. In undergraduate courses, 'D' is the minimum passing grade. For graduate students (M.Arch program) the minimum passing grade it is a 'C-'. This applies to any of their courses, whether they are at the 4000, 5000, or 6000 level. In Design studios, the School has a 'two-D policy' ('two-C policy' for graduate students). Upon receiving a second 'D' ('C' for graduate students) a student may not continue in the design sequence (program) without remedial action required by the faculty (of the whole). Remedial action is almost always the requirement to repeat a studio and earn a 'B' or better to remain in the program. Low pass in design studio is therefore considered to be a low 'C' for undergraduate students and a low 'B' or 'C' for graduate students. In other courses low pass is a 'D' for undergraduate students and a 'C' for Graduate students. In all cases "high pass" is an 'A'.

II.2.1 Institutional Accreditation

The Institute is accredited by the Middle States Commission on Higher Education. See http://www.arch.rpi.edu/naab/31-Middle-States-Letter.pdf

II.2.2 Professional Degrees and Curriculum

NAAB Accredited Degrees

- Bachelor of Architecture, B. Arch [171 credits]
  Prerequisite Education: High School Diploma including:
  - 4 years of English
  - 4 years of mathematics through pre-calculus
  - 4 years of science (including biology, chemistry and physics)
  - 3 years of social studies and/or history

- Master of Architecture, M. Arch [100 credits - in addition to baccalaureate degree]
  Prerequisite: A 4-year 120 credit Baccalaureate degree

The School of Architecture offers a five-year Bachelor of Architecture degree. The Bachelor of Architecture is a professional degree accredited by the National Architecture Accrediting Board. Approximately 60 students are admitted directly into the program each year. As a professional school designed for those ready to begin serious architectural study in the first year, the School of Architecture's admissions decisions are based on three criteria:

- Overall academic excellence
- Creativity demonstrated through work in the arts and other areas
- Maturity and personal motivation

Bachelor of Architecture (5 yr)

	B. Arch (rqd)	B. Arch (actual)
General Studies	45	52
Optional Studies	10	12
Professional Studies	As defined by the program	107
Total Credits	150	171

Bachelor of Architecture (171 credit hours)

General Studies (52)

Humanities Arts and Social Sciences (20 cr)
- 8 cr - Humanities courses
- 8 cr - Social Science courses
- 4 cr - Humanities or Social Science course @ 4000 level

Sciences (20 cr)
- 4 cr - (1) required Math course
- 4 cr - (1) elective Math course
- 8 cr – (2) required Science courses
- 4 cr – (1) elective from School of Science

Electives (12 cr)

Required Professional Courses (107 cr)*

History/Theory/Criticism (18 cr)
- 10 required courses

Technology (22 cr)
- 8 required courses

Professional Practice (6 cr)*
- 3 required courses

Digital Constructs (8 cr)
- 4 required courses

Design (45 cr)
- 6 core studios + 3 required option studios

Final Project (8 cr) *
- 1 required methods seminar and 1 required studio

Professional Electives (12 cr)

* Being Phased-In

Courses and Credit Hours – Professional Content Breakdown (107 credits)

The B. Arch professional degree program consists of (99) required course credits and (8) credits of Final Project. The professional studies curriculum includes a History/Theory sequence, a Technology sequence and a Design sequence within which are integrated computing and drawing components.

History / Theory Sequence (18 credits)

ARCH 2150 The Ethos of Architecture (2cr)
ARCH 2150 Architectural Media (2cr)
ARCH 4090 Architectural Case Studies (2cr)
ARCH 4120 Modernity in Culture, Civilization, and Architecture 1 (2cr)
ARCH 4100 An Architectural Genealogy 1 (2cr)
ARCH 4130 Modernity in Culture, Civilization, and Architecture 2 (2cr)
ARCH 4110 An Architectural Genealogy 2 (2cr)
ARCH 4150 Contemporary Design Approaches (2cr)
ARCH 4050 Cities and Their Territories (2cr)

Technology Sequence (22 credits)

ARCH 2510 Materials and Design (2cr)
ARCH 2370 Energy, Comfort and Ecology (2cr)
ARCH 2330 Structures 1 (3cr)
ARCH 2350 Constructions Systems (2cr)
ARCH 2360 Environmental and Ecological Systems (4cr)
ARCH 4330 Structures 2 (3cr)
ARCH 4560 Materials and Enclosures (2cr)
ARCH 4740 Building Systems and Environment (4cr)

Professional Practice (6 Credits)
ARCH 4540 Professional Practice 1 (2cr) *
ARCH 4550 Professional Practice 2 (2cr)
ARCH 4590 Economics and Architecture (2cr)

Digital Constructs Sequence (8 credits)
ARCH 2520 Digital Constructs 1 (2cr)
ARCH 2530 Digital Constructs 2 (2cr)
ARCH 2540 Digital Constructs 3 (2cr)
ARCH 2550 Digital Constructs 4 (2cr)

Design Sequence (45 credits)

ARCH 2800 Architectural Design Studio 1 (5cr)
ARCH 2810 Architectural Design Studio 2 (5cr)
ARCH 2820 Architectural Design Studio 3 (5cr)
ARCH 2830 Architectural Design Studio 4 (5cr)
ARCH 4963 Integrated Design Schematic (5cr)
ARCH 4830 Design Development Studio (5cr)
ARCH 4770 Architectural Design Studio 5 (5cr)
ARCH 4780 Architectural Design Studio 6 (5cr)
ARCH 4490 Architectural Design Studio 7 (5cr)

Final Project (8 credits)

ARCH 4910 Final Project Design Research Seminar (3cr)
ARCH 4920 Final Project Design Studio (5cr)

Professional Electives (12 credits)

3-6 Professional Elective courses (2-4 crs ea.) (12cr)

Courses and Credits – General Education (credits) - The curriculum leading to the architecture degree includes 52 credit hours of required, restricted and unrestricted elective general education courses. Students are required to complete:

Science Core (20 credits)

MATH1500 Calculus for Architecture, Management, and HASS (4cr)
MATHXXXX Math Elective (4cr)
BIOL1010 Introduction to Biology (3cr)
BIOL1015 Introduction to Biology Laboratory (1cr)
PHYS1050 General Physics (4cr)
Science Elective (4cr)

Humanities Arts and Social Sciences Core (20 credits)

Social Science Electives (8cr)
Humanities Electives (8cr)
Humanities or Social Science Elective (4000 level) (4cr)

General Elective Credits (12 credits)

Students have 12 free electives credits which may be used to pursue a minor or dual major, or as a means of further broadening exposure to a range of disciplines.

In addition, institute core curriculum / HASS requirements include a:

Depth requirement: student must take at least one course sequence in the same HASS discipline including a lower and an upper level course. (for example, a 1000 level and a 4000 level Psychology course), and a

Communication Requirement: Students must take at least two Communication Intensive Courses. One course must be in the student's major; the other must be in the School of HASS. ARCH4980 B.Arch Final Project or ARCH 4920 Final Project Design Studio count for the School of Architecture communication intensive course.

Any and all course prerequisites exist within the 171 credits, courses and categories outlined above. Prerequisites are specifically identified with course sequences and listings below.

Notes:

- There are 20 stand alone general studies credits in Humanities Arts and Social Sciences
- There are 20 stand alone general studies credits in Science
- An additional eight credits of general studies content have been formally attributed to required architecture course content by the School of Science (4 cr), the School of Humanities Arts and Social Sciences (4 cr), and the Faculty Senate Curriculum Committee, respectively. (see catalog)
- There are 12 additional general elective credits.

- The Italian studies program has language course requirements (2 levels) taken before participation. The Chinese studies program has language course requirements (2 levels) taken before participation and while studying abroad. These are taught online or by non-architectural faculty, and do not include professional content. They online courses are required but not for credit, administered through the School of Architecture and counted as professional electives.
- The India Studies, China Studies and Italian Studies Program have significant general studies content including courses in Painting, Chinese Calligraphy, Mandarin Language, Italian Language, Art and Culture of Italy, India Discovery, The Culture and Civilization of India.

Master of Architecture

	M. Arch (rqd)	**M. Arch (actual)**
General Studies	Defined by the baccalaureate required for admission	120
Optional Studies	10	10
Professional Studies	As defined by the program	90
Undergraduate Credits	As defined by the program	59
Graduate Credits	30	41
Total Credits	168	220

General Studies (120) - From prior Baccalaureate Degree

Optional Studies (10)

Required Professional Courses (90 cr)

Undergraduate Credits: (59 cr)[14]

History/Theory/Criticism (8 cr)
2 required courses
Technology (19 cr)
6 required courses
Professional Practice (6 cr)*
3 required courses
Digital Constructs (4 cr)
2 required courses
Design (10 cr)
2 core studios
Professional Electives (8 cr) (4000 Level or above)

Graduate Credits: (41 cr)[15]

[14] 5000 level graduate professional courses taken with undergraduates in 4000 level courses.
[15] 6000 Level courses for graduate students only except by special permission – rarely granted.

History/Theory/Criticism (4 cr)
1 required courses
Technology (8 cr)
3 required courses
Design (15cr)
3 design studios
Final Project (8 cr) *
1 required seminar and 1 required studio
Professional Electives (6 cr) (6000 Level)

* Being Phased-In

Courses and Credit Hours – Professional Content Breakdown (100 credits)

The M.Arch professional degree program consists of 92 required course credits and 8 credits of Final Project. The professional studies curriculum includes a History/Theory sequence, a Technology sequence and a Design sequence within which are integrated computing and drawing components.

History / Theory Sequence (12 credits)

ARCH 5100: History, Theory, Criticism 1 (4cr)
ARCH 5110: History, Theory, Criticism 2 (4cr)
ARCH 6680: History, Theory, Criticism 3 (4cr)

Technology Sequence (27 credits)

ARCH 5140: Structures 1 (3cr)
ARCH 5300: Material & Const. Systems (3cr)
ARCH 5310: Environ. & Eco. Systems (4cr)
ARCH-5150: Structures 2* (3cr)
ARCH-6320: Built Ecologies 1 (3cr)
ARCH-6380: Environmental Parametrics (2cr)
ARCH-6810: Research Des. Seminar (3cr)
ARCH 5360: Bldg. Systems & Environ. (4cr)
ARCH 5340: Materials and Enclosures (2cr)

Professional Practice (6 Credits)

ARCH 5380: Professional Practice 1 (2cr)
ARCH 5390: Professional Practice 2 (2cr)
ARCH 5330: Economics & Architecture (2cr)

Digital Constructs Sequence (4 credits)

ARCH 5160: Digital Constructs 1 (2cr)
ARCH 5170: Digital Constructs 2 (2cr)

Design Sequence (25 credits)

ARCH 5200: Grad. Architecture Design 1 (5cr)
ARCH 5210: Grad. Architecture Design 2 (5cr)
ARCH-6610: Grad. Architecture Design 3 (5cr)
ARCH 6620: Grad. Architecture Design 4 (5cr)
ARCH 6630: Grad. Architecture Design 5 (5cr)

Final Project (8 credits)

ARCH 6750: Final Proj. Research Seminar (3cr)
ARCH 6980: Graduate Final Project (5cr)

Professional Electives (8 credits)*

Professional Elective Courses (2 – 4 credits each) 8 cr

General Electives (10 credits)*

Elective Courses (2 – 4 credits each) 10 cr

* 6 credits combined total of professional and general electives must be 6000 level courses

Minors and Concentrations B.Arch students may elect to take

Within the School of Architecture students may take minors in:

Lighting*
Architectural Acoustics*
Built Ecologies* – though not designated minor, complementing core environmental courses with a semester at CASE is effectively a concentration

* Has a clear path for conversion to a co-terminal Masters Degree

Lighting Minor - The minor in lighting gives students the awareness and the confidence to extend their creative work through controlled use of light. The program covers human responses to light, both visual and non-visual, and the means by which light is produced and controlled. Interactions of light with form, texture, and color are examined in the contexts of daylight, electric lighting, and their integration.

Required courses include:

LGHT 4230 - Lighting Design Credit Hours: 4
LGHT 4770 - Lighting Technologies and Applications Credit Hours: 4
LGHT 4840 - Human Factors in Lighting Credit Hours: 3
LGHT 4940 - Advanced Individual Projects in Lighting Credit Hours: 1 to 6

Architectural Acoustics Minor - The minor in architectural acoustics is open to all Rensselaer students interested in advanced study focusing on the optimization of acoustical quality of performance spaces and other aurally sensitive environments. After completing the minor, the student will be well prepared for an entry level position dealing with acoustics issues in architectural practice, in acoustical consulting, or as a preparation for graduate studies in acoustics, for example in the Graduate Program in Architectural Acoustics at Rensselaer Polytechnic Institute. The program consists of 16 credits. Proficiency in Calculus I is necessary to comprehend the basics of architectural acoustics.

Required courses include:

ARCH 4840 - Architectural Acoustics 1 Credit Hours: 4
ARCH 4850 - Architectural Acoustics 2 Credit Hours: 4
ARCH 4860 - Applied Psychoacoustics Credit Hours: 3
ARCH 6840 - Engineering Acoustics Credit Hours: 2

ARCH 6890 - Aural Architecture Credit Hours: 3

Built Ecologies "Concentration" - Though not formalized as a concentration, students participating in a semester long program at CASE in New York City participate in a program which themes and structures a 6 credit studio together with courses in ARCH 4170.80 Environmental Parametrics (2 cr) (B.Arch) or ARCH 6380.80 Environmental Parametrics (2 cr) (M.Arch 1), ARCH 4580.80 Materials Systems and Productions (3 cr), other topics relating to sustainability in architecture and the environment. This opportunity is available to both B.Arch and M.arch 1students. (24 positions annually)

There are no designated concentrations in the B.Arch program

Civil Engineering Minor - Given the close link between architecture and civil engineering, a minor in civil Engineering has been created for architecture students, built on the foundation of the architecture technology sequence.

Required courses include:

CIVL 2670 - Introduction to Structural Engineering Credit Hours: 4
CIVL 4070 - Steel Design Credit Hours: 3
CIVL 4080 - Concrete Design Credit Hours: 3

Plus two additional courses from the following:

CIVL 2630 - Introduction to Geotechnical Engineering Credit Hours: 3
CIVL 4010 - Foundation Engineering Credit Hours: 3
CIVL 4150 - Experimental Soil Mechanics Credit Hours: 3
CIVL 4270 - Construction Management Credit Hours: 3
CIVL 4440 - Advanced Structural Analysis Credit Hours: 3

* Architecture students are waived from ARCH 4330 Structures 2

Many additional minors consisting of an approved 16-credit sequence in a particular discipline area and which are available to architecture students include:

- Architectural Acoustics Minor
- Astrobiology Minor
- Astrobiology Minor (Multidisciplinary)
- Astrobiology Minor for Biology Majors
- Astrobiology Minor for Chemistry Majors
- Astrobiology Minor for Geology Majors
- Astronomy Minor
- Astrophysics Minor
- Biochemistry/Biophysics Minor for Biology Majors
- Biochemistry/Biophysics Minor for Biomedical Engineering Majors

- Biochemistry/Biophysics Minor for Chemical Engineering Majors
- Biochemistry/Biophysics Minor for Chemistry Majors
- Biology Minor
- Biomedical Engineering and Management Minor
- Brain and Behavior Minor
- Chemistry Minor
- Chemistry Minor for Non-Chemistry Majors
- Chinese Language Minor
- Civil Engineering Minor
- Cognition Minor
- Cognitive Science Minor
- Communication Minor
- Community and Health Psychology Minor
- Computer and Systems Engineering Minor
- Computer Science Minor
- Economics Minor
- Electrical Engineering Minor
- Electronic Arts Minor
- Entrepreneurship Minor
- Environmental Engineering Minor
- Environmental Science Minor
- Finance Minor
- Games Studies Minor
- Gender, Science, and Technology Minor
- General Psychology Minor
- Geology Minor
- Human Factors Minor
- Human-Computer Interaction (HCI) Minor
- Hydrogeology Minor
- Industrial/Organizational Psychology Minor
- Information Technology and Web Science Minor
- Interschool Minor in Energy
- Interschool Minor in Energy (SHSS)
- Lighting Minor
- Literature Minor
- Logic, Computation, and Mind Minor
- Management Minor
- Marketing Minor
- Materials Science and Engineering Minor
- Mathematics Minor
- Music Minor
- Nuclear Engineering Minor
- Philosophy Minor
- Philosophy of Human Values and Society Minor
- Philosophy of Logic, Computation, and Mind Minor
- Philosophy of Science and Technology Minor
- Physics Minor
- Professional Writing Minor
- Psychology Minor
- Science, Technology, and Society Minor
- Social Psychology Minor
- Sport Psychology Minor
- Studio Arts Minor

M. Arch Concentrations
Concentrations in the M.Arch that are realized in the final year:

- Ecological Urbanism
- Environmental Parametrics

Concentrations in these areas are built on the foundation of a semester at CASE and realized in their third year Final Project Directed Research Studios.

Minors are not offered as a part of graduate studies

Minimum Number of Semester Credit Hours

Bachelor of Architecture (B.Arch) - The standard curriculum template requires students to take between 16 and 18 credits per semester. Students taking less than 12 credits in a given semester are classified as part-time students. Full time students may register for up to 20 credits in a given semester before special permissions for any overload is required. This is rarely granted. A sample template is provided below.

First Year		34 cr
	Fall	17 cr
	Spring	17 cr
Second Year		33 cr
	Fall	16 cr
	Spring	17 cr
Third Year		35 cr
	Fall	18 cr
	Spring	17 cr
Fourth Year		34 cr
	Fall	17 cr
	Spring	17 cr
Fifth Year		35 cr
	Fall	18 cr
	Spring	17 cr

A sample template of the B.Arch curriculum structure is provided below. Special circumstances such as dual majors, international program participation, etc., may involve some variation in the sequence with which the curriculum is fulfilled however, the required courses and meeting all the requirements of the curriculum are required for graduation.

First Year

Fall [17 cr]

- ARCH 2150 - The Ethos of Architecture *Credit Hours: 2*
- ARCH 2160 - Architectural Media *Credit Hours: 2*
- ARCH 2510 - Materials and Design *Credit Hours: 2*

- ARCH 2520 - Digital Constructs 1 *Credit Hours: 2*
- ARCH 2800 - Architectural Design Studio 1 *Credit Hours: 5*
- MATH 1500 - Calculus for Architecture, Management, and HASS *Credit Hours: 4*

Spring [17 cr]

- ARCH 2370 - Energy, Comfort and Ecology *Credit Hours: 2*
- ARCH 2530 - Digital Constructs 2 *Credit Hours: 2*
- ARCH 2810 - Architectural Design Studio 2 *Credit Hours: 5*
- ARCH 4090 - Architectural Case Studies *Credit Hours: 2*
- ARCH 4120 - Modernity in Culture, Civilization, and Architecture 1 *Credit Hours: 2*
- PHYS 1050 - General Physics *Credit Hours: 4*

Second Year

Fall [16 cr]

- ARCH 2330 - Structures 1 *Credit Hours: 3*
- (See footnote 3 below)
- ARCH 2350 - Construction Systems *Credit Hours: 2*
- ARCH 2540 - Digital Constructs 3 *Credit Hours: 2*
- ARCH 2820 - Architectural Design Studio 3 *Credit Hours: 5*
- ARCH 4100 - An Architectural Genealogy 1 *Credit Hours: 2*
- (See footnote 2 below)
- ARCH 4130 - Modernity in Culture, Civilization, and Architecture 2 *Credit Hours: 2*

Spring [17 cr]

- HASS Elective *Credit Hours: 4*
  (See footnote 1 below)
- ARCH 2360 - Environmental and Ecological Systems *Credit Hours: 4*
- (See footnote 3 below)
- ARCH 2550 - Digital Constructs 4 *Credit Hours: 2*
- ARCH 2830 - Architectural Design Studio 4 *Credit Hours: 5*
- ARCH 4110 - An Architectural Genealogy 2 *Credit Hours: 2*
- (See footnote 2 below)

Third Year

Fall [18 cr]

- HASS Elective *Credit Hours: 4*
- MATH Elective *Credit Hours: 4*
- ARCH 4330 - Structures 2 *Credit Hours: 3*
- (See footnote 3 below)
- ARCH 4560 - Materials and Enclosures *Credit Hours: 2*
- ARCH 4820 - Comprehensive Design Studio *Credit Hours: 5*

Spring [17 cr]

- ARCH 4150 - Contemporary Design Approaches *Credit Hours: 2*
- ARCH 4540 - Professional Practice 1 *Credit Hours: 2*

- (See footnote 4 below)
- ARCH 4740 - Building Systems and Environment *Credit Hours: 4*
- (See footnote 3 below)
- ARCH 4830 - Design Development Studio *Credit Hours: 5*
- BIOL 1010 - Introduction to Biology *Credit Hours: 3*
- BIOL 1015 - Introduction to Biology Laboratory *Credit Hours: 1*

Fourth Year

Fall [17 cr]

- Professional Elective *Credit Hours: 2*
- Professional Elective *Credit Hours: 2*
- HASS Elective *Credit Hours: 4*
- ARCH 4050 - Cities and Their Territories *Credit Hours: 2*
- ARCH 4550 - Professional Practice 2 *Credit Hours: 2*
- ARCH 4770 - Architectural Design Studio 5 *Credit Hours: 5*

Spring [17 cr]

- Professional Elective Credit Hours: 2
- Professional Elective Credit Hours: 2
- Elective *Credit Hours: 4*
- HASS Elective *Credit Hours: 4*
- ARCH 4780 - Architectural Design Studio 6 *Credit Hours: 5*

Fifth Year

Fall [18 cr]

- HASS Elective *Credit Hours: 4*
- Elective *Credit Hours: 4*
- Professional Elective *Credit Hours: 2*
- ARCH 4790 - Architectural Design Studio 7 *Credit Hours: 5*
- ARCH 4910 - Final Project Design Research Seminar *Credit Hours: 3*

Spring [17 cr]

- Science Elective *Credit Hours: 4*
- Free Elective *Credit Hours: 4*
- Professional Elective *Credit Hours: 2*
- ARCH 4590 - Economics and Architecture *Credit Hours: 2*
  ARCH 4920 - Final Project Design Studio *Credit Hours: 5*
  The degree requires 171 credit hours.

Note that studios are sequential with the exception of the Design Development Studio, which may be taken any time after Integrated Design Schematic Studio and before Final Project Design Studio. Students are required to complete 8 credits in Math, 12 in Science, and 20 in Humanities, Arts, and Social Sciences from an extensive list of course offerings (see Institute core requirements for greater detail). In addition, students have 12 credits of professional electives, and 12 credits of free electives which may be

used to further focus on a concentrated area of study, pursue a minor or dual major, or as a means of further broadening exposure to a range of disciplines.

Footnotes:

1. *HASS Institute communications intensive requirement (see Class Hour Schedule for approved courses); Final Project Design Studio will fulfill the Architecture major communications intensive requirement.*
2. *Four credits of the HASS core requirements are embedded within the Architectural Genealogy sequence: ARCH 4100 and ARCH 4110.*
3. *Four credits of the Institute core Science requirements are embedded within the technology sequence: ARCH 2330, ARCH 2360, ARCH 4330, and ARCH 4740.*
4. *Taken in the same semester as ARCH 4830.*

Master of Architecture (M.Arch) - The standard curriculum template requires students to take between 16 and 17 credits per semester. Students taking less than 12 credits in a given semester are classified as part-time students. Full time students may register for up to 20 credits in a given semester before special permissions for any overload is required. This is rarely granted. A sample template is provided below.

First Year 34 cr
Fall 17 cr
Spring 17 cr

Second Year 33 cr
Fall 16 cr
Spring 17 cr

Third Year 33 cr
Fall 16 cr
Spring 17 cr

First Year

Fall [17 cr]

- ARCH 5100 - History, Theory, Criticism 1 *Credit Hours: 4*
- ARCH 5140 - Structures 1 *Credit Hours: 3*
- ARCH 5160 - Digital Constructs 1 *Credit Hours: 2*
- ARCH 5200 - Graduate Architecture Design 1 *Credit Hours: 5*
- ARCH 5300 - Materials and Construction Systems *Credit Hours: 3*

Spring [17 cr]

- ARCH 5110 - History, Theory, Criticism 2 *Credit Hours: 4*
- ARCH 5170 - Digital Constructs 2 *Credit Hours: 2*
- ARCH 5210 - Graduate Architecture 2 *Credit Hours: 5*
- ARCH 5310 - Environment and Ecological Systems *Credit Hours: 4*
- ARCH 5330 - Economics and Architecture *Credit Hours: 2*

Second Year

Fall [16 cr]

- ARCH 5150 - Structures 2 *Credit Hours: 3*
- ARCH 6320 - Built Ecologies 1 *Credit Hours: 3*
- ARCH 6610 - Graduate Architecture Design 3 *Credit Hours: 5*
- ARCH 6380 - Graduate Environmental Parametrics *Credit Hours: 2*
- ARCH 6810 - Research Design Seminar *Credit Hours: 3*

Spring [17 cr]

- Professional Elective *Credit Hours: 4*
- ARCH 5360 - Building Systems and the Environment *Credit Hours: 4*
- ARCH 6620 - Graduate Architecture Design 4: *Credit Hours: 5*
- ARCH 6680 - History, Theory, Criticism 3 *Credit Hours: 4*

Third Year

Fall [16 cr]

- General Electives *Credit Hours: 4*
- ARCH 5380 - Professional Practice 1 *Credit Hours: 2*
- ARCH 5340 - Materials and Enclosures *Credit Hours: 2*
- ARCH 6630 - Graduate Architecture Design 5: *Credit Hours: 5*
- ARCH 6750 - Final Project Design Research Seminar *Credit Hours: 3*

Spring [17 cr]

- Professional Elective *Credit Hours: 4*
- General Electives *Credit Hours: 6*
- ARCH 6948 - Graduate Final Project *Credit Hours: 5*
- ARCH 5390 - Professional Practice 2 *Credit Hours: 2*

Off-Campus Programs, Course Requirements, and Length of Stay

(See Section II.1.2 for Description of Facilities and Resources)

1. Study Abroad Programs - International study is a defining aspect of Rensselaer's architectural education. The School of Architecture offers international semester long programs of study in Italy, India, and China. These programs are fully integrated with the requirements of the undergraduate degree and have been established in three world cities that will challenge and help to define the future of architecture. Each of these programs is open, by competitive application, to students in their fifth to eighth semester. Limited numbers of students (B.Arch.) are selected each year on the basis of academic accomplishment. In addition to a Rensselaer faculty member who travels with and directs the program, adjunct faculty in the host city or institution also provide instruction. There is a program fee for participation in each of the international programs, which are described briefly below.

A description of the facilities can be found in section I.1.2 Physical Resources.

Italy Program— Fall semester annually (semester long) - The Italian studies program includes a design studio based part of the time in Turin and part of the time in Rome, an examination of the architectural development of Turin and Rome, courses in Italian language and culture, and travel throughout Italy. The program seeks to deepen appreciation of historic cities and the layers of culture that have played a seminal role in the development of Western culture and architecture. The Turin workshop component involves collaboration with students and faculty from the Polytechnic of Turin. The courses that the students take include studio [5 or 6 cr] and the following courses:

ARCH 4964.50 Professional Elective 2 cr
ARCH 4966.50 Urban & Arch History of Rome 4 cr
ARCH 4972.50 Art and Culture in Italy 3 cr

Plus one of the following:

ARCH 4973.50 Historic Preservation 3 cr
ARCH 4975.50 Modern & Contemporary Rome 1870-Present 3 cr

India Program— Alternate spring semesters (semester long) - The program is based in the School of Architecture CEPT at Ahmedabad, India, a highly respected school for the study of architecture and urbanism. The program for B.Arch students offers joint studios in design with CEPT faculty and students, and travel through northern and southern India. It offers students the opportunity to travel, study, and apply the lessons learned from Indian architecture and history and theory within the context of a major research center. The courses that the students take include studio [5 or 6 cr] and the following courses:

ARCH 4965.70 India Discovery 4 cr
ARCH 4970.70 Architecture & the Urban Condition in India 2 cr
ARCH 4974.70 The Culture and Civilization of India 2 cr
ARCH 4976.70 Topics in Architecture 2 cr

China Program— Alternate spring semesters (semester long) - The semester in Shanghai is based at the School of Architecture at Tongji University, one of the great institutions of China. The program for B.Arch students offers joint design studios with Chinese faculty and students, courses in Chinese history and culture and short and long-term architectural study tours through central China. The courses that the students take include studio [5 or 6 cr] and the following courses:

ARCH 4966.60 Chinese Architecture and Urbanism 4 cr
ARCH 4974.60 Chinese Lang & Culture 4 cr
ARCH 4975.60 Calligraphy painting 2 cr

In addition, the School of Architecture offers many not for credit short-term summer and between-semester study programs to places of special architectural interest. In recent years, these have included visits to Shanghai, Hong Kong, Shenzhen, London, Paris, Berlin, Stuttgart, Tokyo, Osaka, Lausanne, Buenos Aires, and San Paolo, Madrid, Seville, and Barcelona.

2. **New York Program at CASE**— M.Arch: Fall semesters; B..Arch: Spring Semesters (semester long) A semester long program located in New York City is based at Rensselaer's Center for Architecture Science and Ecology [CASE] hosted by the global architecture firm Skidmore, Owings & Merrill's (SOM). The program allows both B.Arch (spring semesters) and M.Arch students (fall semesters) to study in a collaborative interdisciplinary research environment focused on the development of advanced next-generation building systems and sustainable technologies. The courses that the students take include studio [5 or 6 cr] and the following courses:

Master of Architecture (fall only):
ARCH-5150: Structures 2* (3CR)
ARCH-6320: Built Ecologies 1 * (3CR)
ARCH-6380: Environmental Parametrics (2CR)
ARCH-6810: Research Des. Seminar (3CR)
* taken via real-time two-way A/V distance delivery between NYC and Troy campus

Bachelor of Architecture (spring only)

ARCH 4170.80 Environmental Parametrics 3 cr
ARCH 4580.80 Materials Systems and Productions 3 cr
ARCH 4936.80 Research Investigations 4 cr

Plus one of the following:

ARCH 4963.80 Built Ecologies 2 3 cr
ARCH 4964.80 Advanced Integrated Systems Development 4 cr

Other Degree Programs

Bachelor of Science Building

4-year 129 credit pre-professional degree

Master of Architecture II (Post-Professional Degree)

1-year, 30 credit post-professional

(for students with a prior professional architecture degree or international equivalent)

- The catalog and promotion material read as follows: *"The M.Arch.II is not a professional degree and will not lead to the establishment of a license to practice architecture in the United States or an NCARB certificate."*

- This degree is in the process of being changes to an M.S. in Architecture (see below)

Master of Lighting

1-year, 30-credit degree for qualified applicants with a wide variety of backgrounds (applicants may or may not have practical experience in the field of lighting)

Master of Science in Architectural Science

1-year, 30 credit degree for qualified applicants with a variety of backgrounds depending on the concentration. For the Architectural Acoustics concentration, the degree is designated for applicants with backgrounds in engineering, architecture, physics, music, computer science, recording engineering, and other areas. For the Built Ecologies concentration, applicants from a wide variety of backgrounds are eligible.

Concentrations in:
- Architectural Acoustics
- Built Ecologies
- Lighting

Ph.D. in Architectural Science

72 credit degree with a dissertation for qualified applicants with a variety of backgrounds depending on the concentration. For the Architectural Acoustics concentration, the degree is designated for applicants with backgrounds in engineering, architecture, physics, music, computer science, recording engineering, and other areas. For Built Ecologies, the degree option is targeted toward candidates with a professional degree in architecture or engineering and qualified candidates with degrees in related design fields of science and the humanities, including but not limited to Industrial and Urban Design. For Lighting, applicants from a wide variety of backgrounds are eligible.

Concentrations in:
- Architectural Acoustics
- Built Ecologies
- Lighting

Online Learning Formats - To make opportunity for second year M.Arch students to participate in the Built Ecologies program at CASE in New York City the ARCH 5150 Structures 2 course is synchronously taught at the Troy and CASE location. Using Rensselaer's DCC337 facility and tech support to establish a two-way audio/video link, downstate students are able to participate in real time. Multiple cameras focus on the professor, students, the overhead and/or work he wishes to show. CASE based students can ask question through a student helper present in the room. They travel upstate for the hands-on component comprised of structural model-making and in-class testing to failure on the Instron Testing Machine located in the Fabrication Laboratory. They do final project presentation through video stream from NYC.

DCC337 – Real-time, Two-Way Connect

DCC337 – Professor Station

The graduate-level Built Ecologies 1 course (no SPC's associated) also benefits from the participation of both upstate and downstate students through a real-time two-way delivery of the courses. These courses are taken by the B.Arch and M.Arch students as professional electives.

Progress toward changing the title of the M.Arch II

The School passed a vote of the curriculum committee to change the curriculum and title of the M.Arch II program to an M.S. in Architecture. The recommendation was approved by the Dean, passed by the Faculty Senate Curriculum Committee and following a review by the Office of Graduate Education, has moved to the President's Office for signature and will be forwarded momentarily to New York State Education Department.

Part Two (II) Section 3 – Evaluation of Preparatory Education

Bachelor of Architecture Admission Requirements and Decisions - At the undergraduate level the School of Architecture offers a five-year Bachelor of Architecture degree. Approximately 68-72 students are admitted directly into the program each year. As a professional program designed for those ready to begin architectural study in the first year, admissions decisions are based on the following criteria: high school background including a high standard of accomplishment in science and math, overall academic excellence, creativity (demonstrated through a portfolio of work in the arts and other associated areas), and clear evidence of an inspired individual committed to receiving a rigorous exploratory and comprehensive education.

The School strongly encourages visiting the campus and the Greene Building, home of the School of Architecture, along with a faculty interview. Architecture candidates are required to submit a creative portfolio with their application. The School of Architecture prefers that applicants use the online portfolio system *https://rpi.slideroom.com/* to upload digital files. A digital submission makes it easier for all applicants to format their material and accelerates the evaluation process for prospective students applying as freshmen or transfers into the B. Arch. Professional Program. Students with unusually strong academic profiles may be reviewed without the portfolio (GPA of 3.5) but such cases are exceptionally rare and in all cases a portfolio is strongly preferred. For portfolio requirements visit *http://admissions.rpi.edu/undergraduate/visit/tours.html.*

The Institute's Admissions Office handles the admission of all undergraduate and graduate students. A comprehensive listing of requirements is available at http://www.rpi.edu/dept/admissions/index.html. In

addition, two Architecture faculty members rate the portfolios (http://www.arch.rpi.edu/apply/undergraduate/) of all undergraduate applicants. An averaged portfolio "grade" is provided to the Admissions Office to be factored into the admission decision.

Master of Architecture Program Admission Requirements and Decisions - At the graduate level the School of Architecture offers a three-year Master of Architecture degree. Approximately 10 students are admitted directly into the program each year. As a professional program designed for those who have completed a non-professional Bachelor's degree, the admissions process is based on a combination of educational background (Bachelor's degree), a personal statement and three letters of recommendation by former professors and or professionals familiar with the candidates' history and potential for success at the graduate level. Additionally, the design portfolio plays a central role in the determining the acceptance of a candidate's application. Portfolios and all application material are reviewed through an online system used by the School of Graduate Education at Rensselaer. Finally, the Institute policy requires the completion of the G.R.E. with top percentile scores. Candidates must have a minimum cumulative GPA of 3.0 from their undergraduate Institution. International students from non-English speaking countries must complete the TOEFL with top percentile scores and in some cases participate in an 'English as a Second Language' interview with non-architecture faculty councilors.

The Process by which Preparatory or Pre-professional Education is Evaluated - Incoming freshmen may obtain advanced placement or academic credit in one of the following ways: 1) Advanced Placement Exams, which are given by the College Entrance Examination Board; 2) Transfer Credit, which is granted for work done at an accredited college prior to admission to Rensselaer and was not applied to the students high school degree completion requirements; or 3) completion of an acceptable advanced-level course in high school that was not applied to the students high school degree completion requirements. Incoming freshman may use up to 32 credits of AP/transfer credits. Typically, advanced placement credit is given for general education requirements, not for Architecture studio or other architecture courses responsible for NAAB student performance criteria. In some cases, a student may receive academic credit for college-level proficiency as established by a validation examination. Students wishing to do so must contact the Registrar's Office and the Advising & Learning Assistance Center for procedures and necessary forms.

Transfer Students - The School of Architecture welcomes students who have completed general studies and/or architecture coursework at other schools to apply as transfer students to Rensselaer. Just as it is for applicants to the first year, the credentials of each student must meet the standards of the Institute and School and are reviewed individually prior to admission. Upon acceptance, transfer students are placed at an appropriate level in the professional program based on a review of their transcript, course descriptions, and portfolio of work. Each course submitted for transfer credit is evaluated by the appropriate faculty in the department responsible for that particular content area on the basis of the Institution attended, contact and credit hours, the course description, content areas covered, and grade received. That faculty member makes a decision whether full or partial credit will be given and whether a specific required course in the degree program could be waived, or if credits transferred in will count for elective or professional elective credits. Admissions submits the information to the registrar's office to update the student's record. For Architecture courses, the structures professor familiar with the course content and related student performance criteria reviews structures courses, the faculty member in charge of the environmental courses reviews those courses, the senior faculty member responsible for the History/Theory/Criticism courses reviews Architectural History courses and the Associate Dean, who teaches technology integration and the integrated studio and is familiar with the SPC's associated with the courses, evaluates any technology and design courses.

Transfer students entering Architecture from unrelated degree programs typically begin in the summer when they can take the first two studios in an intensive format. In this way, they (if they are rising

sophomores) catch up in the design studio sequence and are able to enter the second year studio in the fall. Transfer credits for these students are typically not in architecture.

Transfer Credits - In all cases students applying for 'advance standing' in the Master of Architecture program must be admitted into the program through the admission requirements listed above. 'Advance Standing' is considered only for students with a degree from a pre-professional architecture program (typically known as a 4+2 program) from a NAAB accredited school in the United States. Rarely, a candidate may be considered who has completed a rigorous Bachelor of Technology in Architecture degree or a B.S. in Architecture. In all cases, the school evaluates the courses being considered for content equivalency and to insure that general education requirements and prerequisite SPC's were met. The process of evaluation is divided into two categories, design courses and technical + HTC courses.

The evaluation of the applicant's transcript and additional course descriptions provided by the student to the SoA provide the basis for evaluation of these courses. In each case, the faculty member/coordinator responsible for the course reviews the incoming student's transcript and course description, along with examples of work produced in the course where necessary.

Design Courses:

Design courses are reviewed by the Master of Architecture's program Director and the Director of Graduate Programs with respect to the following student performance criteria on the basis of: the degree granting Institution, contact and credit hours, the course description, content areas covered, grade received and an evaluation of the applicant's portfolio. The review serves as the basis for assigning equivalency. In addition, many of the SPC's covered in these courses are also reinforced in subsequent design studios in the M.Arch. program.

Arch 5200 Graduate Architecture Design 1	A.3: Investigative Skills A.4: Architectural Design Skills A.5: Ordering Systems A.6: Use of Precedents A.8: Cultural Diversity & Social Equity B.1: Pre-Design B.2: Site Design
Arch 5210 Graduate Architecture Design 2 (formerly Arch 2630)	A.4: Architectural Design Skills A.5: Ordering Systems A.6: Use of Precedents B.2: Site Design

Technical / Professional courses:

Technology and Professional courses are reviewed by the area coordinators of the Structures, Building Systems and Pro-practice courses with respect to fulfillment of the associated SPC's on the basis of the degree granting Institution, contact and credit hours, the course description, content areas covered, and grade received.

Arch 5140: Structures 1	B.5: Structural Systems
Arch 5300: Material and Construction Systems	B.7: Building Envelope Systems and Assemblies B.8: Building Materials & Assemblies
Arch 5310: Environ. and Ecological Systems	B.6: Environmental Systems
Arch 5330: Economics and Architecture	no associated SPC's

Arch 5160: Digital Constructs 1	no associated SPC's
Arch 5170: Digital Constructs 2	no associated SPC's

History Courses:

History/Theory/ Criticism courses are reviewed by the area coordinator of the History/Theory courses with respect to fulfillment of the associated SPC's on the basis of the degree granting Institution, contact and credit hours, the course description, content areas covered, and grade received.

Arch 5100: History, Theory, Criticism 1	A.7: History and Global Culture A.8: Cultural Diversity & Social Equity
Arch 5110: History, Theory, Criticism 2	A.7: History and Global Culture A.8: Cultural Diversity & Social Equity

Course equivalency approval is recorded and filed with the incoming student's Plan of Study. A record of the transcript, course descriptions are maintained in the students' Plan of Study file. Additionally a record of the review and verification of the course descriptions and equivalency evaluation signed by the area coordinators are recorded in this file.

Part Two (II) Section 4 – Public Information

The required list of URL's noted in the APR is in Section 4, on page 114.

Bachelor of Architecture (B. Arch) Curriculum - (catalog description)

http://catalog.rpi.edu/preview_program.php?catoid=13&poid=2787&returnto=310

This five-year undergraduate professional program is a first professional degree accredited by the National Architectural Accreditation Board. The program is for a limited number of qualified students committed to the study of architecture. These students are admitted directly to the professional degree program and begin studies in architecture in the first year.

The National Architectural Accreditation Board (NAAB) accredits the Rensselaer School of Architecture's Bachelor of Architecture program and its Master of Architecture program. Pursuant to the requirement of the NAAB, the following statement is included in the catalog:

In the United States, most state registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional degree programs in architecture, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture. A program may be granted a 6-year, 3-year, or 2-year term of accreditation, depending on the extent of its conformance with established educational standards.

Doctor of Architecture and Master of Architecture degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree that, when earned sequentially, constitute an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree.

Rensselaer Polytechnic Institute, School of Architecture offers the following NAAB accredited degree programs:

B.Arch. (171 undergraduate credits)
M.Arch I (pre-professional Degree + 112 credits)

Next accreditation visit for all programs: 2016

The above can also be found on the School of Architecture web site:
http://www.arch.rpi.edu/school/accreditation-statement/

Bachelor of Architecture - (catalog description)

http://catalog.rpi.edu/preview_entity.php?catoid=13&ent_oid=694&returnto=308

The five-year Bachelor of Architecture (B.Arch.) curriculum centers on the design studio and culminates in a year-long research and design project. Theoretical, technological, and computational and historical issues are progressively integrated into studio projects beginning in the first year. Projects range in scale and form, but relate to issues in contemporary culture with a focus on globalization and urban contexts.

This degree program is described in detail below.

Students in the School of Architecture undergraduate program are required to complete courses in the sciences, humanities, arts and social sciences as part of the Institute core requirements. The core courses are structured to provide exposure and breadth of education. A series of professional electives and free elective courses provide students the opportunity to pursue specific interests in greater depth, to minor, or to pursue other special interests.

In addition to Institute-wide academic regulations outlined earlier in this catalog, the following pertain to the bachelor's program in architecture:

Advancement in Design—Students not passing a required design course (including Final Project 1 and 2) may not advance to the next course in the design sequence. The architecture faculty will review students earning grades of D or lower in required design courses. A student earning a D or lower in any subsequent required design course must either repeat the course or take another course specified by the faculty before advancing to the next course in the design sequence. Students who fail to earn a grade of C or better in the repeated or specified course, or who earn a third grade of D or lower in design, may not continue in the design sequence. A student earning an F in any course must repeat the course in addition to completing any remedial actions specified by the faculty after a second grade of D or lower in a required design studio.

Grades of "IP"—In Final Project 1 or 2 IP grades will convert to a grade of "F" three years after the issue of the "IP" grade. Students applying for readmittance to complete Final Project 1 or 2 after three years will be required to restart the three-course, 12-credit final project sequence (including Methods Seminar (1 credit). (This regulation applies to students who took Final Project 1 and/or 2 prior to 2009).

Retention of Student Design Work—All student drawings and models produced as part of the instructional program are the property of the Institute. The School of Architecture reserves the right to obtain any or all work produced by the students in the school for a temporary or permanent time period.

Rensselaer's B.Arch. program incorporates and interconnects the following important elements:

http://catalog.rpi.edu/preview_program.php?catoid=13&poid=2787&returnto=308

Design—Design and the design studio form the core of all architecture degree programs. The design studio brings together the many aspects of architecture and presents a wide range of design issues, beginning with the development of the tools, skills, and judgments that underline the production of architecture.

The skills area emphasizes that the hand is as important as the computer in the development and representation of ideas. The ability to freely manipulate space, surface, structure, and texture is central to the formation of architecture. The tools component develops confidence in the technologies that form architecture and are essential support to creativity. Finally, the judgments aspect is developed through projects premised on the continual evolution of architecture as a manifestation of the social, economic, political, and technological forces within a culture. All design studios draw broadly on the exceptional range of urban and architectural contexts near the campus; from the historic towns in upstate New York to great cities of the region such as New York, Boston, Montreal, and Philadelphia.

In the design studio there are no singular, provable, or perfect answers to any of the problems presented. Students explore and develop their design proposals based on their growing knowledge of architecture and their emerging abilities. Early semester-long studios introduce students to a full-range of issues, skills, and judgments encountered in design and initiate and reinforce design as critical inquiry. The remaining studios focus on significant concerns in architecture. They are "vertical" in that they include students in different class years, and present choices of projects and faculty. Among these are the Comprehensive Design Studio and the Design Development Studio, in which projects are subjected to detailed structural, mechanical, construction materials, and professional practice considerations.

History and Theory—A required multi-course sequence presents the diversity of architectural works and ideas relative to the contexts within which architecture emerges and exposes students to key historical and theoretical issues in the discipline. Following this sequence, students may take additional advanced architectural history/theory electives as a part of their professional or free electives.

Technology and Building Science—Technological issues are introduced from the beginning as essential to the conception and creation, delivery, and performance of architecture. New technologies can also be understood as generative of both form and inhabitable space. A series of six required technology courses considers both qualitative and quantitative views of building technologies. These include statics and strength of materials; basic structures and framing; design of wood, steel, and concrete structures; criteria for selecting building materials and systems; environmental and ecological systems; building systems, including heating, ventilation, air conditioning, plumbing, and electrical systems; sensory environments, including the luminous, acoustical, and tactile dimensions of space; codes and contract documents. Following this sequence, students may take additional advanced technology and building science electives as a part of their professional or free elective selections. Integration of technological considerations is central to many of the studios with a focused emphasis on integrating building technologies especially in the required upper level Design Development Studio.

Computational Design—Computational proficiency is central to the future of architecture. From the first year, students are able to expand their knowledge and skill through course work, which integrates computing concepts and applications—in some cases within the design studios—and through independent experimentation in the many computer labs at the School and Institute. In addition to the general computation labs, the School offers high-end multimedia environments within the many design studios. These labs are also complimented with a commitment to equipping the fabrication center with the latest and most sophisticated tools for fabrication and physical prototyping of design work. Currently available is a range of equipment varying from a 3axis CNC mill, two laser cutters, a 3D printer, and vacuum forming as well as access to water and plasma cutters. Students have access to the latest in three-dimensional design software, critical visualization tools, and more specific evaluation based

software.

These elements are provided through both required courses as well as many professional electives and topics in such areas as architectural and urban history and theory, technology, computing, building economics, computational design, community design, practice and management, architectural lighting, and acoustics in architecture. Professional degree students must complete at least 12 credits from these offerings by either building on a specific interest or by sampling the breadth and diversity inherent in the field. In addition to regularly offered electives (described in the back of this catalog), the faculty offers a number of topics or experimental courses as professional electives. Sample courses include, but are not limited to:

Advanced Ceramic Composite Lab
Advanced Architectural Modeling
Analogical Models: Contemporary Art Theory and Practice
Architectural Acoustics 1 and 2
Between Dissociation and Merging
Biological Habitat
Built Ecologies 1
Built Ecologies 2
Duchamp Sem: Anarchism Umped
Extreme Drawing
Eyes to the Ground - Spatial Studies in Counter Culture
Human Factors in Lighting
Indigenous Landscape Systems
Informal Urbanism
Latin American Architecture
Lighting Design
Lighting Technologies and Applications
Living Versus Artificial Living
Materials Systems and Productions
Modular Thinking
New Evolutions
Next Nature Next Architecture
Performative Morphologies
Procedural Materialism: Emerging
Satorial Tectonics
Seminar in Sensory Culture
Social Ecology in Architecture
Surface as Structure as Form
Sustainable Building Design Metrics
Techniques of Digital Fabrication
The Arch of the Screen: Relationships between Film and Architecture
Tool Theory
Twisted Siblings - Examinations of Contemporary Relationships Between Painting and Architecture
The Man Next Door: Alfred Hitchcock and the Architecture of Fear
Towards a Social Ecology in Architecture
Urban Data Analysis and Visualization

The five-year B.Arch. program concludes with a year-long individually developed and comprehensive final project in the context of optional research studio and thematic contexts provided by faculty. The first semester of the final project integrates a Research Methods seminar. An integrated design research phase continues throughout the first and the second semesters.

The final project is an opportunity to develop a point of view about architecture and its place in the world; to question conventions, habitual responses, and routine approaches to architectural design; and to investigate issues that the student sees as significant to architecture.

Bachelor of Architecture (web description http://www.arch.rpi.edu/academic/undergraduate-barch/)

The undergraduate professional program is five years in length and leads to the Bachelor of Architecture, a first professional degree accredited by the National Architectural Accrediting Board (NAAB). The students are highly qualified and undertake their architectural studies from the very beginning of their first year. Situated within the broader context of Rensselaer, the School of Architecture also draws widely

upon other professional programs to build a collaborative interdisciplinary approach to design. Upon admission there are no further junctures in the program that require additional admission decisions.

Equipment, Supplies, and Travel: Most studio courses do not require textbooks, but rely heavily on software, printing, and modeling and students should anticipate costs associated with the purchase of materials. First-year students will have an opportunity to purchase a basic kit with the tools, etc. needed for their design studio. A technology fee is assessed to cover some, but not all, of the software and services provided to the students. Travel and field trips to nearby cities are also a regular and strategic part of the design curriculum. Students should also be prepared to cover costs associated with regional travel.

III. 1.1. Annual Statistical Reports:

See http://www.arch.rpi.edu/naab/41-Statistical-Reports-Certification-Letter.pdf

III.2 Interim Progress Reports

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Rensselaer's Division of Human Resources Site Map, http://hr.rpi.edu/siteMap.do.

Course Description Forms http://www.arch.rpi.edu/naab/43-CourseDescriptionForms.pdf

Studio Culture Policy http://www.arch.rpi.edu/naab/44-StudioCulturePolicy.pdf

Self-Assessment Policies and Objectives - Self-assessment at Rensselaer is highly organized at multiple levels and tied to outcomes with the objectives of realizing our mission, preventing mission creep, maintaining pace and relevance with respect to changing contexts (cultural, social, intellectual, professional, knowledge, etc.) and continual improvement.

Online Digital Measures Procedure - Self-assessment occurs at every level from individual faculty members, to courses, and programs. Each semester, as outlined in I.1.5 long-range planning, individual faculty members are required to self-assess their teaching and course(s) through an online system [Digital Measures]. For faculty whose course outcomes are linked to program outcomes (in Architecture's case, many are related to the NAAB SPCs) this is particularly important. During the syllabus preparation time faculty receive an individualized communication reminding them of those program level outcomes that are linked to their course. Upon entering Digital Measures [DM] they will see the program level outcomes that are associated with their course and are expected to reflect them in their syllabi through

course learning outcomes that are associated with assignments and evaluation (grading) criteria. Upon completion of the course, and after receiving a summary of student evaluations, faculty members are required to complete a course assessment form addressing each learning outcome inside the Digital Measures system and to propose what actions they will take the next time the course is offered. Achievement of program level outcomes is assessed periodically through the curriculum committee, and program faculty together with the Dean with respect to the programs' mission and multi-year planning objectives. The review and assessment of the focus and pedagogy is also periodically undertaken though curriculum reform initiatives.

Yearly Faculty Performance Evaluations - The Dean annually executes a performance evaluation of each full-time faculty member in the areas of teaching, research/scholarship, and service. Following the development and submission of a self-assessment, faculty members meet individually with the Dean to discuss their progress in each of the areas. They later receive a written summary of his evaluation.

Student –Course and Instructor Evaluations - In addition to the Digital Measures program that allows faculty members to review and reflect on the successes or areas that need improvement in their courses, the Institute also employs student course and instructor evaluations. Prior to giving the students the opportunity to log on and fill out the course evaluation, the faculty are given the opportunity to include categories in the evaluation that are specific to each of the courses that they teach. Evaluations forms are given electronically to students near the end of each semester. The results of the course evaluations are shared with the individual faculty member after the semester has concluded. The statistical summary of the course evaluations, which rates the teaching and the course separately, is generally seen as valuable.

Institutional and Program-Level Assessment - Institutional and program-level assessment is ongoing through annual performance planning of all portfolios including the five schools. Program level assessment is triggered by the Institute Assessment Committee. It requires all schools and departments develop and submit program level outcomes for each degree-granting program. Subsequently, program level re-assessment is triggered by an accreditation cycle such as ABET, or NAAB, or may be voluntarily undertaken as was the case for the B. Arch and M. Arch programs in 2013 as outlined above in I.1.5 Long Range Planning. On a ten-year cycle the Institute is reviewed by Middle States Commission on Higher Education with a focus on course learning, program and Institutional level outcomes and assessment.

Academic Integrity (e.g., cheating and plagiarism)
http://doso.rpi.edu/update.do?artcenterkey=676

"Intellectual integrity is critical to the foundation of all academic work. Academic dishonesty therefore, is considered a serious matter and will be addressed as such," says the Institute's official policy (see (http://www.rpi.edu/dept/provost/Dishones.pdf). The Institute takes academic integrity very seriously, and addresses the matter in both faculty and student policies and procedures. The Institute policy, which has been in effect since 1993, defines academic integrity and provides procedures for faculty to respond to cases of perceived student academic dishonesty.

In addition, the Dean of Students Office addresses Academic Integrity on its website (see http://doso.rpi.edu/update.do?artcenterkey=676). The website explains that students found responsible for committing academic dishonesty may be subject to grade penalties and/or disciplinary action as described in the 2014-2016 Rensselaer Handbook of Student Rights & Responsibilities (http://www.rpi.edu/dept/doso/resources/judicial/docs/2014-2016RPIHandbookofStudentRightsandResponsibilitiesAUGUST2014.pdf). The Student Handbook describes various types of academic dishonesty, including Academic Fraud, Collaboration, Copying, Cribbing, Fabrication, Plagiarism, Sabotage, and Substitution, as well as the procedures in which faculty and students engage once an accusation of dishonesty has been made. The website includes a form to

be filed with the Dean of Students when making a report of alleged dishonesty. A chart showing the process for addressing dishonesty violations is also provided.

The Office of Graduate Education also addresses Academic Integrity in its publication, *The Rensselaer Graduate Student Supplement to the Rensselaer Student Handbook of Rights & Responsibilities,"* (see http://rpi.edu/dept/grad/docs/The%20Graduate%20Student%20Supplement%20.pdf). The *Supplement* discusses student responsibility, scholarly misconduct, and procedures for dealing with students accused of academic dishonesty. The Supplement includes notices (page 8) that "…any student enrolled at Rensselaer who is suspended or expelled for violation of the grounds for disciplinary action as stated in the Rensselaer Handbook of Student Rights and Responsibilities will have such action noted on the student's official Rensselaer transcript and include the effective date of the action. In either case, suspension or expulsion, the notation shall remain permanently on the student's transcript."

The *Supplement* also discusses expectations for faculty and course supervisors to take actions to prevent violations of academic integrity. The *Supplement* says (page 8), " The instructor or research advisor is expected to outline his or her particular standards in courses and scholarly pursuits in which either the instructor or student considers proper definition of scholarly misconduct to be open to interpretation. An example for which such definition seems particularly necessary would be collaboration on out-of-class assignments."

In the School of Architecture and throughout the Institute, faculty are required to add the following statement onto their course syllabi, which are distributed to students:

> "Student-teacher relationships are built on trust. For example, students must trust that teachers have made appropriate decisions about the structure and content of the courses they teach, and teachers must trust that the assignments that students turn in are their own. Acts that violate this trust undermine the educational process. The Rensselaer Handbook of Student Rights and Responsibilities defines various forms of Academic Dishonesty and you should make yourself familiar with these. In this class, all assignments that are turned in for a grade must represent the student's own work. In cases where help was received, or teamwork was allowed, a notation on the assignment should indicate your collaboration."

Academic Integrity Links

Dean of Students Office, policy and "Case Summary and Report Form."

> http://www.rpi.edu/dept/doso/resources/policies/Fillable2015-2016Version2AcademicIntegrityBrochure.pdf

Office of Graduate Education website, *The Rensselaer Graduate Student Supplement*

> http://rpi.edu/dept/grad/docs/The%20Graduate%20Student%20Supplement%20.pdf

Dean of Students Office, Information on Academic Integrity from the *2014-2016 Rensselaer Handbook of Student Rights and Responsibilities.*

> http://doso.rpi.edu/update.do?artcenterkey=676

Provost's Office, Institute Academic Dishonesty Policy

http://www.rpi.edu/dept/provost/dishones.pdf

2014-2016 Rensselaer Handbook of Student Rights & Responsibilities

http://www.rpi.edu/dept/doso/resources/judicial/docs/2014-2016RPIHandbookofStudentRightsandResponsibilitiesAUGUST2014.pdf

Information Resources Policies including Collection Development - Methodologies for meeting the needs of Rensselaer's programs, faculty, researchers and students include:

Books

1. Purchasing individual print and electronic books based on subject librarian selections, patron requests and aggregated book subscription packages. Electronic book titles displayed in RensSearch, the Rensselaer Libraries website and online catalog, include thousands of publisher titles that are not owned by the Rensselaer Libraries but which, after a patron browsing them for 5 or 10 minutes results in a transaction triggering either a short-term loan or purchase of the electronic book. From the patron's perspective, the process appears to be just another electronic book in the catalog. The Rensselaer Libraries are increasingly reallocating portions of the book budget from librarian-selected to Patron-Driven Acquisition (PDA) eBooks.

2. Providing loan access via the Rensselaer Libraries' website and online catalog (RensSearch) linkage to ConnectNY, a resource-sharing consortium of 18 private New York State institutions of higher learning. The members of this consortium have agreed to use library system middleware that provides an online, merged catalog of the 18 ConnectNY institutions' library book catalogs containing over 9 million book titles. This consortium also provides a courier service that continually routes books between member libraries in order to provide access to the books in 2 to 4 business days. Pratt Institute, which just joined ConnectNY this year, has a School of Architecture.

3. Providing traditional interlibrary loan access via the worldwide OCLC library cooperative.

4. If only one chapter of a book is of interest, that chapter may be obtainable by the Libraries' participation in the RapidILL consortium's "Rapid Book Chapter" program where a scanned copy of the chapter is sent from the library that has the book in their collection to the requesting library.

5. Submittal of a "Purchase Request" form via RensSearch, the Library's website and online catalog. Book requests are routed to selection librarians for purchase consideration, if appropriate, or a response is sent to the patron suggesting they request the title via one of the Rensselaer Libraries' interlibrary loan options.

Journal Articles

1. Subscribing to electronic journals individually and/or via an aggregated package.

2. Providing traditional interlibrary loan access via the worldwide OCLC library cooperative.

3. Membership and participation in RapidILL a revolutionary article delivery system developed at Colorado State University. Rensselaer is a participant in RapidILL's Academic Pod E that includes many prestigious institutions of higher learning including a good number of institutions with notable engineering programs such as Carnegie Mellon, Georgia Tech, Johns Hopkins, and the University of Wisconsin.

4. If article is still unavailable, due to exceeding the annual "fair use" copyright restriction for a particular journal, the Interlibrary Loan Librarian will usually purchase the article directly from the publisher, or via the Copyright Clearance Center's "Get It Now" document delivery service and email, in PDF file form, to the patron.

5. Submittal of a "Purchase Request" form via RensSearch, the Library's website and online catalog. If warranted in the Libraries' judgment, the title is added to the Materials Request list for subscription consideration given funding coverage and prioritization over other requests.

A Collection Development Team meets weekly to review electronic resource usage statistics and make renewal, cancellation and new subscription decisions.

Drawing upon its strong tradition of providing innovative ways to find and obtain information, the Rensselaer Libraries is transitioning from a "Just-In-Case" to a "Just-In-Time" library model. The electronic resources environment and nascent patron-driven electronic book loan and acquisitions offerings provide the tools to analyze usage and provide users with exactly what they want, when they want it. It's also increasingly more cost and labor workflow effective to purchase, or obtain via interlibrary/consortia loan or fee-based short-term loan mechanisms, electronic delivery of articles from journals with lower Rensselaer usage statistics. The transition to the "Just-In-Time" model represents a shift in library resource expenditures from speculation and anticipation by librarians to real and immediate needs by patrons – preferably in electronic format.

This transition builds on recent pilot patron-driven acquisition (PDA) projects undertaken by the Rensselaer Libraries and also in conjunction with the ConnectNY consortium. The evolution from a print-based physical collection of books and a subscription electronic journal model to an on-demand "Just-In-Time" model focused, whenever possible, on electronic/online delivery, will accelerate as publishers become increasingly more flexible in their own business models.

The institution's policies and procedures relative to EEO/AA for faculty, staff, and students.

http://hr.rpi.edu/update.do?artcenterkey=6
http://www.rpi.edu/dept/hr/action.pdf

The institution's policy regarding: human resource development opportunities such as sabbatical, research leave, and scholarly achievements.

http://hr.rpi.edu/update.do?artcenterkey=288

Policies, Procedures, and Criteria for Faculty Appointment, Promotion, and Tenure.

At Rensselaer, the Faculty Handbook (see http://www.rpi.edu/dept/provost/facultyhandbook1-06.pdf) describes the opportunities and responsibilities of the various types of faculty who are hired. Hiring of faculty typically starts at the department level (it is at the School level in Architecture, since Architecture does not have departments). Each recommendation includes a proposal defining the parameters of the position, and the Provost has final authority for all faculty appointments.

Most faculty at Rensselaer are tenure-track or tenured faculty, although there are some non-tenure track faculty ("contingent faculty") who are Lecturers, Professors of Practice, or Adjuncts. These non-tenure positions are typically contracted positions for a period ranging from a single semester up to three years.

Tenure-track faculty typically join the Institute as Assistant Professors with a three-year renewable contract and six years to work toward promotion to Associate Professor with tenure. Newly hired Assistant Professors receive a start-up package, which is a sum of money to be used during their first two years at the Institute to acquire research materials, attend conferences and complete other scholarly activities that will assist them in working toward promotion and tenure. The amount provided to each faculty is confidential.

Assistant Professors are required, according to the Faulty Handbook, to be mentored, and all faculty are to receive annual evaluations. In the School of Architecture, the Dean assigns 2-3 senior faculty mentors to each Assistant Professor. Mentors typically meet with their junior faculty mentees at least once per semester to discuss teaching, research/scholarship, and service, the three categories considered in Rensselaer's promotion and tenure process. Mentors provide an overview of progress to the Dean and the Dean provides an annual review.

There is a three-year review of all Assistant Professors to determine whether they have made sufficient progress toward tenure and should be renewed for a second three-year term, and to provide guidance for the second term. During this process, members of the School's Promotion and Tenure Committee (all SoA tenured faculty at the level of Associate Professor or higher) review the teaching, scholarship and service record of the junior faculty member and offer recommendations to the junior faculty member as he/she prepares to be considered for promotion and tenure. Typically the Assistant Professor's promotion and tenure case will be considered during his/her sixth year of employment. In Architecture, cases (including an external review) are first presented to the School Promotion and Tenure Committee to determine whether the case is sufficiently strong and adequately prepared for the Dean to proceed in seeking confidential external reviews. Upon receipt of 6-10 external reviews of the candidate's work as prepared by the candidate, the School P&T committee meets to review and vote on whether to recommend tenure with promotion to Associate Professor. With a positive recommendation (vote) the Dean typically moves the case forward to the Institute-wide Promotion and Tenure Committee (an elected faculty committee of the Faculty Senate that consists of only Full Professors), the Provost's Deans' Council, and the Provost. Both committees review the case independently before formally voting in a joint session. The recommendation is presented to the Provost who decides whether to make a recommendation for tenure and/or promotion to the President who in turn, determines whether to recommend tenure and/or promotion to the Board of Trustees for final approval. The process may be stopped (tenure denied) at any level in the process. The Faculty Handbook outlines an appeal process available to faculty in the case of a negative determination.

A faculty member appointed to the level of Associate Professor, according to the Faculty Handbook, *"should possess a record of excellence in scholarship as demonstrated by an emerging national and/or international reputation, a level of high quality in educational activities including teaching and advising, and a significant level of service to the department, the Institute and the profession."*

There is no timeframe for faculty to move from the Associate Professor to the full Professor rank. According to the Faculty Handbook, *"an individual holding this rank should be an academic leader, possessing a nationally or internationally recognized record of excellence in scholarship, a sustained level of high quality in educational activities that go beyond teaching and advising, and a sustained level of service to the department, the Institute, and profession."* The rank of professor is normally attained by promotion from Associate Professor although some faculty highly sought by the Institute may be hired as Associate or Full Professors.

Contingent Faculty (Lecturers, Senior Lecturers and Professors of Practice)

Contingent Faculty are full or part time faculty non-tenure track faculty hired on an as-needed basis. Needs vary from year to year, and sometimes from one semester to the next. In response to the widely varying needs for contingent faculty in the School of Architecture, the Dean selects the faculty candidates to teach various courses or sections of courses. The Dean then circulates the candidate's resume with a

request for the tenured and tenure-track faculty to vote by email on the selected candidate. Lecturers and Professors of Practice are typically hired for a contract period of 1-3 years. Renewal contracts for contingent faculty are also approved by an email vote.

Adjunct faculty are hired semester-by-semester. In the School of Architecture, some of our practicing adjuncts (e.g. Professional Practice Professors) have returned each semester for many years. Other adjuncts serve for shorter periods based on need of the School and the expertise of the adjunct.

According to Institute regulations (as noted in the Faculty Handbook) no vote is needed for the hiring of adjunct faculty. The Dean appoints the adjunct faculty directly, without consultation of the tenured or tenure-track faculty

Response to the Offsite Program Questionnaire - The CENTER for ARCHITECTURE SCIENCE and ECOLOGY [CASE] is a Rensselaer Polytechnic Institute Center co-located at the offices of SOM, New York. The Center houses the Ph.D. and Masters of Science in Architectural Sciences Built Ecologies concentration and associated research enterprise. It is focused on the design and development of next generation sustainable building systems. It maintains a student population of approximately 15 PhD and MS students whose studies are partly carried out downstate and partly upstate at the Troy campus. Each fall the Center is host to the first year M.Arch class where studio and seminar courses focus on environmental sustainability and performance based integrated design methodologies and systems in the context of SOM's professional practice and a vibrant interdisciplinary research culture. Each spring select B.Arch students spend a semester of study at CASE in New York.

The CASE Offsite Program Questionnaire is available at http://www.arch.rpi.edu/naab/58-OffsiteProgramQuestionnaires.pdf

ROME CENTER - University of Arkansas, Rome, Italy - The Rome Center, administered by the University of Arkansas School of Architecture is host to their own students as well as programs and students from other NAAB accredited degree schools (Philadelphia, Auburn, Tennessee) as well as a variety of other programs including historic preservation and fashion. The Center has two full professors tenured by the University of Arkansas and several permanent and adjunct faculty hired by the Director. Schools participate in a variety of ways ranging from full reliance on the Rome Center and its faculty to deliver the program and content, to the role of host Institution. Rensselaer sends its own faculty member (rotating) who directs and is responsible for the program design, content and delivery. Teaching is supplemented by Jeffrey Blanchard, (Director of Cornell's Rome Center and Study Program) who teaches Urban and Architectural History of Rome, Professor Emilio del Gesso (U. Ark, tenured) who teaches Art and Culture in Italy, and adjuncts associated with the Center who teach the elective Preservation and Contemporary Architecture of Rome courses.
The program is prefaced by required completion of two levels of Italian language, and an intensive 10-day language and culture introductory course. Roughly 12-13 weeks are spent in residence in Rome with two to three weeks of regional travel accompanied by faculty experts.

The Rome program Offsite Program Questionnaire is available at http://www.arch.rpi.edu/naab/58-OffsiteProgramQuestionnaires.pdf

India Studies Program - Center for Environmental Planning and Technology, Ahmedabad, India
The India program at Rensselaer's School of Architecture is associated with CEPT University in Ahmedabad, India. Ahmedabad is a vibrant metropolis of 5 million inhabitants located in the northwestern part of India. It has a dry desert-like climate. Students in this program are immersed immediately in Indian culture while studying at CEPT University, which is one of the premier schools of architecture in India. It was founded in 1962 by Balkrishna Doshi, an internationally renowned architect, who at age 89 still maintains a thriving practice in Ahmedabad producing buildings and urban design of exceptional quality.

Rensselaer's School of Architecture has had a relationship with CEPT for more than twenty years. This relationship involves CEPT's acceptance of a small number of RPI students and one RPI faculty member in the spring semesters of odd-numbered years. In turn, RPI hosts a small group of CEPT students for a semester.

While the RPI group is in India, they take several extended field trips throughout India. Each trip encompasses about 7 – 10 days and altogether the travels account for about one month. These travels are effectively study travels as students have to keep a sketch diary as well as make written accounts of their experiences. India is a country of enormous diversity in terms of language, culture, and architecture. It has a rich and deep architectural history that has syncretized indigenous architectural practices with those of the Mughal conquerors and those that were part of the British Raj. With its independence, India was anxious to modernize and as a result has the most works by Le Corbusier of any country except France, Four of those buildings are in Ahmedabad as is Louis Kahn's India Institute of Management. Ahmedabad is composed of an old town on the eastern banks of the Sabarmati River; it is made up of intimate neighborhoods, or pols. In contrast, the newer city, is on the west bank and has essentially grown up in the last 60 – 70 years. Ahmedabad was, and still is to a lesser degree, known for its textile mills. One of the textile owners, Kasturbhai Lalbhai endowed CEPT University. Our students benefit from having critiques and reviews with India architects and CEPT faculty. Their projects are situated in Ahmedabad and focus on the making connections between exiting urban fabric, new urban fabric, and the unique condition of Ahmedabad along the Sabarmati riverfront.

The India program Offsite Program Questionnaire is available at **http://www.arch.rpi.edu/naab/58-OffsiteProgramQuestionnaires.pdf**

China Studies Program – Tongji University: School of Architecture - In support of the program's commitment to expanding the intellectual, cultural, ethnic and regional diversity throughout the school, preparing our students for future leadership roles, promoting the value of global citizenship and providing a multi-cultural experience for our students with resounding impact, the Rensselaer's study abroad program established a strategic relationship with one of the leading architecture schools in China over 19 years ago. In recognition of Tongji University's international reputation as one of the finest architecture programs in China, we developed a bi-yearly study abroad agreement bringing students and faculty from each of the respective programs together for an immersive semester-long studio-based curriculum experience.

Situated on the prestigious Tongji University campus in Shanghai, China, Rensselaer students have the unique opportunity to collaborate with fellow Tongji students, learn from distinguished faculty from their university, partake in shared studio and seminar courses, have access to a range of all-school public events, and travel to significant destinations throughout China to see in person contemporary and ancient architectural masterwork buildings.

Additionally, given that China has had the fastest growing and most robust building sector in the world, RPI students witness an unprecedented amount of new buildings and urban development throughout their time abroad, which represents an invaluable first-hand experience as future architects. Many of our students have developed meaningful friendships and business contacts that will serve them well as they move forward into an internationally competitive market after graduation.

The China program Offsite Program Questionnaire is available at http://www.arch.rpi.edu/naab/58-OffsiteProgramQuestionnaires.pdf.

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Student Diversity Charts

Student Diversity Charts

Fall 2014 Undergraduate Statistics

	Freshmen	Sophomores	Juniors	Seniors	5th-Year	Total
# students	73	58	59	48	41	279
# female	43	37	29	29	23	161
% female	59%	64%	49%	60%	56%	58%
# Black/African American	5	1	3	2	1	12
% Black/African American	7%	2%	5%	4%	2%	4%
# Hispanic	9	6	8	3	2	28
% Hispanic	12%	10%	14%	6%	5%	10%

Fall 2013 Undergraduate Statistics

	Freshmen	Sophomores	Juniors	Seniors	5th-Year	Total
# students	81	61	48	46	49	285
# female	49	31	30	26	28	164
% female	60%	51%	62.5%	56.5%	57%	57.5%
# Black/African American	3	3	2	1	2	11
% Black/African American	4%	5%	4%	2%	4%	4%
# Hispanic	11	7	3	2	1	24
% Hispanic	13.5%	11%	6%	4%	2%	8%

In comparison, the other schools at Rensselaer Polytechnic Institute, have lower percentages of female students than the School of Architecture:

Fall 2014 Undergraduate Statistics

	School of Architecture	School of Engineering	School of HASS	Lally School of Management	School of Science
# students	285	3,277	348	277	1291
# female	164	911	154	86	352
% female	57.5%	28%	44%	31%	27%

In comparing minority enrollments, the School of Architecture compares itself to the School of Engineering, which is the largest school in the Institute. As shown in the chart below, the schools are similar in percentages of minority students:

	School of Architecture	School of Engineering
# students	285	3,277
# Black/African American	11	91
% Black/African American	4%	3%
# Hispanic	24	257
% Hispanic	8%	7%

M.Arch Defining Perspectives Chart

Exposures and Opportunities: Defining Perspectives

M.Arch	Learning Experiences/Opportunities	
Defining Perspectives	**Curricular (courses)**	**Co-Curricular Activities**
Collaboration and Leadership The program must describe its culture for successful individual and team dynamics, collaborative experiences and opportunities for leadership roles.	**Structures 1 - group assignment**	Charrettes
	Structures 2 - group assignment	AIAS
	Grad Arch Design 2 - Housing - team projects	NOMAS
	CASE semester - research investigations + collective research	Deans Student Advisory Council
	Grad Arch Design 4 (IDD) - team projects	Mentoring
	Materials and Construction Systems - group assignment	Student Ambassadors
	Bedford A/E Seminar	Course Assistanceships
	Bedford Traveling Workshop	CANstruction
	Bedford A/E Studio	SMART Geometries Conference
		Position Series
		Section Cut Pin Up
Design The program must describe its approach to developing graduates with an understanding of design as a multidimensional process involving problem resolution and the discovery of new opportunities that will create value.	**Grad Arch Design 1**	Charrettes
	Grad Arch Design 2	Competitions - Coffee Cart
	Grad Arch Design 3	CANstruction
	Grad Arch Design 4 (IDD)	
	Grad Arch Design 5	
	Grad Final Project	
Professional Opportunities The program must describe its approach for educating students on the breadth of professional opportunities and career paths, including the transition to internship and licensure.	**Grad Arch Design 4 (IDD) - Field Trip / Office Visits**	Bedford Workshop
	Professional Practice 1	IDD Site Visits
	Professional Practice 2	IDD Field Trip
	CASE at SOM	Lecture Series
	Bedford A/E Seminar	Internships with faculty
	Bedford Studio (IDD)	Smart Geometries Conference
	Bedford Traveling Workshop	Blast Off
		Position Series
		Career Fair
		IDP presentations
		Coffee and Conv with lecturers - M.Arch and B Arch
		Abroad Programs - meet with offices
		External guest reviewers - honors reviews - principles
		Mentoring / Advising
		Portfolio workshop
Stewardship and the Environment The program must describe its approach	**Built Ecologies 1**	
	Environmental and Ecological Systems	**Semester at CASE**
	Sustainability Building Design	

to developing graduates who are prepared to both understand and take responsibility for stewardship of the environment and natural resources.	Sustainability Building Design Metrics	
	Building Systems and the Enviroment	
	Graduate Environmental Parametrics	
	Masters Project - Ecological Urbanism or Environmental Parametrics	
Community and Social Responsibility	**Grad Arch Design Studio 1 - Capital Region Initiative**	CANstruction
The program must describe its approach	Urban furniture studio	Tutoring high school students
to developing graduates who are	**Professional Practice 1 and 2 -** Planning Meeting Attendance - Assign.	Habitat for Humanity
prepared to be active, engaged citizens		CASE - coconut product…
able to understand what it means to be		
professional members of society and to		
act ethically on that understanding.		

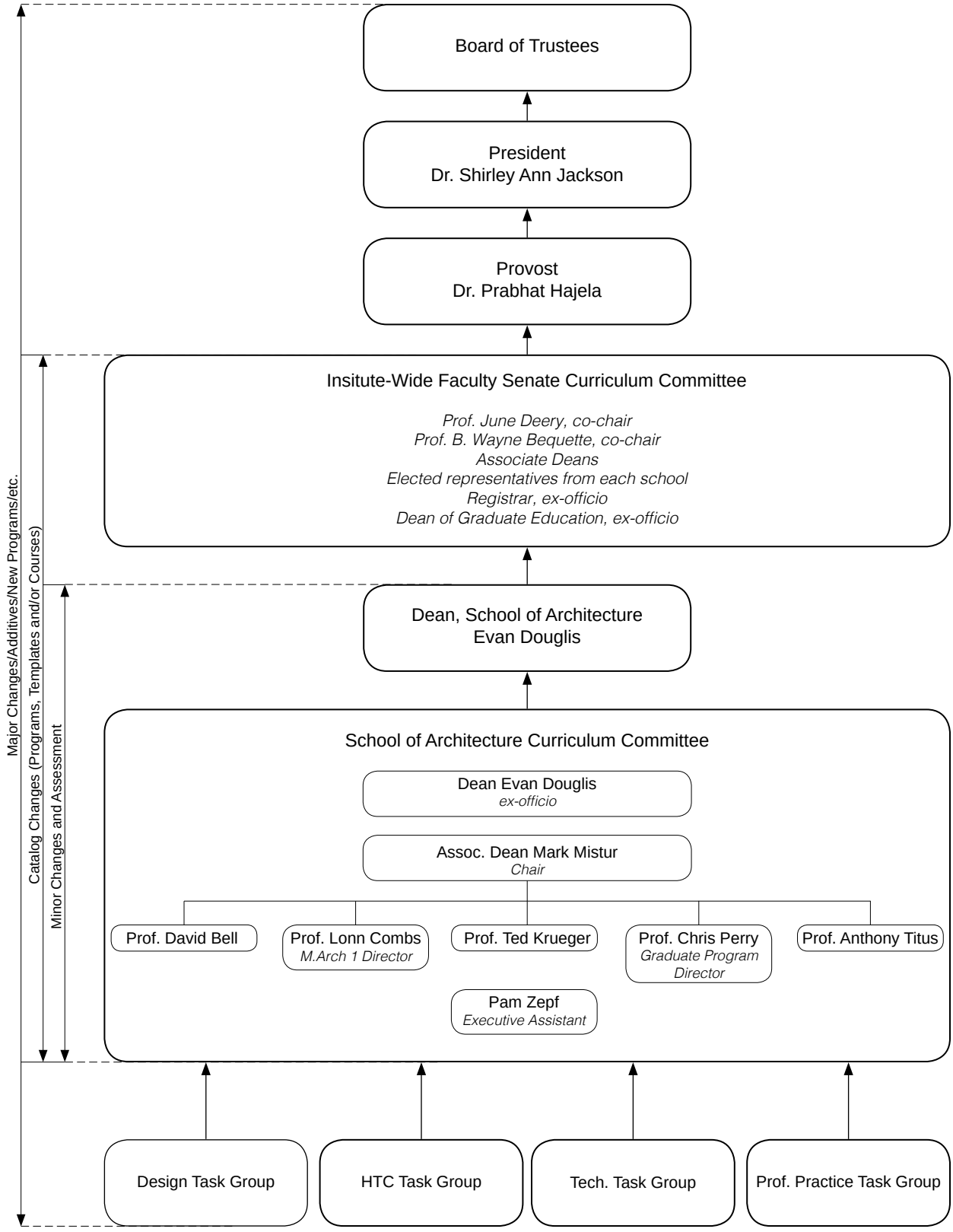
B.Arch Defining Perspectives Chart

Exposures and Opportunities: Defining Perspectives

B.Arch	Learning Experiences/Opportunities	
Defining Perspectives	**Curricular (courses)**	**Co-Curricular Activities**
Collaboration and Leadership The program must describe its culture for successful individual and team dynamics, collaborative experiences and opportunities for leadership roles.	**Integrated Design Development Studio - team projects**	Charrettes
	Bedford Seminar - Interdisciplinary Team Projects	AIAS
	Case Studies - Team Projects	NOMAS
	Structures 1 - team projects	Deans Student Advisory Council
	Structures 2 - Team Projects	Mentoring
	Ethos of Architecture - team projects	Student Ambassadors
	Study Abroad Program - cross cultural	Course Assistanceships
	Architecture Design 4 - Housing - team projects	CANstruction
	Integrated Design Schematic Studio - group assignment	SMART Geometries Conference
	Materials and Design + Materials and Enclosure - group assign.	Position Series
	Bedford A/E Seminar	Section Cut Pin Up
	Bedford Traveling Workshop	
	Bedford A/E Studio	
	CASE semester - research investigations + collective research	
Design The program must describe its approach to developing graduates with an understanding of design as a multidimensional process involving problem resolution and the discovery of new opportunities that will create value.	**Arch Design 1**	Charrettes
	Arch Design 2	Competitions - Coffee Cart
	Arch Design 3	CANstruction
	Arch Design 4	Undergraduate Research Projects
	Integrated Design Schematic	
	Integrated Design Development	
	Arch Design 5	
	Arch Design 6	
	Arch Design 7	
	Final Project	
Professional Opportunities The program must describe its approach for educating students on the breadth of professional opportunities and career paths, including the transition to internship and licensure.	**Integrated Design Development - Field Trip / Office Visits**	Bedford Workshop
	Professional Practice 1	IDD Site Visits
	Professional Practice 2	IDD Field Trip
	Case Studies course	Lecture Series
	CASE at SOM	Undergraduate Research Projects
	Bedford A/E Seminar	Internships with faculty
	Bedford Studio (IDD)	Smart Geometries Conference
	Bedford Traveling Workshop	Blast Off
		Position Series
		Career Fair
		IDP presentations

		Coffee and Conv with lecturers - M.Arch and B Arch
		Abroad Programs - meet with offices
		External guest reviewers - honors reviews - principles
		Mentoring / Advising
		Portfolio workshop
Stewardship and the Environment The program must describe its approach to developing graduates who are prepared to both understand and take responsibility for stewardship of the environment and natural resources.	**Energy Comfort and Ecology**	Undergraduate Research Projects's
	Environmental and Ecological Systems	CASE visit
	Sustainability Building Design	
	Sustainability Building Design Metrics	
	Semester at the Center for Architecture Science and Ecology	
	Building Systems and the Enviroment	
	FP - Ethical Project that takes on issues of the environment	
Community and Social Responsibility The program must describe its approach to developing graduates who are prepared to be active, engaged citizens able to understand what it means to be professional members of society and to act ethically on that understanding.	**Arch Design Studio 3 - Capital Region Initiative**	CANstruction
	International Study Abroad Programs	Tutoring high school students
	CASE - coconut product…	Habitat for Humanity
	Urban furniture studio	
	Professional Practice 1 and 2 - Planning Meeting Attendance - Assign.	

Curricular Assessment Chart



Curriculum Committee
Representation & Process

Faculty Resumes

Ajmal Aqtash

Courses Taught (Four semesters prior to current visit):

Spring 2014 n/a

Fall 2014 ARCH-2360 Construction Systems
ARCH-2510 Materials & Design
ARCH-4300 Design Development

Spring 2015 ARCH-4560 Materials & Enclosure

Fall 2015 n/a

Educational Credentials: M.S. Architecture, Columbia University GSAPP
B. Arch, Pratt Institute School of Architecture

Teaching Experience: 2014-15 Adjunct faculty at RPI School of Architecture
Also taught at Pratt Institute School of Architecture and Stevens Institute School of Mechanical Engineering

Professional Experience: 2009 co-founded form-ula design practice, NYC
2007 co-founded core.form –ula (R&D wing of form-ula), NYC
2003-09 designer at Skidmore, Owings & Merrill
1999-01 Associate Director at Center for Experimental Structures (CES) at Pratt Institute

Licenses/Registration:

Selected Publications and Recent Research:

1. 2013, BOB Magazine (sushi-teria)
2. 2012, SPA-DE Magazine (sushi-teria)
3. 2012, World Wide Architecture: 40 Architects/ 40 Countries
4. 2012, Young Architects 13: Princeton Architectural Pres
5. 2011, Prattfolio, What is Next

Professional Memberships: n/a

Name: David Bell

Spring 2014
ARCH-2020 The Building & Thinking of Architecture 2
ARCH-4250, 4260 Architecture Design 5, 6

Fall 2014
ARCH-2150 The Ethos of Architecture [new course]
ARCH-2220 Architecture Design 2
ARCH-2620 Graduate Architecture Design 2

Spring 2015 (India study-abroad program)
ARCH-4250, 4260 Architecture Design 5, 6
The Ineffable Space of Le Corbusier
India Discovery

Fall 2015
ARCH-2150 The Ethos of Architecture
ARCH-4100 An Architectural Genealogy 1 [new course]
ARCH-2820 Architectural Design Studio 3

Educational Credentials: B.A. Physics, Bridgewater College
Graduate Studies in Physics, University of Virginia
M. Arch, University of Virginia

Teaching Experience: Rensselaer Polytechnic Institute School of Architecture
1980-83 Assistant Professor
1983-present Associate Professor
1985-88 Director of Professional Studies
1989-95 Director of M. Arch. Program
1998-present Director of Undergraduate Admissions
2007-2010 Director of Undergraduate Architecture Programs
Kansas State University, Asst. Professor, Architecture, 1977-80

Professional Experience: 1973-77 Project Designer, Cochran, Stephenson, Donkervoet in Maryland
1978-79 Project Designer, The Design Studio in Kansas
2000-02 Principal, 3arc Graphic Design, Troy, NY

Licenses/Registration: Licensed Architect, Maryland

Selected Publications and Recent Research:
1. (Book) *Adolf Loos: The Irritation of Modernity*, 2015, PIEINTHESKY Press, Troy, NY.
2. (Book) *Jefferson's University as American Dream*, 2014, PIEINTHESKY Press, Troy, NY.
3. (Book) *Bernini & Borromini: Theater & Heresy*, 2013, PIEINTHESKY Press, Troy, NY.
4. "Thomas Jefferson's University: An Architectural Masque," in *Real Virtuality*, Ulrich Gehmann & Martin Reiche, eds, transcript Verlag, Bielefeld, Germany, 2014, pp. 63-89.
5. "The Panoptic Garden," in *Earth Perfect?,* Annette Giesecke & Naomi Jacobs, eds., Black Dog Publishing [now Artifice Books on Architecture], London, 2013, pp. 190-207.
6. "The Irritation of Architecture", in Journal of Architectural Education, Vol. 64, Issue 2, March 2011, pp. 113 – 126.

Professional Memberships: n/a

Andrew Bierman

Courses Taught (Four semesters prior to current visit):

Spring 2014 LGHT-4770 Lighting Technology & Applications

Fall 2014 LGHT-4770 Lighting Technology & Applications

Spring 2015 None

Fall 2015 LGHT-4770 Lighting Technology & Applications

Educational Credentials: M.S. Lighting, RPI School of Architecture
B.S. Physics, RPI School of Sciences

Teaching Experience: RPI School of Architecture, Lighting Research Center
1998-present, Adjunct Professor

Professional Experience:
RPI School of Arch., Lighting Research Center
1993-present, Sr. Research Scientist
1995-present, Photometry Laboratory Manager
ETL Testing Laboratories, Inc.,
1992-93, Project Engineer

Licenses/Registration: Lighting Certified 2002-present by Nat'l Council on Qualifications for Lighting Professions

Patents:

Self-commissioning Daylight Switching System
United States Patent Number 7,045,968 May 2006
Inventors: Bierman, Andrew and Leslie, Russell P.

Photosensor and control system for dimming lighting fixtures to reduce power consumption
United States Patent Number 6,583,573 June 2003

Selected Publications and Recent Research:

1. Bodington, D., A. Bierman, and N. Narendran. In press. A flicker perception metric. Lighting Research and Technology, advance online publication 13 April 2015.
2. Bierman, A., "Will switching to LED outdoor lighting increase sky glow? 2012. Lighting Research and Technology 44, no. 4 449-458.
3. Bierman, A., M. G. Figueiro and M. S. Rea, "Measuring and predicting eyelid spectral transmittance", J. Biomed. Opt. 16, 067011 (Jun 08, 2011)
4. Mark S. Rea, M. G. Figueiro, A. Bierman and J. D. Bullough, Circadian light. Journal of Circadian Rhythms 2010, 8:2
5. Bierman, A., T. R. Klein, and M. S. Rea. 2005. The Daysimeter: a device for measuring optical radiation as a stimulus for the human circadian system. Measurement Science and Technology. 16:2292-2299.
6. Bierman, A, and K. M. Conway. 2000. Characterizing daylight photosensor system performance to help overcome Market barriers. Journal of the Illuminating Engineering Society 29, no. 1: 101-15.

Jonas Braasch

Courses Taught (Four semesters prior to current visit):

Spring 2014 ARCH-4890 Aural Architecture
Fall 2014 ARCH-4860/6860 Applied Psychoacoustics
Spring 2015 ARCH-4890 Aural Architecture
Fall 2015 ARCH-4860/6860 Applied Psychoacoustics

Educational Credentials: Ph.D. in musicology, Ruhr-University Bochum, Germany
D. Eng., Electrical Engineering, Ruhr-University Bochum, Germany
M.S. equivalent, Physics, Technical University Dortmund, Germany

Teaching Experience: RPI School of Architecture
2006 – Assistant Professor
2012 – Associate Professor
Also taught at Ruhr University, Bochum, Germany, McGill University.

Professional Experience:

2004-05 Asst. Professor, Schulich School of Music, McGill Univ.
2004 Research Associate, Sound Recording Area, Schulich School of Music, McGill University.
2001-03 Research Associate, Institute of Communication Acoustics, Ruhr University in Germany.
2001-03 Manager of group, Auditory Signal Processing and Binaural Technology, Ruhr Univ.
2001-03 Manager of UNIX computer network at Ruhr University.

Licenses/Registration: n/a

Selected Publications and Recent Research:

1. J. Braasch (2014) *Sound Localization in Mammals, Models, in:* Encyclopedia of Computational Neuroscience, D. Jaeger, R. Jung (eds.), Springer, NY, pp. 1-17.
2. J. Braasch (2013) "A Precedence Effect Model to Simulate Localization Dominance Using an Adaptive, Stimulus Parameter-Based Inhibition, Process," J. Acoust. Soc. Am., 134(1), July 2013, 420-435.
3. D. Van Nort, P. Oliveros, J. Braasch (2013) "Electro/Acoustic Improvisation and Deeply Listening Machines," Journal of New Music Research, 42(4), 303-324.
4. S. Ellis, A. Haig, N. Sundar Govindarajulu, S. Bringsjord, J. Valerio, J. Braasch, P. Oliveros (2015) (book chapter) "Handle: Engineering Artificial Musical Creativity at the 'Trickery' Level," in *Computational Creativity Research: Toward Creative Machines,* Besold, T.R. and Schorlemmer, M. and Smaill, A. Springer. Heidelberg, New York, Dorderecht, London. In Press.
5. D. Van Nort, J. Braasch, P. Oliveros (2012) Sound Texture Recognition through Dynamical Systems Modeling of Empirical Mode Decomposition, J. Acoust. Soc. Am. 132(4), 2734–2744.
6. D. Valente, J. Braasch, S. Myrbeck*, (2012) Comparing perceived auditory width to the visual image of a performing ensemble in contrasting bi-modal environments, J. Acoust. Soc. Am., 131(1) , 205–217.
7. Deep Listening Band (2014) *Dunrobin Sonic Gems*, Pauline Oliveros (V-Accordion, Conch Shell), Stuart Dempster (Trombone, Didjeridu), Jonas Braasch (Saxophone), IONE (Opening Invocation), Jesse Stewart (Percussion), Johannes Welsch (Gongs), recorded live on October 5, 2013 at the Dunrobin Sonic Gym, Audio Compact Disk, Deep Listening Records.
8. Triple Point (2014) *Phase/Transition*, Jonas Braasch, soprano saxophone; Pauline Oliveros, V-accordion; Doug Van Nort, granular-feedback expanded instrument system (GREIS) electronics, audio compact disk 3 CDs, Pogus Records 21078-2.

Professional Memberships: Acoustical Society of America, Audio Engineering Society

Jennifer Brons

Courses Taught (Four semesters prior to current visit):
Spring 2014 n/a
Fall 2014 ARCH-4230 Lighting Design
Spring 2015 n/a
Fall 2015 ARCH-4230 Lighting Design

Educational Credentials: M.S. Lighting, Rensselaer Polytechnic Institute
B. Arch., University of California at Berkeley

Teaching Experience: 2005-15 RPI School of Architecture, Adjunct Asst. Professor
Also taught at Clemson Univ., and Albany Chapter of Illuminating Engineering Society of North America.

Professional Experience:
1997-present, Research Scientist, Lighting Research Center, RPI.
2005 – Lighting Deign Sabbatical, Phoenix Large Light Matters, London.
1994-97 Board Member, Designers Lighting Forum, San Francisco.
1996-97 Draftsman and R+D, Shaper Lighting, Richmond, CA.
1994-96 Asst. project manager, Performance Electric, Pleasanton, CA.

Licenses/Registration: Lighting Certification (LC), Nat'l Council on Qualifications for Lighting Professions (NCQLP)

Selected Publications and Recent Research:
1. Rea, M.S., Bullough, J.D., Brons, J.A., 2014. Spectral considerations for outdoor lighting: Designing for perceived scene brightness. Lighting Research and Technology; 0, 1-11.
2. Rea, M.S. J.D. Bullough and J.A. Brons. 2013. A quantitative foundation for easily and significantly reducing light pollution. First International Conference on Artificial Light at Night (p. 86), Berlin, Germany, Oct. 28-30, Universitatsverlad der Technische Universsitat Berlin.
3. Tarricone, P. 2013. "Newsmaker: Field General (DELTA Program Director Jennifer Brons)" *Lighting Design and Application*, June 2013, pp 55-56.
4. LRC (2015). Lighting Research Report, U.S. General Services Headquarters Building, Washington, D.C., Submitted to U.S. Genearl Service Administration, Feb. 2015.
5. DELTA Field Test, 2013, Glazing with Integral Honeycomb Baffles.

Professional Memberships:

Lonn Combs

Courses Taught (Four semesters prior to current visit):

Spring 2014: ARCH-4300 Design Development

Fall 2014: ARCH-2220-1 Architectural Design 2
ARCH 4690-1 Case Studies: ARCH Knowledge

Spring 2015: ARCH-4963-2 Integrated Design Schematic

Fall 2015: ARCH-4963 Integrated Design Schematic
ARCH 4690 Case Studies: ARCH Knowledge

Educational Credentials: M.S., Advanced Architectural Design, GSAPP, Columbia University
B. Arch., College of Architecture, University of Kentucky

Teaching Experience: Rensselaer Polytechnic Institute School of Architecture

2013-present	Director, M. Arch Program
2011-present	Assistant Professor
2010-2011	Clinical Assoc. Professor

Pratt Institute

2009-2010	Acting Chair of Undergraduate Architecture
2007-2009	Asst. Chair of Undergraduate Architecture
2001-2010	Adjunct Associate Professor of Architecture

Also taught at Cornell University and City College of New York.

Professional Experience:

1997-1998	Liang Peddle Thorp Architects, Hong Kong, China, Project Architect
1994-1997	Prof. Josef Paul Kleihues, Berlin, Germany, Project Architect
1992-1994	Studio Daniel Libeskind, Berlin, Germany, Project Architect

Licenses/Registration: NCARB certification since 2004
Registered Architect in New York and Massachusetts, previously registered in Texas, and the Federal State of Berlin (Germany)

Selected Publications and Recent Research:

1. Architectural Record's Vanguard 2012: EASTON+COMBS, Feature Article, Architectural Record 12/2012 (Annual Design Vanguard Issue).
2. bob: International Magazine of Space and Design: Issue 094 Retail: featuring Ohne Titel Concept Store bob 094, May 2012, pp. 144-145.
3. YAPI Architecture and Design Magazine, Ohne Titel Concept Store, pages 114-120. Issue: YAPI Dergsi 336, May 2012.
4. The Glimpses Series: Interview with Lonn Combs, American Academy in Rome (online article).
5. AIT 3.2012.Ohne Titel Concept Store, Feature Article.

Professional Memberships:

AIANY New Practices New York, Award winner / Active committee member
Fellow, American Academy in Rome (Rome Prize winner in Architecture, 2012)

Demetrios Comodromos

Courses Taught (Four semesters prior to current visit):

Spring 2014	ARCH-2510	Materials & Design	ARCH-4560	Materials & Enclosures
	ARCH-4250	Architecture Design 5 (CASE)	ARCH-4965	Env Parametrics CASE
	ARCH-4260	Architecture Design 6 (CASE)		
Fall 2014	ARCH-4170.8	Environmental Parametrics (CASE)		
	ARCH-4250.8	Arch. Design 5 (CASE)	ARCH-4360.8	Grad Arch. Des 4-CASE
	ARCH-4260.8	Arch. Design 6 (CASE)		
	ARCH-6370.8	Env. Parametrics Workshop (CASE)		
Spring 2015	ARCH-4170.8	Environmental Parametrics (CASE)		
	ARCH-4770.8	Architecture Design Studio 5 (CASE)		
	ARCH-4960.8	Architecture Design 6 (CASE)		
Fall 2015	ARCH-4170.8	Env. PArametrics-CASE	ARCH-4260.8	Arch. Design 6-CASE
	ARCH-4360.8	Grad Arch Design 6-CASE	ARCH-6370.8	Env. Par Wkshp-CASE

Educational Credentials: M.S. Advanced Architectural Design, Columbia School of Architecture
B. Architecture, BS Building Science, RPI School of Architecture

Teaching Experience: Rensselaer Polytechnic Institute School of Architecture
2010-present Lecturer
2006-10, and 2002-03 Adjunct Faulty
Also taught at Columbia Univ., Cornell Univ., Pratt Institute, and Univ. Pennsylvania

Professional Experience: 2008-12 Partner/Owner, Method Design, NYC
2008 AIA Award Winner, Prutting + Company, Connecticut
2005-08 AIA Award Winner, Kaehler-Moore Architects, Connecticut
2005 SHoP Architects, NYC
2002-05 GRIMSHAW, NYC
2000-01 Darius Toraby Architects, NYC

Licenses/Registration: Professional Registration and National Accreditation (NCARB), New York, New Jersey, Pennsylvania, Delaware, Connecticut

Selected Publications and Recent Research:

1. (Lecture) 2013, “Advancements in Sustainable Envelope Design,” speaker as CASE Faculty at Urban Green Council, Green Salon, 8/22/13.
2. D. Comodromos, J. Ellinger, “Material Intensities,” 2012, Proceedings of the 2012 ACADIA Conference, Synthetic Digital Ecologies.
3. R. Campbell, D. Comodromos, D. Stasiuk. “Geometry Resolution + Special Detailing of Pre-Cast Panel Structural Support System.”
4. R. Campbell, D. Comodromos, “Urban Morphology + the Social Vernacular: A Speculative Skyscraper for Medieval Islamic Cairo,” Journal of Architectural Education, Vol. 63, Issue 1 (Wiley Periodicals/ACSA), Washington DC, October 2009, p. 3, 6-13.
5. R. Campbell, D. Comodromos, Materials Handbook, 2008, (LuLu).

Professional Memberships: n/a

Gustavo Crembil

Courses Taught (Four semesters prior to current visit):

Spring 2014	ARCH-4990.3	BArch Final Project 2 – *Material Matters.1*
	ARCH-6990.2	Master's Thesis – *Material Matters.1*
	ARCH-4965.1	Latin American Architecture
Fall 2014	ARCH-4980.4	BArch Final Project 1- *Material Matters.2*
	ARCH-6990.6	Master's Project 1 – *Material Matters.2*
	ARCH-4949.18	Independent Study – TZIJK Robotic Installation (URP)
Spring 2015	ARCH-4990.3	BArch Final Project 2 – *Material Matters.2*
	ARCH-6980.4	Master's Project 2 – *Material Matters.2*
	ARCH-4090.1	Architectural Case Studies
Fall 2015	ARCH-4969.1	Arch Design: *Mestizo Robotics / Art_X@Rensselaer* (*)
	ARCH-4961.1	Latin American Architecture

(*) includes ARCH-4968.1 (workshop for ENG students) and ARCH6-4969.1 (seminar for HASS students)

Educational Credentials:

Master of Architecture, Cranbrook Academy of Art, 1997
Arquitecto, Professional Diploma, Universidad Nacional de Cordoba, Argentina, 1992
Bachiller Humanista, Unversidad Nacional de Cordoba, Argentina, 1979

Teaching Experience:

2015-present	Associate Professor, RPI School of Architecture
2009-2015	Assistant Professor, RPI School of Architecture
2008-09	Clinical Assistant Professor, RPI School of Architecture
2005-06	Adjunct Professor, RPI School of Architecture

Also taught at Cranbrook Academy of Art, Universidad Blas Pascal (Argentina), University of Detroit-Mercy

Professional Experience: THEM [Lynch + Crembil], Troy, NY. Founder / Director.
Also worked with Mayo, Lynch & Associates in Secaucus, NJ; Peter Lynch Architect in Bloomfield Hills, MI; Perkins Eastman Architects in New York City; Cranbrook Architectural Office in Bloomfield Hills, MI; and Museo de Bellas Artes Emilio Caraffa in Argentina.

Licenses/Registration: Registered Architect, Argentina, 1993

Selected Publications and Recent Research:

1. Crembil, Gustavo; Gaetano Adi, Paula (Editors)."Mestizo Technology: Art, Design, and Decoloniality in Latin America (special issue)", *Media-N, Journal of the New Media Caucus*. Forthcoming Spring 2016.
2. "Mestizo Robotics," co-authored with Paula Gaetano Adi, in *Leonard*o Journal and MIT Press. Online 2015; forthcoming 2016.
3. Crembil, Gustavo. El Projecto Paraguas (Buenos Aires: Nobuko). Forthcoming.
4. "El Proyecto Paraguas/The Umbrella Project. Craft knowledge as tactical tool in marginalized communities in Argentina," in *Craft-in-the-World*. Clare T Burke and Suzanne Spencer-Wood (Editors), Springer. Forthcoming.
5. "Making as Thinking. Notes from the Southern Cone," in *Dialectic #3: Dream of Building or the Reality of Dreaming. Checking the Pulse: Design Build Practices*, edited by Shundana Yusaf and Ole W. Fischer (Salt Lake City, Univ. of Utah Press). Spring 2015.

Professional Memberships:

Member, Association of Collegiate Schools of Architecture (ACSA)
Member, Association for Computer Aided Design in Architecture (ACADIA)
Fellow, Fulbright Fellowship

Adam Dayem

Courses Taught (Four semesters prior to current visit):

Spring 2014 ARCH-2210 Architecture Design I

Fall 2014 ARCH-2520 Digital Constructs 1
ARCH-2800 Architecture Design Studio 1

Spring 2015 ARCH-2230 Architecture Design 3
ARCH-2530 Digital Constructs 2
ARCH-2630 Graduate Architecture Design 3

Fall 2015 ARCH-2520 Digital Constructs 1
ARCH-4240, 4250 Vertical Studio

Educational Credentials: M. Architecture, Columbia University, 2001
B**.** Architecture with honors, University of California at Berkeley

Teaching Experience: Lecturer, 2014-present
Adjunct Professor, 2010-2013
Director of Summer Career Discovery Program 2012-present
Also taught at Pratt Institute, Univ. Pennsylvania School of Design, Parsons and Columbia University

Professional Experience: Principal of actual / office.
Also worked at Bernard Tschumi Architects, Smith-Miller + Hawkinson Architects, Joel Sanders Architect, Raphel Vinoly Architect, Keeble Rhoda Todd Architects

Licenses/Registration: Registered Architect, New York State

Selected Publications and Recent Research:

1. *Drawing in the Digital Age,* essay in Fresh Punches, edited by Nathan Hume, Abigail Coover Hume, and Paul Ruppert, 2013.
2. New Atlantis, A City for Voluntary Exiles, http://www.evolo.us/architecture/vertical-exile-for-island-nation-new-atlantis-by-adam-dayem/, 2013.
3. *LaNouvelle Atlantide*, Le Journal du Dimanch, 21 July 2013. Interview describing New Atlantis, A City for Voluntary Exiles.
4. Last Destination: Bucharest, On The Move Conference; contributed drawing for conference poster, 2013.
5. Moon Monster, An Architectural Folly; http://www.suckerpunchdaily.com/2012/10/05/moon-monster-an-architectural-folly/#more-25047.

Professional Memberships: n/a

Brian DeLuna

Courses Taught:

Spring 2014	n/a
Fall 2014	n/a
Spring 2015	n/a
Fall 2015	ARCH-4980 Final Project 1 Studio

Educational Credentials: M.S. Advanced Architectural Design, Columbia University
B.Arch, Southern California Institute of Architecture

Teaching Experience:
Rensselaer Polytechnic Institute School of Architecture
2015-16 Lecturer
2012 Adjunct Faculty
University of Applied Arts, Vienna
2012-2015 Assistant Professor
New Jersey Institute of Technology
2011-12 Adjunct Faculty
Princeton School of Architecture
2010 Assistant Teacher, Advanced Design Studio
SCI-Arc
2006 Teaching Assistant

Professional Experience:

1. Senior Designer, Asymptote Architecture, New York City, 2007-09, 2010-12.
2. Lead Designer, Xefirotarch, Hollywood, CA, 2005-07.
3. Designer, IdeaOffice Architects, Hollywood, CA, 2004-05.
4. Designer, o2 Architecture, Hollywood, CA, 1999-2002.

Licenses/Registration: n/a

Selected Publications and Recent Research:

1. "Perceptual Twist: Maribvor Art Gallery Competition," featured on Archdaily, Evolo, Suckerpunchdaily, Dezeen, August 2010.
2. "Columbia Advanced Studio VI, Jeffrey Inaba_Scripted Topoloies," featured in Columbia Abstract, 07/09.
3. "Columbia Advanced Studio V, Thomas Lesser: Moscow Master Plan," featured in Columbia Abstract, 07/09.
4. "Columbia Advanced Studio IV, ark Rackatansky: Folk Museum," featured in Columbia Abrstract, 07/09.
5. AD Architectural Design Collective Intelligence in Design, Oct., 2006, page 111.

Professional Memberships: n/a

Nancy Morgado Diniz, Ph.D.

Courses Taught (Four semesters prior to current visit):

Spring 2014 n/a

Fall 2014 n/a

Spring 2015 ARCH-4580 Materials Systems & Production
ARCH-6990 Master's Thesis (CASE)

Fall 2015 ARCH-6940 Indep. Study-Graduate
ARCH-6350.81 Grad. Design Research Studio (CASE)

Educational Credentials: Ph.D., Architecture, Bartlett Graduate School, London
M.Sc., Virtual Environments, Bartlett Graduate School, London
M.A. Urban Design, ISCTE, Lisbon, Portugal
5-Year Diploma in Architecture, Universidade Lusiada, Portugal

Teaching Experience: 2015-present RPI School of Architecture, Assistant Professor
2011-14 Xi'an Jiaotong-Liverpool Univ., China, Associate Professor
2001-13 External Examiner at MA in Interior Living, Domus Academy, Milan, Italy. Appointed by Univ. of Wales as master's programs validation institution.
2009-11 Course Director, Interior Arch & Design, University of Hertfordshire, Hatfield, UK.
2008-10 Course director MSc Architecture and Computation, ISCTE School of Arch. and Technology, Lisbon, Portugal.

Professional Experience: 2012-2014 Correspondent in China for 'Jornal de Arquitetos' tri-monthly publications for the Portuguese Architects Registration Board.

Licenses/Registration: n/a

Selected Publications and Recent Research:

1. Liang, H., Diniz, N, Fleming, C., Liu, D., Wang, W, Man, K. (2014) "Towards an analytical framework of interactions in mobile devices," in conference proceedings for Platcons-14, Jeju, Korea, 11-13 February 2014. (Best Paper Award).
2. Liang, H. Chunchuan, L. Yuan, B., Bi, R., Wong, D., Diniz, N. (2013) "MK-Pad: A Mouse+Keyboard Input technique for Distance Interaction through a Mobile Tablet Device," in conference proceedings for APCHI 2013, Bangalore, India, 24-27 September 2013.
3. Diniz, Nancy and Anderson, Bennedict. "Wearing your air - an architecture for unstable environment." In Armstrong, R. and Ferracina, S. eds. Unconventional Computing – Design Methods for Adaptive Architecture. Riverside Architectural Press, 2013, pp. 172-175. (Book)
4. Diniz, N., Liang, H. (2013) "Real-time Environmental Sensing – Adaptive Surfaces for Architecture," in conference proceedings for AMBIENT 2013, the 3rd International Conference on Ambient Computing, Applications, Services and Technologies, Porto, Portugal.
5. Liang, H., Diniz, N., Fleming, C. (2013) "Towards a framework for analyzing and designing interactive public media displays," in conference proceedings for Distributed, Ambient and Pervasive Interactions (DAPI), one of the affiliated and thematic conferences of HCI International 2013, Las Vegas, NV, 21-26 July 2013.

Professional Memberships: Architects Registration Board, United Kingdom
The Board of Portuguese Architects

Joshua Draper

Courses Taught (Four semesters prior to current visit):

Spring 2014 n/a

Fall 2014 (First semester teaching)
ARCH 4936 Research Investigations (4160)
ARCH 6963 Advanced Integrated Systems Prototype

Spring 2015
ARCH 4936 Research Investigations
ARCH 6963 Advanced Integrated Systems Prototype
ARCH 6966 Systems & Simulation Visualization

Fall 2015
ARCH 6810 Research Design Seminar
ARCH 6963 Advanced Integrated Systems Prototype

Educational Credentials:
Master of Architecture, Columbia University GSAPP
B. Arch, Kungliga Tekniska Hogskolan (KTH), Stockholm, Sweden
B.A. in Classics, St. John's College, Santa Fe, NM

Teaching Experience:
2014-present RPI School of Architecture, Lecturer
2008-present, Columbia Univ. GSAPP, Adjunct Assoc. Professor
2011-12 Barnard College, Adjunct Assoc. Professor
2008 RPI School of Architecture, Adjunct Assoc. Professor

Professional Experience:
2014, Project Designer, Island International Exterior Fabricators, NYC
2013-14, Project Manager, Folding Enterprises, Long Island City, NY
2012-13, Design Technology Specialist, CASE, NYC
2011-12 Project Architect, S3 Architects, NYC
2009-present, Partner/Founder, PrePost, Brooklyn, NY
2004-06 Architectural Intern, Studio Daniel Libeskind, NYC

Licenses/Registration: n/a

Selected Publications and Recent Research:

1. Groups and Spaces: MAPPING Collaborative Cultural Production and Social Art Practices, Christopher Kennedy, 2010 (fabrication, drawings).
2. Jorge Otero-Pailos: The Ethics of Dust, Daniela Zuman, Daniel Birnbaum, Evan Ebersberger, Jorge Otero-Pailos, 2010 (fabrication, photography).
3. Design Work: 3D Print Object Studies, 2013-14, for 2x4, New York City, (computational design, 3D print fabrication research and management).
4. Whitney Museum Façade, for CASE Deign and Permasteelisa, New York City, 2013, (façade detailing, project management).
5. Design Work: Urban Topiary, PrePost, Philadelphia, 2011 (design, computational fabrication workflow, installation of "living fence'). Winner of *Percent for Art Competition.*

Professional Memberships: n/a

Anna Dyson

Courses Taught (Four semesters prior to current visit):

Spring 2014	ARCH-6330 Built Ecologies (at CASE)
	ARCH-6967 (at CASE)
Fall 2014	ARCH-6810.81 Research Deign Seminar
	ARCH-6330.8 Built Ecologies 2
Spring 2015	ARCH-6330.8 Built Ecologies 2
Fall 2015	ARCH-6350.8 Env. History & Theory
	ARCH-6350.81 Design Research Studio (CASE)
	ARCH-6810.8 Research Design Seminar
	ARCH-6990.8 Master's Thesis

Educational Credentials: M. Architecture, Yale University
Baccalaureat General, Universite Laval, Quebec, Canada

Teaching Experience: Rensselaer Polytechnic Institute, School of Architecture
2011-present Professor
2003-2011 Associate Professor
1998-03 Assistant Professor
1997-98 Adjunct Professor, RPI School of Engineering
Since 2007, Director, Center for Architecture, Science and Ecology [CASE]
1993-94 taught in History of Art Department at Yale University

Professional Experience:
1997-98 Project Designer, BKS/K Architects, NYC
1996-99 Design and Manufacturing, Oggi Architetural Products, NYC
1994-95 Project Designer, Francois Gruson, Arhcitect, Paris
1993-94 Habitat for Humanity, Yale Building Project, New Haven, CT
1991 Asst. to Chief Curator, Power Plant Contemporary Art Museum, Toronto

Licenses/Registration: n/a

Selected Publications and Recent Research:

1. Dyson A, Koratkar N, Stark PRH, Vollen J, Andow B, Thomas A, Suresh S. Kreitemeyer B, Shultz J, "Prototyping of Nanostructured Materials for Dynamic Glazed Facades," in *Prototyping for Architects*, eds. Mark Burry, Jane Burry. London, UK: Thames and Hudson, 2015.
2. Andow, Brandon C, Justin Shultz, Jason Kirkpatrick, Bess Krietemeyer, Allison Clark, Teresa Rainey, and Anna Dyson. "Co-Modeled Whole Building Energy Use and Visual Comfort Performance of Electroactive Dynamic Daylighting Systems Using Tools for Dynamic Complex Fenestration Systems." *Energy and Buildings*, 2015 under review.
3. **Patents**: 2007 and 2010, Concentrating type solar collection and daylighting system within glaxed building envelopes; 2013, Method and apparatus for coastline remediation, energy generation, and vegetation support.
4. Andow, Brandon C., Shravan Suresh, Greg Theophall, Ajay Krishnamurthy, Nikhil Koratkar, Anna Dyson, and KV Lakshmi. "Multi-Functional Energy Harvesting and Energy Efficiency Dynamic Facades Using Reduced Graphene Oxide Thin Films Functionalized for Solar Water Oxidation." 2015 upcoming publication.
5. Smith, Shane, Dyson, Anna, "Framework for Tetra-functional Control of Viscoelastic Molecular Entropy in Biopolymeric Hydrogel Dynamics for Environmentally Responsive Metabolic Processes in Morphological Architectural Membranes," in Proceedings of Materials Research Society, *Adaptive Architecture and Programmable Matter – Next Generation Building Skins and Systems from Nano to Macro,* April 2015.

Mariana Figueiro, Ph.D.

Courses Taught (Four semesters prior to current visit):

Spring 2014	LGHT-6770 Light and Health
Fall 2014	LGHT-4840 Human Factors in Lighting
Spring 2015	LGHT-6770 Light and Health
Fall 2015	LGHT-4840 Human Factors in Lighting

Educational Credentials: Ph.D. (2004) Multidisciplinary Science, Rensselaer Polytechnic Institute
M.S. (1998) Lighting, Rensselaer Polytechnic Institute
B.S. (1992) Architecture and Urbanism, Federal University, Brazil

Teaching Experience: Faculty member in Rensselaer School of Architecture since 2006.
Visiting Assoc. Prof., Biology, Sage Colleges, Troy, NY, since 2010.

Professional Experience: Assistant Professor 2006-2010
Associate Professor 2010-2014
Full Professor since 2014
Self-employed architect 1993-1996

Licenses/Registration: n/a

Selected Publications and Recent Research:

1. Figueiro MG and Rea MS. (in press) Lighting, Health and Productivity. *Ergonomics Design for Healthy and Productive Workplaces*, edited by Alan Hedge. Taylor and Francis.
2. Figueiro MG and Rea MS (in press). Office lighting and personal light exposures in two seasons: impact on sleep and mood. *Lighting Research and Technology*.
3. Rea MS and Figueiro MG. (2014). Non-visual effects of colored light. *Handbook of Color Psychology*, edited by Andrew J. Elliot and Mark D. Fairchild. Cambridge University Press.
4. Figueiro MG, Plitnick BA, Lok A, Jones G, Higgins P. Hornick T, Rea MS. (2014) Tailored lighting intervention improves sleep, depression and agitation in persons with Alzheimer's disease and related dementia living in long-term care facilities. *Clinical Interventions in Aging*. 9:1527-1537.
5. Figueiro MG, Sahin L, Wood B, Plitnick B. Light at night and measures of alertness and performance: Implications for Shift Workers *Biological Research for Nursing*. In press. Published online February 19, 2015.
6. Sloane PS, Figueiro MG, Garg S, Cohen LW, Reed D, Williams CS, Preisser J, and Zimmerman S. 2013. Effect of home-based light treatment on persons with dementia and their caregivers. *Lighting Research and Technology* (LR&T). In press.
7. Figueiro MG and White R. 2013. Health consequences of shift work and implications for structural design. *Journal of Perinatology* 33 Suppl 1:S17-23.

Professional Memberships:

1. Illuminating Engineering Society of North America, Fellow
2. Society for Research on Biological Rhythms, Member
3. Gerontological Society of America, Member
4. Sleep Research Society, Member
5. Society for Light Treatment and Biological Rhythms, Member

Jean Paul Freyssinier

Courses Taught (Four semesters prior to current visit):

Spring 2014	LGHT-4770 Lighting Technology & Applications
Fall 2014	LGHT-4770 Lighting Technology & Applications
Spring 2015	None
Fall 2015	LGHT-4770 Lighting Technology & Applications

Educational Credentials: M.S. Lighting, RPI School of Architecture
B.S. Mechanical & Electrical Engineering, National Univ. of Mexico

Teaching Experience: RPI School of Architecture, Lighting Research Center
2003-present, Adjunct Professor
2006-09, Research Assistant Professor

Professional Experience:
RPI School of Arch., Lighting Research Center
2013-present, Sr. Research Scientist,
2009-12, Research Scientist
2006-09, Research Assistant Professor
2002-06, Lighting Design Specialist
1999-01, Research Assistant
Octavo Arte, Mexico City, Mexico
1997-99, Owner and principal of design
Control Luminico, Mexico City, Mexico
1996-97, Project director/senior designer
Genertek, Mexico City, Mexico
1993-95, Founding partner and project manager

Licenses/Registration: Lighting Certified 1998-13 by Nat'l Council on Qualifications for Lighting Professions

Selected Publications and Recent Research:

1. **Patents**: High-efficient light engines using light emitting diodes, and High efficiency light source using solid-state emitter and down-conversion material.
2. Rea, M.S. and J.P. Freyssinier. 2014. Color rendering: The forest and the trees. LS14: Proceedings of the 14th International Symposium on the Science and Technology of Lighting, 429-432, June 22-27, 2014, Como, Italy.
3. Rea, M.S. and J.P. Freyssinier, 2014, White lighting: a provisional model for predicting perceived tint in "white" illumination. Color Research and Application, 39(5): 466-479.
4. Sweater-Hickcox, K, N. Narendran, JD Bullough, and JP Freyssinier, 2013, Effect of different coloured luminous surrounds on LED discomfort glare perception. Lighting Research and Technology 45(4): 464-475.
5. Sweater-Hickcox, K., N. Narendran, JD Bullough, JP Freyssinier, 2012, Effect of different colored background lighting on LED discomfort glare perception. Twelfth International Conference on Solid State Lighting, Proceedings of SPIE 8484: 84840O.

Professional Memberships: Illuminating Engineering Society of N. America, 1992-96 and 2002-07
Society of Light and Lighting, UK, 2002-07
Association of Energy Engineers, 2002-07
Institution of Lighting Engineers, UK, 2002-07

Ralph Ghoche

Courses Taught (Four semesters prior to current visit):

Spring 2014	ARCH-4040 Cities and Lands ARCH-2140 Building and Thinking of Architecture
Fall 2014	n/a
Spring 2015	n/a
Fall 2015	n/a

Educational Credentials:
Ph.D, (expected) Graduate School of Architecture, Planning and Preservation, Columbia University.
M. Phil. (2007)Graduate School of Architecture, Planning and Preservation, Columbia University.
M. Arch. II post-professional degree (2002) History & Theory of Architecture, McGill University.
B. Arch (1998) McGill University.
B.S. (197) Architecture, McGill University.

Teaching Experience:
2012-14 Lecturer at RPI School of Architecture
2007-12 Visiting Asst. Professor, Architecture, Pratt Institute
2009 Adjunct Professor, Art Dept., Vassar College
2004-06 Teaching Fellow, GSAPP, Columbia University
2003 Research Assistantship, Canadian Centre for Architecture

Professional Experience:
David Hotson Architect, NYC, 2000-01
The Builders Association, NYC, 2000
L'Etude de Louis Brillant, Architect, Montreal, 1998-1999

Licenses/Registration: n/a

Selected Publications and Recent Research:

1. *"L'Atelier Constant-Dufeux," Jules Bourgoin (1838-1908): Architecture mathematiues, ornement*, Maryse Bideault, Estelle Thibaule et Mercedes Volais, eds. (Paris: Picard, 2014).
2. *"Simon-Claude Constant-Dufeux and Architecture's Symbolic Surface," Henri Labrouste et son temps*, Marc Le Coeur and Jean-Philippe Garric, eds. (2014).
3. *"Ornament and Expressive Lines: Nature and Symbol in Victor Ruprich-Robert's Flore ornementale" A Companion to Nineteenth-Century Architecture*, Harry Mallgrave, Martin Ressani and Christina Contrandriopoulos, eds. (Malden, MA: Blackwell Publishing, 2014).
4. *"Building and Weaving," Interweave: Urban Tectonics at Shanghai's South Bund*, Gustavo Crembil, ed. (Beijing: China Building Publishing, 2013).
5. *"Zola's Volatile Utopia,"* Journal of Architectural Education (Spring 2013), 32-38.

Professional Memberships: n/a

Matthew Gindlesparger

Courses Taught (Four semesters prior to current visit):
Spring 2014 ARCH-2360 Environmental & Ecological Systems (CASE)
Fall 2014 n/a
Spring 2015 n/a
Fall 2015 n/a

Educational Credentials: Master of Architecture, Univ. Arizona, Tucson.
B. Arch., Univ. Arizona, Tucson
B.S. Architecture, Southern Illinois University

Teaching Experience: 2010-2014 RPI School of Architecture
Lecturer and CASE Researcher
Adjunct Faculty
2013-15 RPI School of Architecture, adjunct faculty

Professional Experience: 2011-14 Chief Technical Officer, Fresh Air Building Systems, NYC
2010 – Patent, Solar Enclosure for Water Reuse and Thermal Comfort (applied 12/2/2010).
2009-10 Technical Program Manager, AzRISE, University of Arizona.
2004-09 Project Designer and Fabricator, Binary Design Studio.

Licenses/Registration: n/a

Selected Publications and Recent Research:

1. 2007. Vollen, Jason, Dale Clifford, Kelly Winn, and Matt Gindlesparger. "Digital Fabric: Generating Ceramic Caternary Networks," in *Expanding Bodies: Art "Cities" Environment: Proceedings of the 27th Annual Conference of the Association for Computer Aided Design kin Architecture (ACADIA), 48-55. ACADIA. Halifax, Nova Scotia, Canaa; Dalhousie NSCAD & CDRN,*
2. Clifford, Dale and matt Gindlesparter. Refereed Presentation. "Forming Logics: Digital and Material Experiments in Building Technology." Poster Session at the 27th Annual Conference of the Association for Computer Aided Design in Architecture (ACADIA). Halifax, Nova Scotia, Canada, Octoer 2007.
3. 2013. Lecture. "First Friday: SOM and CASE." The Architectural League. New York, NY.
4. 2014. Lecture, "Advancements on Sustainable Envelope Design." Urban Green Salon. USGBC New York City Chapter.
5. 2010. Wheeler, Bradley, "The University of Arizona Solar Energy Experimenal Dwelling: SEED[pod]" B-I (magazine), Bangkok, Thailand, vol 3, issue 32, April 2010, pp. 40-43.

Professional Memberships:

James Fleet Hower

Spring 2014	ARCH-2230	Arch Design 3
	ARCH-2540	Digital Constructs
Fall 2014	ARCH-2220	Arch Design 2
	ARCH-2540	Digital Constructs III
Spring 2015	ARCH-4240, 4250, 4260	Vertical Studio - landscape masterplan,
Fall 2015	ARCH-2820	Arch Design 3
	ARCH-2540	Digital Constructs III
	ARCH-6961	Computation

Educational Credentials: Master of Architecture, University of Pennsylvania, 2012
Master of Landscape Architecture, University of Pennsylvania, 2012
Bachelor of Arts, English, Georgetown University, 2006

Teaching Experience: 2012-15 RPI School of Architecture, Lecturer
2013 Univ. Pennsylvania, PennDesign, Instructor
2011 Tongji University Shanghai, China, Instructor
2010 Philadelphia University, Adjunct Associate Professor

Professional Experience: Fleet Hower is a designer intent on transforming the way we think about and produce products that shape our lives. He is interested in creating collaborative relationships between digital design and physical production in ways that leverage the rapid changes taking place in manufacturing technology. Fleet's work is helping to disrupt the traditional workflow of design-to-manufacture by investigating new possibilities of adaptable and intelligent computational design strategies that can interface directly with physical fabrication. In addition to his professional practice, Fleet is currently a Lecturer at the School or Architecture at Rennselaer Polytechnic Institute, teaching design studios and seminars in. Prior to RPI, Fleet taught at the University of Pennsylvania, Philadelphia University, CUNY City Tech, and Tongji University, in Shanghai.

Licenses/Registration: n/a

Selected Publications and Recent Research: CNET Magazine, Cool Hunting, Action Figure Insider

Professional Memberships:

Cornell Architecture Scripting Group, 2012-present, member, organization of generative designers authorized to assist students in learning and understanding new methodologies.

Nonlinear Systems Organization, 2009-12, Researcher. Design research organization at PennDesign to study the phenomenon of emergent conditions and the way they may be leveraged to create unique design solutions..

Lydia Kallipoliti, Ph.D.

Courses Taught:	**Spring 2014**	n/a
	Fall 2014	n/a
	Spring 2015	n/a
	Fall 2015	ARCH-4130 Modernity in Culture, Civ & Architecture 2
		ARCH-4140 Modernity in Culture, Civ & Architecture
		ARCH-5100 History-Theory-Criticism I

Educational Credentials: Ph.D., History and Theory of Architecture, Princeton University.
M.A., History and Theory of Architecture, Princeton University.
MS. Advanced Architectural Studies, Massachusetts Inst. of Technology.
Professional Diploma in Arch. and Engineering, Aristotle Univ. Thessaloniki.

Teaching Experience: Rensselaer Polytechnic Institute School of Architecture
Fall 2015 joined faculty as Assistant Professor
Syracuse University
Assistant Professor
Cooper Union, Irwin Chanin School of Architecture, Feltman Lighting Chair
Also Adjunct Faculty at Cooper Union, Columbia University

Professional Experience:
1. Cooper Union Institute for Sustainable Design, Sr. Associate.
2. Princeton University School of Architecture, Research Assistant.
3. DECOI Digital Design Group, member of the design, fabrication and advanced geometry team.

Licenses/Registration: Registered professional architect and engineer, Technical Chamber of Greece.

Selected Publications and Recent Research:
1. Kallipoliti, L. (2013) *Vertical Liferaft*, Journal of Architectural Education (JAE), 67(1).
2. Kallipoliti, L, Tsamis, A. (2013) *Vacuum Wall,* in P. Lorenzo-Eiroa, Aaron Sprecher (Eds.), Architecture in Formation: On the Nature of Information in Digital Architecture (NY: Routledge).
3. Lecture: *Mission Galactic Household,* Emerging Voices Lecture, Univ. of Michigan Taubman College of Architecture and Planning. 2013.
4. Exhibition: *Grid Off; Lights On,* Energy-generating lighting installation constructed for the Innovation Square of the World Science Festival in Brooklyn, NY, 2013.
5. Kallipoliti, Lydia (2010) (ed), "EcoRedux: Design Remedies for an Ailing Planet," *Special Issue of Architectural Design magazine (AD),* London: Wiley and Sons.

Professional Memberships: Member, Storefront for Art and Architecture in New York
Member, Architectural League of New York
Member, Society of Architectural Historians
Member, American Collegiate Schools of Architecture

Ted Krueger, Ph.D.

Courses Taught:

Spring 2014	ARCH-2230 Architecture Design 3 (coordinator)
	ARCH-2630 Graduate Architecture Design 3 (coordinator)
	ARCH-4967 Tool Theory
Fall 2014	ARCH-4010 Sensory Culture
	ARCH-4300 Design Development
Spring 2015	ARCH-4963 Integrated Design Schematic
Fall 2015	ARCH-4960 PIP Planning Seminar
	ARCH-4963 Integrated Design Schematic

Educational Credentials: Ph.D., Architecture, Royal Melbourne Institute of Technology.
M. Arch, GSAPP, Columbia University
B.A., Sociology, University of Wisconsin

Teaching Experience:
Rensselaer Polytechnic Institute School of Architecture
Tenured Associate Professor since 2001
Associate Dean, 2005-2009
Chair, Graduate Programs, 2005-2012
University of Arkansas
Tenured Associate Professor, 2001
Assistant Professor, 1999-2001
Columbia University
Adjunct Faculty, 1992-96
New School of Social Research
Adjunct Faculty, 1994

Professional Experience:
1989-96, Tsao and McKown Architects, NYC and Singapore, Sr. Architecture Designer.
1987-88, Vandeberg Lasky Architects, NYC, Designer and Project Administrator.
1985-87, Wank, Adams, Slavin Associates, NYC, Junior Designer.

Licenses/Registration: N/A

SelectedPublications, Research:

1. Besenecker, U. and Krueger, T. (2016) 'Luminous Color in Architecture: exploring methodologies for design relevant research'. Enquiry: a Journal of Architectural Research. ARCC journal paper has been accepted and will be published in 2016.
2. 2015 Universidade de Brasília, Faculdade Gama, Brasilia, Gama, DF, Brazil 05/27-09/01 'A Question of Balance,' Workshop on Sensing in Virtual Environments for students from five engineering disciplines.
3. Krueger, T., 2014. 'Second-order error; error that illuminates context', Kybernetes, Vol. 43 Iss: 9/10, pp.1354 – 1361.
4. Catalogue: StudioL, 2014. Laskey Charette Catalogue, Fox School, Washington University.
5. 4. Krueger, T., 2013. 'Listening to the Inaudible', Cybernetics and Human Knowing, 20(1-2), pp. 31-38.

Professional Memberships: n/a

Russell Leslie

Courses Taught (Four semesters prior to current visit):

NOTE: Prof. Leslie teaches in the graduate Lighting program; he does not teach in the B.Arch or M.Arch programs.

Educational Credentials:

B.A., Psychology, Brown University
M.A.T., Education, Rhode Island College
M. Arch., Rensselaer Polytechnic Institute

Teaching Experience:

RPI School of Architecture
1999-present Professor
1988-preent Associate Director, Lighting Research Center
2005-present, Head, Graduate Programs in Lighting
2002-03, Acting Director, Lighting Research Center
1990-98, Associate Professor
1985-1990, Assistant Professor
1984-85, Visiting Assistant Professor
1981-84, Adjunct Assistant Professor
1980-81, Research associate in Architecture
Also taught at Coper Union

Professional Experience:

1989-06, Principal, Russell P. Leslie Architect, PC. Shaftsbury, VT.
1997, Feltman Chair, The Cooper Union, visiting chair in lighting and humanities.
1977-89, Principal, Tect Associates Ltd., Vermont and Connecticut.
1985, Visiting Professional, Solar Energy Research Institute, Golden, CO.
1981-83, Architect in Residence, NY Foundation for the Arts, Schalmont School District, Rotterdam, NY
1974-77, Teacher, Bennington (VT) School District.

Licenses/Registration: Registered Architect, NY and VT, Lighting Certified by the national Council for the Certification of the Lighting Professions

Selected Publications and Recent Research:

1. Lighting Pattern Book for Homes, interactive website, http://www.lrc.rpi.edu/patternbook/about.asp, Russell Leslie, Jeremy Snyder, Jen Brons. Lighting Research Center, RPI, 2013.
2. D. Marcus, K. Sweater, N. Narendran, J.P. Freyssinier, J. Taylor, R. Leslie, "The Lighting Field Guide: Upgrading to LEDs for Multi-Family Housing," ASSIST, Rensselaer Polytechnic Institute, 2013.
3. RP Leslie, LC Radetsky, AM Smith, "Conceptual Design Metrics for Daylighting." *Lighting Research and Technology,* 44:277-290, 2012. (Winner of the Society of Light and Lighting Leon Gaster Award).
4. MG Figueiro, JA Brons, B Plitnick, B Donlan, RP Leslie, MS Read, "Measuring Circadian Light and Its Impact on Adolescents." *Lighting Research and Technology*, 0:1-15, 2010.
5. Patent (2006), "Self Commissioning Daylight Switching System," with A, Bierman. Patent #7045968.

Professional Memberships:

Society for Building Science Educators, 1984-present
American Solar Energy Society, 1985-96
Daylighting Network of North America, 1985-96
Illuminating Engineering Society of North America, 1988-present
American Institute of Architects, 1991-present

Ivan Markov, Ph.D.

Courses Taught:

Spring 2014	CIVL 4450 Conceptual Structures
Fall 2014	ARCH 2330 Structures 1 ARCH 4330 Structures 2
Spring 2015	CIVL 4450 Conceptual Structures ARCH 4340 Structural Morphology
Fall 2015	ARCH 2330/5140 Structures 1 ARCH 4330/5150 Structures 2

Educational Credentials:
Ph.D., Structural Engineering, Cornell University
M.Sc., Structural Engineering, Cornell University
M.Sc., Architecture, Belgrade University, Serbia
Spec., Structural Engineering, Tech Univ. Delft, The Netherlands
B.Sc., Structural Engineering, Belgrade University, Serbia

Teaching Experience:
2008-present, RPI School of Architecture, Assoc. Professor
2005-2008, Chinese Univ. of Hong Kong, Assoc. Professor- Architecture
2006, Univ. Newcastle (Australia), Dept. Civil Eng., Visiting Professor
2002, Cornell University, Dept. Architecture, Visiting Professor
2000, Tech. Univ. Eindhoven (Netherlands), Visiting Research Professor
1995-2005, Syracuse Univ., Associate Professor

Professional Experience:
2004-present, VOKRAM Consulting, Principal.
1986-87, ARCADE Co. (Netherlands), CAD Engineer.
1985, Building Designer.
1982, Bridge Designer.
1981-86, Field Testing Engineer.
1978, Site Engineer.

Licenses/Registration: n/a

Selected Publications and Recent Research:

1. Markov, I., Conceptual Structures – Hands On, Minds On, 2015 book contract, J. Ross Publishing.
2. Markov, I. "Hands-On, Minds-On for Shells", International Association for Shells and Spatial Structures (IASS) - 2015 Symposium, Amsterdam August 17-20, 2015.
3. Markov, I and C. Constantinou, "Structural Performance Estimate for Curvilinear Surfaces in Conceptual Design," Proceedings of the IASS-SLTE 2014 Symposium "Shells, Membranes and Spatial Structures: Footprints, September 2014, Brasilia, Brazil.
4. Nicholas, P.; Tamke, Martin; Thomsen, Mette; Jungjohann, Hauke; and Markov, Ivan. "Graded Territories: Towards the Design, Specification and Simulation of Materially Graded Bending Active Structures," ACADIA 2012, San Francisco, October 2012.
5. Markov, I; and C. Constantinou, "Structural Performance Estimates for Zero-Curvature and Complex forms," Advances in Architectural Geometry Conferences 2012, Paris, Sept. 2012.

Professional Memberships:
International Association of Shell and Spatial Structure (IASS)
International Assn. of Bridge and Structural Engineering
Building Technology Educators Society

Mark Mistur

Courses Taught:

Spring 2014	Sabbatical
Fall 2014	None
Spring 2015	ARCH 4300 Design Development Studio
Fall 2015	ARCH 4300 Design Development Studio

Educational Credentials:

M.S. Building Conservation, Rensselaer Polytechnic Institute, 2003
B. Architecture, Rensselaer Polytechnic Institute, 1983
B.S. Building Science, Rensselaer Polytechnic Institute, 1983
Professional Studies, Swiss Federal Institute of Technology (ETH) 1981-82

Teaching Experience:

Rensselaer Polytechnic Institute, Associate Dean 1998-05; 2009-
Rensselaer Polytechnic Institute, Acting Dean, 2008-09
Rensselaer Polytechnic Institute, Civil Eng, Co-Appointment, 2008-
Rensselaer Polytechnic Institute, Associate Professor 2005-Rensselaer Polytechnic Institute, Clinical Associate Prof. 1996-05
Rensselaer Polytechnic Institute, Senior Lecturer 1994-96
Rensselaer Polytechnic Institute, Senior Lecturer 1994-96
Rensselaer Polytechnic Institute, Adjunct 1983-85; 1988-94

Professional Experience:

Mark Mistur, Architect, Principal, 1993-
Mistur Riebe Architects, 2004-2010
Glynn, Spillane Griffing, P.C. 1992-93
Crozier Associates, P.C. 1983-92

Licenses/Registration:

New York State No. 019649-1 since 1988

Selected Publications and Recent Research:

Books:

Collection Editor; ***Performance-Based Design*** (a collection of 12 books) – Momentum Press, in progress

Author; ***Performance-Based Design: The Broad View*** *Vol. 1 of collection. Momentum Press, in progress*

Author; with Johannes Goebel, ***The Architecture of EMPAC: The Tangible and the Tantalizing,*** 2011, ORO

Chapters:

Eco-logics: A New Paradigm for the Design of Urban Environments, **Architecture Anthology 1: Sustainable Design**: Athens Institute for Education and Research, 2015

Integrated Praxis: Building an Innovation Ecology, **Practices 7/8,** A Journal of the Center for the Study of Practice, University of Cincinnati - 2006

Papers:

Bridging to the Bicentenary: Collaboratively Educating Engineers and Architects, IABSE Geneva, 2015 with Dr. Christopher Letchford

Design Leadership: Three Pedagogical Pairings for Performative Practice, (ACSA) 2011 Teachers Seminar (June 2011) Proceeding Publication – 2011

Facilitating Collaboration of Engineering and Architecture Students Via An International Travel-Study Workshop, American Society of Engineering Educators (ASEE) proceedings 2010, with Michael Symans, Bruce Danziger

Professional Memberships:

American Institute of Architects (AIA); Continuing Educ. Committee 2013-
Society of Building Science Educators (SBSE)

Brendan D. Moran, Ph.D.

Courses Taught (Four semesters prior to current visit):

Fall 2014
ARCH-2130 Contemporary Design Approaches
ARCH-4140 Modernity in Culture and Civilization
ARCH-4981 B. Arch Final Project 1 – Methods Seminar
ARCH-6810 Research Design Seminar – Criticism
ARCH-6964 Criticism
ARCH-6981 Master's Thesis Methods Research

Spring 2015
ARCH-2140 Building and Thinking 3
ARCH-4050 Cities and Their Territories
ARCH-4120 Modernity in Culture, Civilization and Architecture

Educational Credentials: Ph.D., History & Theory of Arch., Harvard Graduate School of Design.
Master's, Environmental Design, Yale School of Architecture, Yale Univ.

Teaching Experience: 2014-15, Adjunct Professor, Rensselaer School of Architecture
2013-14, Lecturer, Univ. of Toronto, Architecture, Landscape & Design
2008-13, Assistant Professor, Syracuse University School of Arch.
2009, Visiting Professor, Univ. Toronto, Arch., Landscape & Design
2007-09, Lecturer, Columbia University, GSAPP
2004-08, Adjunct Professor, NJIT School of Architecture
2005, Adjunct Professor, Syracuse University School of Architecture
2004-05, Lecturer, Yale School of Architecture
2003 , Instructor, Boston Architecture Center, Syracuse University

Professional Experience: Co-Founder, AD-Hoc (architecture deign), 2012.
Board Member, DoCoMoMo-US, 2002-2008.
Various Design Competitions: African Burial Ground, Pittsburgh Low-Income Housing, Diomede Competitions, TKTS Booth, New Schools for New York, Petrocino Park.
Assisted Kent Larson on computer animations & imagery for Hyper-Realistic (McGraw Hill, 1996) & Ten Houses: Peter Gluck (Rockport Publishers, 1997).

Licenses/Registration: n/a

Selected Publications and Recent Research:

1. Essay: "Architecture in North America Since 1960," in *A Critical History of Global Architecture,* eds. Elie Haddad & David Rifkin (Ashgate, 2014).
2. Essay: "Toward a 'Nation of Universities': Architecture and Planning Education at MIT circa the 1940s," in *A Second Modernism: MIT, Architecture and the "Techno-Social" Moment,* ed. Arindam Dutta (MIT Press, 2013).
3. Essay: "Research," (Lexicon entry), in *Architecture School: Three Centuries of Architecture Education in North America,* ed. Joan Ockman (MIT Press, 2012).
4. Essay: "Modernity w/out Modernity," Proceedings of the Annual Meeting of the ACSA, Washington, D.C., Assn. of Collegiate Schools of Architecture, 2011.
5. Lecture: "The Research University as an Environmental Factor," Oberlin College, Dept. of Art (Environmentalism and architecture Lecture Series); Spring 2010.

Professional Memberships: n/a

Nadarajah Narendran, Ph.D.

Courses Taught (Four semesters prior to current visit):

Prof. Narendran teaches in the graduate Lighting program; he does not teach B.Arch or M.Arch courses.

Educational Credentials: Ph.D., Physics, University of Rhode Island
M.S., Physics, University of Rhode Island
B.S., Physics, University of Peradeniya, Sri Lanka

Teaching Experience: RPI, School of Architecture, Lighting Research Center
2011-present, Professor
2003-11 Associate Professor
1998-present Director of Research, LR
1996-03 Research Associate Professor
1992-96 Adjunct Professor

Professional Experience: 1991-96, Sr. Research Engineer, Mechanical Technology Inc., Latham, NY.
1990, Instructor, Physics Dept., University of Rhode Island.

Licenses/Registration: n/a (holds 24 patents)

Selected Publications and Recent Research:

1. Tan, J. and N. Narendran. An approach to reduce AC LED flicker. Jrnl of Light and Visual Environment 38, 2014.
2. Jayawardena, A., Y. Liu, and N. Narendran, 2013. Analysis of three different junction temperature estimations methods for AC LEDs. Solid State Electronics, 86: 11-16.
3. Sweater Hickcox, K., N. Narendran, J.D. Bullough, and J.P. Freyssinier. 2013. Effect of different coloured luminous surrounds on LED discomfort glare perception. Lighting Research and Technology 45(4):464-475.
4. Chen, K. and N. Narendran. 2013. Estimating the average junction temperature of AlGaInP LED arrays by spectral analysis. Microelectronics Reliability, 53: 701-705.
5. Bullough, J.D., K. Sweater Hickcox, and N. Narendran. 2011. *ASSIST recommends…A method for estimating discomfort glare from exterior lighting systems.* Vol 9, Issue 1, Lighting Research Center: Troy, NY.

Professional Memberships: Committee on Assessment of Solid State Lighting for the National Research Council of the National Academies, 2011-13.
SPIE (International Society for Optics and Photonics).

Ted Ngai

Courses Taught (Four semesters prior to current visit):

Spring 2014	ARCH-4990 Final Project Studio 2
	ARCH-6990 Master's Thesis
Fall 2014	ARCH-4967 Robotic Material Assemblies
	ARCH-4980 Final Project Studio 1
Spring 2015	ARCH-4990 Final Project Studio 2
	ARCH-6980 Master's Project
Fall 2015	ARCH-2820 Architectural Design Studio 3
	ARCH-4967 Robotic Material Assemblies
	ARCH-6980 Master's Project

Educational Credentials: Master of Architecture, Harvard University GSD
B. Architecture Southern California Institute of Architecture (SCI-Arc)

Teaching Experience: 2011-present, RPI School of Architecture, lecturer
2010-11, Pratt Institute, adjunct professor
2010, U.Penn, adjunct professor
2008-11, RPI Ctr for Arch., Science and Ecology, clinical assistant professor
2007-08, RPI School of Architecture, clinical assistant professor
2005-07, RPI School of Architecture, adjunct assistant professor

Professional Experience: 2003-present, atelier nGai, New York City, principal
2003-2008, deixis, New York City, co-principal
2002-2006, U N I Architecture, Cambridge, MA, co-principal
2007, borfax / B.L.U., Cambridge MA
2001, Neil M. Denari Architects, Los Angeles, CA
2000-01, OCDC, Los Angeles, CA, co-principal
2000-01, NBBJ, Los Angeles, CA
1999-2000, Daly Genik Architects, Los Angeles, CA

Licenses/Registration: n/a

Selected Publications and Recent Research:

1. Immaterial World: Transparency in Architecture, XSmall House: North Cambridge, Massachusetts, by Mark Kristall, Monacelli Press, 2011.
2. Building Envelopes An Integrated Approach. By Jenny Lovell, Princeton Architectural Press, 2010.
3. The New Modern House: Redefining Functionalism. Suburban: SX, Sm, M, L Houses, UNI Architects, by Johnathan Bell & Ellie Stathaki, Laurence King Publishing, 2010.
4. "Ethics + Aesthetics: Digital Membrane for an Ecological era," A+U Architecture and Urbanism – New Directions: Sustainability and Technology in New York, Daisuke Hirose, May 2010.
5. SOM Journal 6, AMPS Active Modular Phytoremediation System, 2010.

Professional Memberships: n/a

Michael Oatman

Courses Taught:	**Spring 2014**	ARCH-4240, 4250, 4260 Arch Design 4, 5, 6 - Cinetecture
		ARCH-4931 The Man Next Door (Hitchcock Seminar)
	Fall 2014	ARCH-4240, 4250, 4260 Arch Design 4, 5, 6 - Cinetecture
		ARCH-4961 Duchamp Seminar
	Spring 2015	ARCH-2810 First Year Studio
		ARCH-4961 The Man Next Door (Hitchcock Seminar)
	Fall 2015	ON SABBATICAL

Educational Credentials: Bachelor of Fine Arts, Rhode Island School of Design
Master of Fine Arts, University at Albany
2-year non-degree Sign Painting Apprenticeship, Kershner Signs, Vermont

Teaching Experience:
2009-present RPI School of Architecture, Associate Professor
2006-09 RPI School of Architecture, Clinical Associate Professor
2000-06 RPI School of Architecture, Clinical Assistant Professor
Also taught at RISD, Vermont College, Union Institute and University, St. Michael's College, Harvard University and as a private instructor.

Professional Experience:

2015 "Affinity Atlas," Tang Museum, Skidmore College, Saratoga Springs, NY
2015 "Emanation," Museum of American Glass, Millville, NJ
2015 "The Ties That Bind: Artists and Archives," University Art Museum, Univ. at Albany, NY
2013 Co-curator (w/ Ken Ragsdale), "An Armory Show" Opalka Gallery, Sage College, Albany, NY
2013 "Another Fine Mess," Thompson Gallery, Cambridge School Westeon, Weston, MA, solo exhibition.
2013-14 Curatorial consultant, "Life's Work: Johnny Carrera and Tom Phillips," Massachusetts Museum of Contemporary Art
2011 Co-curator (w/ Leah Rico), SWELL, inaugural exhibition, Contemporary Arts Center, Troy, NY
Gallery Representation: Ellen Miller Gallery in Boston; MillerBlock Gallery in Boston; Lenore Gray Gallery in Rhode Island; Stremmel Gallery in Nevada; Mayson Gallery in NYC; and Miller Yezerski in Boston.
Falling Anvil Studios – art collective in Troy, NY, started by Oatman in 2004.
Extensive international exhibition history since 1985: 200+ shows + lectures + residencies at universities, museums and public venues.

Licenses/Registration: n/a

Selected Publications and Recent Research:

1. MASS MoCA commission of $400,000 (2006-2010) to produce "All Utopias Fell," a permanent installation integrating solar power, historic artifacts and new architecture.
2. ScotiaBank Nuit Blanche 2014, $25,000 commission to produce "8th Wonder," a giant inflatable sculpture for Union Station in Toronto, Ontario, Canada.
3. Schaming, Corinna Ripps, "The Ties That Bind: Artists and Archives," University Art Museum, University at Albany, Albany, NY, exhibition booklet, Feb., 2015.
4. "Big and Bold," Albany Institute of History and Art, Winter/Spring 2014, exhibition brochure.
5. Oatman, Michael and Ragsdale, Ken. "An Armory Show," Opalka Gallery, Sage College, Albany, NY, exhibition catalog.

Professional Memberships: n/a

Zbigniew Oksiuta

Spring 2014	ARCH 4250 Studio Architecture Design 5&6
	ARCH 4962 Seminar
Fall 2014	ARCH 4240, Studio Architecture Design 4
	ARCH 4968 Seminar
Spring 2015	ARCH 2230 Studio Architectural Design 3
	ARCH 4960 Seminar
Fall 2015	ARCH 4260, 4250, Studio, Architecture Design 6 (Rome)
	ARCH-4964.4250, Seminar, (Rome)

Educational Credentials:
1970-78 Master of Architecture, Warsaw Technical University
1979-81 created the Centre for Theatre and Environmental Research, Jelenia Góra
1886-90 studied at Department History of Art, Technical University, Aachen, Germany

Teaching Experience:
2010-present Lecturer, RPI School of Architecture
Also taught at University of Applied Sciences in Cologne, and College of Fine Arts at Illinois State University.

Professional Experience:
1999 Museum of Fragrance, Cologne, in co-operation with Busmann &Haberer,
2002 Art units, Kunsthalle, Kunstverein, Cologne
2003 Second-hand Architecture, Cologne, Poland
2006-2008 La Bulle six coques, France, Germany, Poland
2012-15 General renovation of the one family building, Poland
2006-15 La Bulle six coques, France, Germany, Poland

Licenses/Registration: n/a

Selected Publications:

2013 Zbigniew Oksiuta. Architect. Visionary. Talking about the architecture of the XXI Century, Gazeta Wyborcza, Bialystok, Poland
2014 Zbigniew Oksiuta "House as Bioreactor" For the book "Bio-technoologiczny świat. Bio art oraz sztuka technonaukowa w czasach posthumanizmu i transhumanizmu", Poland
2014 Zbigniew Oksiuta, “Plechy, Spory, Zarodniki” Kwartalnik Rzut, Warsaw, Poland
2014 Zbigniew Oksiuta,“Ja komornik” by Zbigniew Oksiuta, text for book Lodz, Poland
2014, Zbigniew Oksiuta, Habitat Biologiczny (Biological Habitat), Architektura, Dec. 2014, Poland

Recent Research:
1. Spatium Gelatum Technology, studies the rules for forming liquid and gel objects using biological polymers
2. Breeding Spaces, studies the possibilities of breeding living organisms in architectural bioreactors
3. We have weightlessness on Earth, Creating liquid spaces under water using neutral buoyancy
4. The Space Garden, technologies of creating of mini biospheres in Space

Professional Memberships: n/a

Stefano Passeri

Courses Taught:

Spring 2014	n/a
Fall 2014	n/a
Spring 2015	n/a
Fall 2015	ARCH-2800 Architecture Design Studio 1
	ARCH-4980 Final Project Studio 1

Educational Credentials:

M. Arch II, Southern California Institute of Architecture (Gehry Prize for Best Thesis, 2013)
B.Sc., Architecture, Bartlett School of Architecture, London
M.A., Philosophy, Birkbeck College, Univ. of London
B.A., Fine Art, Froebel College, Univ. of Surrey, London

Teaching Experience:

Rensselaer Polytechnic Institute School of Architecture
Lecturer, 2015-16
SCI-Arc
Instructor, 2015
Teaching Fellow, 2013-14
Teaching Assistant, 2011-12

Professional Experience:

1. Journal Founder and Editor, *Offramp*, SCI-Arc Academic Journal, 2013-15.
2. Graduating Class Commencement Speaker, SCI-Arc, 2013.
3. Architect, he LADG, Los Angeles, 2015-present,
4. Architect, Green City Building company, Los Angeles, 2014-present.
5. Designer, Xefirotarch, Los Angeles, 2012-13
6. Designer, HOK (now Populous), London and NYC, 2011-12
7. Designer, Cook Robotham Architecture, London, 207-09.

Licenses/Registration: n/a

Selected Publications and Recent Research:

1. Lecture, “Between Extremism and Shite Noise: Constructing a new Real in Architecture,” presented at 2015 ACSA Fall Conference.
2. Lecture, “Design of Theory Fellowship Lecture,” SCI_Arc Lecture Series, Fall 2014.
3. Passeri, Stefano, “Between Extremism and White Noise: Constructing a New Real in Architecture,” essay in Proceedings of the 2015 ACSA Fall Conference.
4. Passeri, Stefano, “Lies Editorial Note,” in *Offramp 09,* SCI-arc, April 2015.
5. Passeri, Stefano and Hernan Diaz Alonso, “Close-up,” essay in *Architectural Design*, Winter 2014.

Professional Memberships: n/a

Elena Perez-Guembe

Courses Taught (Four semesters prior to current visit):

Spring 2014	ARCH-2230 Architecture Design 3
Fall 2014	Design studios in Rome
Spring 2015	ARCH-2230 Architecture Design 3
	ARCH-4962 Sculpting the Intangible
	ARCH-2630 Graduate Architecture Design 3
Fall 2015	n/a

Educational Credentials: A.A.R. Advanced Architectural Research, Columbia University (2007-08)
M.S. Advanced Architectural Design, Columbia University (2006-07)
B.A. Architecture and M. in Urban Design, Univ. Navarra, Spain (1995-02)

Teaching Experience: 2011-Present RPI School of Architecture, Lecturer
Also served as a critic and as a teaching assistant at Pratt Institute, Univ. Virginia, Columbia Univ., and Barnard College

Professional Experience:

2008-11 Grimshaw Architects, New York City
Projects: Croton Water Treatment Plant,NY (Built)
Competitions: Four Mile Run Bridge, Virginia (1st Prize), Hunter's Point affordable housing, NY (Finalist), New Doha International Airport, Masterplan and key buildings design: Quatar Airways Headquarters (1st Prize)

2004-06 Rafael Moneo's Office, Madrid, Spain
Projects: Aragonia (Built)
Competitions: Kolizej Areal, Ljubljana, Slovenia (2nd Prize), City of Las Palmas' Harbor area, Canary Islands, Spain.

2003-04 Zaha Hadid Architects, London, UK
Projects: Pierres Vives, Projet Herault-Culture Sport, Montpellier. France (Built), Guggenheim Museum Taichung, Taiwan.
Competitions: University of Fine Arts, Connecticut. BBC Music Center, London. UK. (2nd Prize), Afragola Railway Station, Naples. Italy (1st Prize), Urban Planning Beijing, China (1st Prize), EWHA University Campus Center Project, Seoul, South Korea (2nd Prize)

Licenses/Registration: Licensed Architect in Spain since 2002

Selected Publications and Recent Research:

1. 2014. European Ceramic Workcenter Artist in Residence. s'Hertogenbosch. The Netherlands.
2. 2013. Pratt Institute Visiting Scholar, Ceramics Department. NY
3. 2009, Columbia University, Abstract 07-08. "Language is Matter. Use Only Under Competent Supervision."
4. 2008, Columbia University. Abstract 06-07. "New Post-Human Domesticity."
5. 2007. MIT. Smart Geometry 2007, selected Projects. www.sial.mit.edu/au/Projects/Smart_Geometry+Selected_Workshop_Project.php.
6. 2007. Conducted Research at MoMA's Archive for the exhibition "Women Artists at MoMA". Organized by Deborah Wye, Chief curator of Illustrations and Prints Department.

Professional Memberships: HNA Hermandad Nacional de Arquitectos . Spain.

Chris Perry

Courses Taught (Four semesters prior to current visit):

Spring 2014	ARCH-4990 Final Project Studio 2
	ARCH-6990 Master's Thesis
Fall 2014	ARCH-4980 Final Project Studio 1
	ARCH-6980 Master's Project
Spring 2015	ARCH-4990 Final Project Studio 2
	ARCH-6980 Master's Project
Fall 2015	ARCH-4980 Final Project Studio 1
	ARCH-6980 Master's Project

Educational Credentials: Master of Architecture, Columbia University GSAPP
B.A. Philosophy, Colgate University

Teaching Experience: RPI School of Architecture
2014-present Head of Graduate Studies
2011-present Assistant Professor of Architecture
2010-11 Adjunct Assistant Professor
Pratt Institute, 2009-10, Adjunct Assistant Professor
Yale University, 2009-10, Louis I Kahn Visiting Asst. Professor
Also taught at Parsons School of Design, Rice University, Univ. Toronto, Cornell Univ., RMIT University, Columbia University, and Univ. Pennsylvania.

Professional Experience: 2011-present Principal, pneumastudio (design firm)
1999-2010 Principal, servo (design studio)
1997-99 Project Designer, Stan Allen Architect

Licenses/Registration: n/a

Selected Publications and Recent Research:

1. Book: Work by pneumastudio is featured in Post-Sustainability: New Directions in Ecological Design, ed. M. Joachim and M. Silver, Metropolis Books/DAP (forthcoming).
2. Book: Work by pneumastudio is featured in The Atlas of World Housing, DAMDI Publishing Co., Korea.
3. Article: "Expanded Fields: Architecture, Landscape, and Performance," by Cathryn Dwyre and Chris Perry, in PAJ: A Journal of Art and Performance, MIT Press, 2015.
4. Book Chapter: "Geofutures: Visioning Architecture in the Anthropocene," book chapter by Chris Perry, in Visioning Technologies: The Architectures of Sight, ed. Graham Cairns, Ashgate (forthcoming 2015).
5. Article: Perry, Chris, "Asymmetric Phase: Architectural Aesthetics and Performance in the Anthropocene," in Arpa Journal, Janette Kim ed., Columbia GSAPP, 2015 forthcoming.

Professional Memberships:

Mark Rea, Ph.D.

Courses Taught (Four semesters prior to current visit):
Prof. Rea teaches in the graduate Lighting program. He does not teach B.Arch or M.Arch courses.

Educational Credentials:
Ph.D., Biophysics, Ohio State University
M.S., Biophysics, Ohio State University
M.A., Psychology, Ohio State University
B.A., Psychology, Ohio State University

Teaching Experience: RPI School of Architecture, Lighting Research Center
1994-present Professor (and joint-appointment Professor, Cognitive Science)
1988-1994 Associate Professor
1988-present, Director, Lighting Research Center
1988-92 Adjunct Assoc. Professor, Psychology Dept., RPI
1987-88 Adjunct Professor, Psychology Dept., Carleton Univ., Canada

Professional Experience:
1988, Manager, Indoor Environment Program & Sr. Research Officer, National Research Council, Canada
1980-87 Research Officer, National Research Council, Canada
1978-80 Consulting Scientist, National Research Council, Canada
1972-78 Research Associate, Inst. for Research in Vision, Ohio State Univ.

Licenses/Registration: n/a

Selected Publications and Recent Research:
1. Rea, M.S. and Figueiro, M.G. 2014. Non-visual effects of colored light. Handbook of Color Psychology, edited by Andrew J. Elliot and Mark D. Fairchild. Cambridge University Press.
2. Rea, M.S., 2013. Value Metrics for Better Lighting. Bellingham, WA: SPIE Optical Engineering Press.
3. Rea, M.S., Bullough, J.D. and Brons, J.A. 2014. Spectral consideraitons for outdoor lighting: Designing for perceived scene brightness. Lighting Research and Technology.
4. Figueiro, M.G., Plitnick, B.A., Lok, A., Jones, G., Higgins, P. Hornick, T., and Rea, M.S. 2014. Tailored lighting intervention improve sleep, depression and agitation in persons with Alzheimer's disease and related dementia living in long-term care facilities. *Clinical Interventions in Aging*, 9:1527-1537.
5. Rea, M.S. and Figueiro, M.G. 2014. Quantifying light-dependent circadian disruption in humans and animal models. Chronobiology International Special Issue: Shift Work, 31(10: 1239-1246.

Professional Memberships:
Illuminating Engineering Society of North America
Commission Internationale de l'Eclairage de la CIE
Optical Society of America
Society for Light and Lighting (UK)
Chartered Institution of Building Services Engineers (UK)
Society for Research on Biological Rhythms
Society for Light Treatment and Biological Rhythms

M. Casey Rehm

Courses Taught:
Spring 2014 ARCH-6980 Master's Project
Fall 2014 n/a
Spring 2015 n/a
Fall 2015 n/a

Educational Credentials: M.S., Advanced Algorithmic Design, Columbia University
B. Arch, Carnegie Mellon University
Also studied at SCI-Arc and Univ. Wisconsin

Teaching Experience: Rensselaer Polytechnic Institute, School of Architecture
2011-2013 Adjunct Faculty
Pratt Institute
2013 Guest Researcher and Critic
University of Pennsylvania
2010 Lecturer

Professional Experience:
1. Principal, Kinch, a Brooklyn-based studio providing design and consulting services, 2012-present.
2. Project Captain/Senior Designer, Kokkugia, 2010-2011.
3. Algorithmic Design Research Consultant, Cecil Balmond Architect, London and NYC, 2009-12.
4. Designer/Manager, Bureau V, in Brooklyn, NY, 2009.
5. Senior Designer, Graft, Los Angeles, CA, and Berlin, Germany, 2006-2008
6. Junior Designer, Michael Maltzan Architecture, Los Angeles, CA, 2005.

Licenses/Registration: n/a

Selected Publications and Recent Research:
1. Core 77, 2013, Video interview and cited images of involvement with the New Skins workshop on 3D printed fashion.
2. SuckerPunch, 2013, Student work from a studio taught at Rensselaer Polytechnic Institute, focused on utilizing multi-agent systems toward production of affective drawings.
3. "Embrace Complexity," essay included in book to an exhibition curated by SuckerPunch, Univ. Kentucky Architecture Dept. and the Land of Tomorrow gallery in Lexington, KY, 2013.
4. Audi Experiments in Motion Exhibition, 2012, New York City. Audi's exhibition concluding a one-year research partnership with Columbia University, developed a 40-foot animated map of New York's transportation system. The map networked to real-world data from MTA's servers and presented representation on traffic for subway, bike, bus and ferry traffic in Manhattan.
5. Swarm Intelligence," 2011, exhibition in Shanghai, China, curated by Neil Leach in collaboration with USC and Tongji University. Images and text of my project, "Agency and Figuration," included in both the exhibition and catalog.

Professional Memberships: n/a

Alexandra R. Rempel, Ph.D.

Courses Taught (Four semesters prior to current visit):

Spring 2014: ARCH 2370: Energy, Comfort, and Ecology
ARCH 2360: Environmental and Ecological Systems
Fall 2014: ARCH 4960: Bioclimatic Design
ARCH 6320: Built Ecologies I
Spring 2015: ARCH 2370: Energy, Comfort, and Ecology
ARCH 2360: Environmental and Ecological Systems
Fall 2015: ARCH 2800: Architectural Design Studio I (Building Science section)

Educational Credentials: M. Arch., University of Oregon
Ph.D. Biology, Massachusetts Institute of Technology
B.A. Biochemistry, Harvard College

Teaching Experience: 2014-present RPI School of Architecture, Assistant Professor
2011-14 Univ Oregon, Environ. Studies Program, Research Asst. Professor
2012-13 Boston Architectural College, Online Instructor
2006-08 Univ. Oregon, Graduate Teaching & Research Fellow
1999-2005 Colorado School of Mines, Env.. Sci & Eng., Assistant Professor
1996-1999 Duke University, School of the Environment, Assistant Professor

Professional Experience: 2009-11 Solarc Architecture & Engineering, building scientist
2008, BCRA Architecture & Engineering, Visiting Building Scientist

Licenses/Registration: In process

Selected Publications and Recent Research:

1. 2016, Rempel AR, Rempel AW, Gates KR, Shaw B. "Climate-Responsive Thermal Mass Design for Pacific Northwest Sunspaces," Renewable Energy, 85:981-993.
2. 2015, Rempel AR, Remington SJ. "Using GenOpt with EnergyPlus for Optimizing Passive Cooling Controls," Proc. Symp. Simulation and Urban Design, Washington, DC, April 12-15.
3. 2013, Rempel AR, Rempel AW, Gates K, Shaw B. "Oregon Sunspace Redesgin/Build: New Priorities for Thermal Mass." Proc. Am. Solar Energy Society Annual Conference, Baltimore, MD.
4. 2013, Rempel AR, Rempel AW. "Rocks, Clays, Water, and Salts: Highly Durable, Infinitely Rechargeable, Eminently Controllable thermal Batteries for Buildings," Geosciences, 3:63-101.
5. 2013, Rempel AR, Rempel AW, Cashman K, Page C, Gates K, Shaw B. "Interpretation of Passive Solar Field Data with EnergyPlus Models: Un-conventional Wisdom from Four Sunspaces in Eugene, Oregon," Building and Environment, 60:158-172.

Professional Memberships:

1. American Solar Energy Society
2. Society of Building Science Educators
3. American Institute of Architects

Service:

1. 2013-present, Secretary and Treasurer, Society of Building Science Educators
2. 2013-present, Technical Reviewer, Annual Meetings of the American Solar Energy Society
3. 2015, Technical Reviewer, Symposium on Simulation in Urban Design
4. 2013, Technical Reviewer, National Science Foundation, Environmental Sustainability Program (Engineering Directorate)

Andrew Saunders

Courses Taught (Four semesters prior to current visit):

Spring 2014 ARCH-2220 Architecture Design 2
ARCH-2620 Graduate Architecture Design 2
ARCH-4240, 4250, 4260 Architecture Design 4, 5, 6
Fall 2014 n/a
Spring 2015 n/a
Fall 2015 n/a

Educational Credentials: M. Architecture, Harvard Graduate School of Design
B. Architecture, University of Arkansas

Teaching Experience: 2007-14 RPI School of Architecture, Asst Professor and Publications Director
2004-07 RPI School of Architecture, Clinical Professor
2006-07 Cranbrook Academy of Art, Visiting Lecturer
2002-04 Harvard Graduate School of Design, Teaching Assistant
2001-02 Cooper Union, Adjunct Professor
1998 University of Arkansas, Teaching Assistant

Professional Experience: 2004-14 Founder, Andrew Saunders Design Studio, Troy, NY
2002-04 Lead Project Designer, Preston Scott Cohen Architects, MA
2000-02 Lead Project Designer, Eisenman Architects, NYC
1999-00 Lead Project Designer, Thomas Leeser Architects, NYC
1999 Design Consultant, David Weiner Architects, NYC
1999 Design Consultant, World Space Corp., NYC

Licenses/Registration: n/a

Selected Publications and Recent Research:

1. Invited contribution in *Architecture In:Formation*, Chapter Title: Information Affect discusses the role of deep structures relative to the output of information in spatial perception. Routledge, 2012.
2. A. Saunders: "Building Fjutures: Re-Envisioning The Hyde at Rensselaer," Essay collection. Published by The Hyde Collection, 2012.
3. "Material Manifestations: Cultural and Material Affects of Shaker Artifacts," Journal of Architectural Education (JAE), 66:2, Architecture and Utopia, 2012.
4. "Sartorial Tectonics: Installation for the Hyde Collection," Juried Project: ACADIA 2012 Synthetic Digital Ecologies: project catalogue of the 32nd annual conference, pp 72-77, 2012.
5. Exhibition: Wild Cards, peer-reviewed ACADIA projects and curated projects from emerging West Coast design firms, California College of the Arts, San Francisco, 2012.

Professional Memberships: American Institute of Architects, Associate Member (AIA)
National Council for Architecture Registration Boards (NCARB)
Association for Computer Aided Design in Architecture (ACADIA)
Association of Collegiate Schools of Architecture (ACSA)

Peter R.H. Stark

Courses Taught:

	Spring 2014	ARCH-4968 Built Ecologies 1
	Fall 2014	n/a
	Spring 2015	n/a
	Fall 2015	n/a

Educational Credentials: Ph.D., Biophysics, Harvard University
M.S., Physics, San Jose State University
B.S., Mechanical Engineering, Rensselaer Polytechnic Institute

Teaching Experience: Rensselaer Polytechnic Institute
Assistant Professor, 2011
Clinical Associate Professor, 2010
Harvard Medical School
Faculty Research Associate
Senior Physicist/Technical Director

Professional Experience:

1. HeliOptix, LLC, Founder and Chief Technology Officer
2. Tissue Regeneration/Serica Technologies, Member of Scientific Advisory Board
3. Arthur D. Little, Inc., Physicist/Sr. Consultant
4. Arthur D. Little, Inc., Mechanical Engineer/Consultant

Licenses/Registration: n/a

Selected Publications and Recent Research:

1. Exhibition, "For the Greener Good: Conversations that Will Change the World," National Building Museum, Washington, DC, 2012.
2. "World Future Energy Summit 2011," Abu Dhabi, UAE. International annual meeting for renewable energy and environment industry. With USA Pavilion: Skidmore, Owings & Merrill LLP/CASE.
3. "Integrate / Innovate," IC Solar Façade System, Center for Architecture, New York, NY, 2010.
4. Dyson, A.H., Stark, PRH, Gruen, S.E. & Jensen, M.K. *Integrated Concentrating Solar Façade System,* DOE Solar Energy Technologies Program Peer Review, Denver, CO, 2009.
5. Start, PRH, Halleck, A.E., & Larson, D.N. *Breaking the Diffraction Barrier Outside of the Optical Near-Field with Bright, Collimated Light from Nanometric Apertures.* Proceedings of the National Academy of Sciences of the United States of America, 2007.

Professional Memberships:
Optical Society of America (OSA), member
Institute of Electrical and Electronic Engineers (IEEE), member
Materials Research Society (MRS), member

Anthony Titus

Courses Taught (Four semesters prior to current visit):

Spring 2014:
Arch 2210 01 - Architecture Design 1
Arch 4696 - The Architecture of the Screen – Seminar
Fall 2014:
Arch 2800 01 - Architectural Design Studio 1
Arch 2160 01 - Architectural Media
Spring 2015:
Arch 2810 01 - Architectural Design Studio 2
Arch 4070 - Twisted Siblings - Seminar
Fall 2015:
Arch 2800 01 - Architectural Design Studio 1
Arch 2160 01 - Architectural Media

Educational Credentials: Master of Fine Art, Univ. Chicago, Committee of the Visual Arts
B. Architecture, Cooper Union

Teaching Experience: 2011-present RPI School of Architecture, Assistant Professor
2009-2011 RPI School of Architecture, Clinical Professor
2002-2011 Cooper Union Irwin S. Chanin School of Architecture
2005-2011 Pratt Institute School of Architecture

Professional Experience:
2015 – group exhibition, " Measure," Storefront for Art and Architecture, NYC
2015 – group exhibition, " Accrochage," Friedman Benda, NYC
2013-15 – group exhibition, "Vienna for Art's Sake!"
2014 – solo exhibition, "Surface Mining," Cornell University.
2014 – solo exhibition, "Marginal Tactics," U. Wisconsin-Milwaukee
2012 – solo exhibition, "Sleeping Life," Rensselaer Black Box Gallery

Licenses/Registration: n/a

Selected Publications and Recent Research:

1. The Reality of Ideals, Slow Manifesto Lebbeus Woods, Claire Jacobson (ed), 201
2. Ends and Beginnings, Slow Manifesto Lebbeus Woods, Claire Jacobson (ed), 2015
3. Christoph a. Kumpusch PhD. Detail Culture, 2015 (Upcoming)
4. Peter Noever, Vienna for Art's Sake! - Exhibition Catalog, 2014,
5. Anthony Titus, Afterword, The Great White Whale is Black, The Work of Anthony Candido, 2014
6. Upcoming Essay, Cloud Architecture Publication, Carla Leitao (ed) 2015
7. *Eyes To The Ground, Visionary Notions Of The Urban Landscape*, Urban Hopes, Made In China By Steven Holl, Christoph a. Kumpusch (ed), 2014

Professional Memberships:
Alpha Ro Chi
National Professional Fraternity for Architecture and the Allied Arts

Jason O. Vollen, RA, NCARB

Courses Taught:

Spring 2014	ARCH-6340.8 Materials Systems & Productions (CASE
Fall 2014	n/a
Spring 2015	n/a
Fall 2015	n/a

Educational Credentials: Master of Architecture II, Cranbrook Academy of Art
Bachelor of Architecture, Cooper Union

Teaching Experience:
Rensselaer Polytechnic Institute
Associate Professor with tenure, 2008 - 2014
Associate Director, Center for Architecture, Science and Ecology (CASE)
University of Arizona
Research Affiliate, 2009-10
Assistant Professor, 2003-2008
Also taught at New York Institute of Technology, Mississippi State Univ., and Cranbrook Academy of Art.

Professional Experience:

1. Owner/Founder, Regenerative Building Technologies Ltd., New York City.
2. Partner, Merge Studio, New York City.
3. Founder/Principal, Binary Design, Tucson, AZ
4. Consultant, Matter Architecture Practice, Brooklyn, NY
5. Designer/Project Manager, Zaretsky Architect, P.C., New York City
6. Designer in Residence, Jackson Community Design Center, Jackson, Mississippi
7. Project Designer/Fabricator/Foreman, Cranbrook Architecture Office, Bloomfield Hills, MI

Licenses/Registration: Licensed Architect in New York State.

Selected Publications and Recent Research:

1. Vollen, Jason, "Intertwining Ecologies: Bioenergetics and Ecosophy," and "Material Composition and Performance: Ceramics and Concrete," invited book chapters in Emerging Material Technologies in Architecture, ed. By Alvaro Malo, Earthscan Publications, London, UK, 2013.
2. Vollen, Jason and Dale Clifford, "Porous Boundaries," invited book chapter, Matter: Material Processes in Architectural Production, ed. By Gail Peter Borden, Michael Meredith, Routledge Press, Taylor and Francis Group, 2011.
3. Menicovich, D., Vollen, J., Amitay, M., Letchford, C., DeMauro, E., Rao, A., Dyson, A. "A Different Approach to the Aerodynamic Performance of Tall Buildings," CTBUH Journal, 2012, Issue IV (solicited).
4. Dyson, Anna, Jason Vollena and Ted Ngai, "BIM: Bioenergetic Information Modeling," The Yale BIM Symposium, 2011.
5. Kelly Winn, Jason Vollen, Anna Dyson. "ReFraming Architecture for Emerging Ecological and Computational Design Trends for the Built Ecology," 2012 ACADIA Conference, San Francisco, CA, 2012.

Professional Memberships:
ACORE – American Council on Renewable Energy, member
AzRISE – Arizone Research Institute for Solar Energy, affiliate member
CTBUH – Center for Tall Buildings and Urban Habitats, committee member
NCARB – National Council for Architecture Registration Boards, certification

Ning Xiang, Ph.D.

Courses Taught (Four semesters prior to current visit):

Spring 2014	ARCH-6880	Sonics Research Lab 2
Fall 2014	ARCH-6840	Engineering Acoustics
	ARCH-6870	Sonics Research Lab 1
Spring 2015	ARCH-6880	Sonics Research Lab 2
Fall 2015	ARCH-6840	Engineering Acoustics
	ARCH-6870	Sonics Research Lab 1

Educational Credentials: B.S., Tianjin University, China
M.S., Ruhr University, Bochum, Germany
Ph.D., Ruhr University, Bochum, Germany

Teaching Experience: 2003-present, Associate Professor, Acoustics Program, RPI School of Architecture

Professional Experience: 1998-03, Research Scientist and Research Associate Professor, National Center for Physical Acoustics, Dept. Electrical Engineering, Univ. Mississippi.
1997, Research Scientist, Fraunhofer Institute for Building Physics, Germany.
1990-96, Research Scientist/Engineer, Head of Acoustics Inc., Germany.

Licenses/Registration: n/a

Selected Publications and Recent Research:

1. Xiang, N. and Sessler, G. (2015): *Acoustics, Communication and Information – Memorial Volume in Honor of Manfred R. Schroeder*, Springer.
2. Xiang, N., Xie, B.-S. and Cox, Trevor J. (2015), Recent applications of number-theoretic sequences in audio and acoustics,in *Acoustics, Communication and Information – Memorial Volume in Honor of Manfred R. Schroeder*, ed. N. Xiang and G. Sessler, Springer, pp. 93-111.
3. Xiang, N. (2015), Advanced Room-Acoustics Decay Analysis, in *Acoustics, Communication and Information – Memorial Volume in Honor of Manfred R. Schroeder*, ed. N. Xiang and G. Sessler, Springer, pp. 33-56.
4. Xiang, N. (2015), Advances of Acoustics Research in Coupled Spaces, *ACTA ACUSTICA* (in Chinese), **40**, in press.
5. Xinag, N., Bush, D. and Summers, J. (2015), Experimental validation of a coprime linear microphone array for high-resolution direction-of-arrival measurements, *J. Acoust. Soc. Am Express Letters*, **137**, in press.

Professional Memberships: IEEE Geoscience & Remote Sensing Society, Signal Processing Soc.
German Acoustical Society
Audio Engineering Society
Acoustical Society of America, Fellow
Institute of Acoustics (UK), Fellow

Faculty Matrices

Faculty Matrix – Fall 2013 and Spring 2014

Faculty Member	Summary of expertise, recent research, or experience (25-word limit)	Course Number	Course Name	Course Number	Course Name	Course Number	Course Name	Course Number	Course Name	Course Number	Course Name	Course Number	Course Name
Tenured Faculty													
Bell, David	Assoc. Professor; has taught for 38 years. A licensed architect, his expertise is in history, theory, and criticism and currently writes on these subjects.	ARCH-2110	Building & Thinking I	ARCH-2220	Arch Design 2 studio	ARCH-2620	Graduate Arch. Design 2	ARCH-2020	Building and Thinking 2	ARCH-4250	Arch Design 5	ARCH-4260	Arch Design 6
Bell, cont'd.		ARCH-4240	Arch Design 4										
Braasch, Jonas	Assoc. Professor; Director of Center for Cognition, Communication and Culture. Faculty member since 2006. Acoustics focus. Ph.D-musicology and electrical eng, Ruhr University, Germany. Undergrad degree in physics.	ARCH-4860/ 6860	Applied Psychoacoustics	ARCH-6890	Aural Architecture								
Dyson, Anna	Director of Center for Architecture, Science and Ecology in NYC, since 2008. Expertise in next-generation building materials. Full professor.	ARCH-4932	Environmental History & Theory (at CASE)	ARCH-6310	Environmental History & Theory (at CASE)	ARCH-6320	Built Ecologies I (at CASE)	ARCH-6330	Built Ecologies 2 (at CASE)				
Figueiro, Mariana	Full Professor at RPI, Joined faculty 2006. Focus: Lighting, human factors and human health. Ph.D. multidisciplinary science, RPI. MS Lighting-RPI. BS Architecture & Urbanism, Fed. Univ. Minas Gerais in Brazil.	LGHT-4840	Human Factors in Lighting	LGHT-6770	Light & Health								
Krueger, Ted	Associate Professor, joined faculty in 2001. Ph.D.-Architecture, Royal Melbourne Institute of Technology. M Arch, Columbia University, BA Sociology, University of Wisconsin-Madison. 12-years of Professional Practice in NYC.	ARCH-1974.50	Italian Culture and Language (study-abroad program in Rome)	ARCH-4240.50	Arch Design 4 studio (in Rome)	ARCH-4964.50	Sensors and Senses (in Rome)	ARCH-4966.50	Urban & Arch. History of Rome (in Rome)				
Krueger, Ted	*(Continued)*	ARCH-2230	Arch Design 3 - coordinator	ARCH-2630	Grad Arch Design 3 - coordinator	ARCH-4967	Tool Theory						
Leslie, Russ	Full Professor. Associate Director of Lighting Research Center. Lighting specialty.	Prof. Leslie teaches in the graduate Lighting program. He does not teach B.Arch or M.Arch courses.											
Mistur, Mark	Assoc. Professor and Assoc. Dean. MS Bldg Conservation, B.Arch, B.S. Bldg Sci. – RPI. Licensed Architect in NYS. Leads initiatives in interdisciplinary A/E education;	ARCH-4300	Design Development Studio		Sabbatical – Spring 2014								

	performance based design and design/technology integration.												
Narendran, Nadarajah	Full Professor. Lighting specialty.	Prof. Narendran teaches in the graduate Lighting program. He does not teach B.Arch or M.Arch courses.											
Oatman, Michael	Associate Professor and Artist-in-Residence. BFA-Painting-RISD; MFA-Painting-SUNYA. Internationally exhibited; Graves Foundation Prize, 2003. "Art in America" since 2005. $400,000 Commission MASSMoCA.	ARCH-4240 ARCH-4250	Arch Design 4 studio Arch Deign 5 studio	ARCH-4260	Arch Design 6 studio	ARCH-4961	Duchamp Seminar: Anarchism Umped	ARCH-4240 ARCH-4250	Arch Design 4 Arch Design 5	ARCH-4260	Arch Design 6	ARCH-4931	The Man Next Door: A. Hitchcock & The Architecture of Fear
Rea, Mark	Full Professor, Director of Lighting Research Center, PhD Ohio State, Research expertise: modeling human visual response to light, development of analytical techniques to quantify circadian disruption.		Prof. Rea teaches in the graduate lighting program. He does not teach B.Arch or M.Arch courses.										
Vollen, Jason	Was Assoc. Professor; left in 2014. Was Assoc. Director of CASE, research focus on Environmental sustainability.	ARCH-4960	Material Systems and Productions (at CASE)	ARCH-6340	Material Systems & Productions (at CASE)	ARCH-6360	Interdisciplinary Research						
Xiang, Ning	Obtained doctoral degree in architectural acoustics with six years industry experience developing acoustics measurement techniques. Interests include performance hall acoustics, noise, and acoustics in healthcare.	ARCH-6840	Engineering Acoustics	ARCH-6870	Sonics Research Lab 1	ARCH-6860	Sonics Research Lab 2						
Tenure-Track Faculty													
Combs, Lonn	Registered Architect NY-MA-TX-Germany, NCARB Certification. Co-founder/principal Easton+Combs in NYC and MA. Asst. Professor since 2011.	ARCH-4300	Design Development Studio	ARCH-4690	Case Studies	ARCH-4300	Design Development						
Crembil, Gustavo	Asst. Professor since 2009; became tenured Assoc. Professor July 2015. M Arch, Cranbrook Academy of Art; Professional Architect Diploma from Universidad de Cordoba in Argentina.	ARCH-4980	B. Arch Final Project I (studio)	ARCH-6990	Master's Thesis M. Arch	ARCH-4965	Latin American Architecture	ARCH-4990	B Arch Final Project 2	ARCH-6990	Master's Thesis		
Markov, Ivan	Ph.D., M.Sc.-Structural Eng.-Cornell Univ., M.Sc. Architecture, B.Sc. CEE from Belgrade Univ. Designed and load-tested buildings and bridges. Research in structural morphology and fragility.	ARCH-2330	Structures I	ARCH-4330	Structures II	CIVL-4450	Conceptual Structures Systems						
Perry,	MArch-Columbia; BA-Colgate.	ARCH-	B. Arch Final Project	ARCH-	B. Arch Final	ARCH-	Master's Thesis	ARCH-	Master's Thesis				

Christopher	Asst. Professor (2011-Present). Head of Graduate Studies (2014-Present). Former Louis Kahn Visiting Asst. Professor, Yale. Principal, servo (1999-2010). Principal, pneumastudio (2011-Present). Focus: Environment.	4980	I (studio) - coordinator	4981	Project I – Methods Seminar	6981	Methods Research seminar	6990	M. Arch				
Perry, Christopher	*(Continued)*	ARCH-4990	B Arch Final Project 2 - coordinator	ARCH-6990	Master's Thesis	ARCH-6962	Geofutures Colloquium						
Saunders, Andrew	M Arch – Harvard; B Arch – Univ Arkansas. Asst. Prof.2007-14. Founder and Principal of Andrew Saunders Design Studio, Troy, NY.	ARCH-2220	Arch Design 2 studio - Coordinator	ARCH-2620	Graduate Arch Design 2	ARCH-4250	Arch Design 5	ARCH-4260	Arch Design 6	ARCH-4240	Arch Design 4		
Stark, Peter	Was Assistant Professor; left in 2014. Background in Biophysics and Engineering, with interests in interdisciplinary/sustainability research.	ARCH-4968	Built Ecologies I (at CASE)										
Titus, Anthony	Assistant Professor since 2011. B Arch-Cooper Union; MFA-Univ. Chicago.	ARCH-2200	Design Studio (First-year) - Coordinator	ARCH-4968	Twisted Siblings: Relationship Between Contemporary Art & Arch (seminar)	ARCH-2210	Arch Design 1 - coordinator	ARCH-4969	Arch of the Screen: Relationships Between Films and Architecture				
Watson, Julia	Tenure-track assistant professor who left abruptly in mid-semester. G. Sarhos was hired to cover her courses. Background in Landscape Architecture.	ARCH-4240	Arch Design 4 studio	ARCH-4250	Arch Design 5 studio	ARCH-4260	Arch Design 6 studio	ARCH-4962	Principles and Practices of Landscape Arch.				
Lecturers and Professors of Practice, Bedford Chair, and LRC Non-tenure-track Faculty													
Bierman, Andrew	MS in Lighting degree; holds 3 patents in lighting technologies; has over 20 years of experience conducting research in lighting controls, photometry, and systems.	LGHT-4770	Lighting Tech and Applications										
Brons, Jennifer	MS in Lighting degree; has worked for an international lighting design firm; has over 15 years of experience in lighting design, analysis, and evaluation.	LGHT-4230	Lighting Design										
Comodromos, Demetrios	Professor of Practice; managing partner/owner 12- person Method Design Architecture and Urbanism in NYC. Registered Architect in NY-NJ-PA-DE-CT. MS Advanced Arch Design, Columbia; B Arch/BS, RPI.	ARCH-4240 ARCH-4250	Arch Design 4 studio (at CASE) Arch Design 5 studio (at CASE)	ARCH-4260	Arch Design 6 (at CASE)	ARCH-4360	Graduate Arch Design 4 (at CASE)	ARCH-4971	Environmental Parametrics (at CASE)	ARCH-6965	Enrivonmental Parametrics (at CASE)	ARCH-6967	Environmental Parametrics Workshop I (at CASE)
Comodromos, Demetrios	*(Continued)*	ARCH-2510	Materials & Design	ARCH-4250	Arch Design 5 in NYC	ARCH-4260	Arch Design 6 in NYC	ARCH-4560	Materials and Enclosures	ARCH-4965	Environmental Parametrics (NYC)		
Dayem,	Registered Architect (NY) and	ARCH-	Arch Design 2 studio	ARCH-	Arch Design 1								

Adam	educator based in Brooklyn. Founded actual/office in 2004. B Arts in Architecture from U Calif-Berkeley. M Arch from Columbia.	2220		2210									
Freyssinier, Jean Paul	MS in Lighting degree; two patents in lighting technologies; over 20 years of experience in lighting engineering and technology research.	LGHT-4770	Lighting Tech and Applications										
Ghoche, Ralph	Lecturer. Doctoral student at Columbia Univ. Expertise in history, theory, criticism.	ARCH-4140	Modernity in Culture and Architecture	ARCH-6810	Research Design Seminar	ARCH-6860	Research Design Seminar: Criticism I	ARCH-6964	Criticism (M Arch)	ARCH-2140	Building and Thinking 3	ARCH-4040	Cities and Lands
Gindlesparger, Matthew	Lecturer in CASE program. Sustainability expertise. M. Arch degree.	ARCH-4960	Material Systems and Productions (at CASE)	ARCH-6962	Advanced Integrated System Prototype (at CASE)	ARCH-2360	Environmental & Ecological Systems	ARCH-4964/ 6340	Material Systems & Production (NYC)				
Hower, James Fleet	Lecturer. BA-English-Georgetown Univ; M Arch and M Landscape Arch, both Univ. Pennsylvania. Fleet Hower LLC is a design office in New York.	ARCH-2200	Design Studio (First Year) – Computing Component	ARCH-4240 ARCH-4250	Arch Design 4 studio Arch Design 5 studio	ARCH-4260	Arch Design 6 studio	ARCH-4963	Sublime Bodies	ARCH-6960	Computation I	ARCH-6966	Fabrication
Hower, James Fleet	*(continued)*	ARCH-2210	Arch Deisgn 1 – Computing Component	ARCH-2230 2630	Arch Design 3 Grad Arch Design 3	ARCH-6960	Fabrication	ARCH-6961	Computation III				
Ngai, Ted	Lecturer. Recent research: Self-Assembling and Robotic Material Systems, Bio /Geo Chemical Landscapes, Building Systems Integration. Past research: active modular phytoremediation system, rapid manufacturing, computational geometry, GIS.	ARCH-4967	Urban Data Analysis and Visualization	ARCH-4980	B. Arch Final Project studio	ARCH-6990	Master's Thesis M. Arch	ARCH-4990	B Arch Final Project 2	ARCH-6990	Master's Thesis		
Oksiuta, Zbigniew	Lecturer. Studied architecture at Warsaw Technical Univ., Poland; and history of art at the Technical Univ. in Aachen, Germany.	ARCH-4240	Arch Design 4 studio	ARCH-4250	Arch Design 5 studio	ARCH-4260	Arch Design 6 studio	ARCH-4250	Arch Design 5	ARCH-4260	Arch Design 6	ARCH-4962	Next Nature, Next Architecture
Perez-Guembe, Elena	Lecturer. MS AAD and AAR Columbia University; M. Urbanism and BA Arch Univ. Navarra, Spain. Licensed Architect in Spain. EKWC residence award (2013-14) in the Netherlands.	ARCH-2230	Arch Design 3	ARCH-2230	Graduate Arch Design 3								
Rehm, Casey	Lecturer. Design and consulting with advanced algorithmic design study.	ARCH-2220	Arch Design 2 – Computing Component	ARCH-2220	Arch Design 2 studio	ARCH-2620	Graduate Arch Design 2 studio	ARCH-2620	Graduate Arch Design 2 – computing component	ARCH-6980	Master's Project M Arch II (w/Oksiuta)		
Stein, Michael	Bedford Chair 2010-13. Managing Director of NY office of Schlaich Bergermann and Partner LP. Structural Engineer. Degrees from	ARCH-4965 (with Civ Eng	Bedford Seminar: Advanced Building	ARCH-4020 (with Civ Eng	Bedford Architecture Engineering Seminar								

	Univ Stuttgart and AKAD Univ., both in Germany.	4965)		4020)									
Adjunct Faculty													
Bitonti, Francis	M Arch-Pratt Institute; BFA-Digital media-Long Island University. Founder/Director of Francis Bitonti Studio in NYC.	ARCH-2200	Design Studio (First year)	ARCH-2230	Arch Design 3	ARCH-2230	Graduate Arch Design 3						
Brooks, Todd	Adjunct since 2009. Associate at Arup in NYC. PhD candidate at Yale Univ. MS mechanical Eng, BS physics with minor in music.	ARCH-4840	Architectural Acoustics I	ARCH-4850	Architectural Acoustics 2								
Erel, Yael	Registered Architect-NY-Israel. Post-professional MArch from RPI; BArch from Cooper Union. Expertise in lighting. Holds 1 patent. Experience teaching architecture studio since 2004.	ARCH-2200	Arch Design Studio (First Year)	ARCH-2210	Arch Design 1								
Holmes, Oliver	Adjunct faculty. Independent consultant on energy and sustainability projects. Trainer of sustainability programs for Urban Green Council, BS mechanical eng.-Syracuse Univ. BS mathematics-SUNY Oneonta.	ARCH-4750	Sustainable Building Design Metrics	ARCH-4740	Building Systems & Environments	ARCH-4730	Sustainable Building Design Strategies						
Ionescu, Serban	B Arch-Pratt Institute. Established Serban Ionescu Studio in Brooklyn in 2010.	ARCH-2210	Arch Design 1										
Keller, Edward	Faculty at Parsons New School for Design. Architectural design and imaging, media specialty.	ARCH-4980	B. Arch Final Project I (studio)	ARCH-6990	Master's Thesis M Arch								
Laflin, Courtney	Registered architect. Founder of Bldgworks in NYC. BIM specialty. M.Arch and MBA.	ARCH-2350	Construction Systems										
Leitao, Carla	Licensed architect in Europe. Co-founder / Principal Speculatis Aeterna; AUM Studio in NYC. Ph.D. candidates at EGS, Saas-Fee in Switzerland. MS Columbia Univ.	ARCH-4990	B Arch Final Project 2	ARCH-6990	Master's Thesis								
Liu, Edwin	B Arch Calif. State Polytechnic; MS Arch. Design, Columbia Univ. Principal of ISOFORM, a design consultancy.	ARCH-2200	Design Studio (First-year)	ARCH-2230	Arch Design 3	ARCH-2630	Grad Arch Design 3						
Minosh, Peter	Adjunct. Doctoral candidate at Columbia, specialty in architectural history and theory. Graduate Rensselaer SoA.	ARCH-2130	Contemporary Design Approaches										
Phillips, Kenton	Adjunct. B.S. mechanical engineering – RPI. Research Specialist at CASE in NYC.	ARCH-4962	Research Investigations (at CASE)	ARCH-6810	Research Design Seminar (at CASE)	ARCH-6960	Research Investigations: Proj. Built Ecologies (at	ARCH-4936	Investigations: Projects in Built Ecology	ARCH-6900	Graduate Thesis Seminar		

							CASE) w/ Gindlesparger						
Pincus, Alexander	M Arch Columbia Univ. Co-founder and principal of Bureau V, a NYC architecture studio. Focus: high-performance environmental enclosures.	ARCH-2220	Arch Design 2 studio	ARCH-2620	Graduate Arch Design 2 studio	ARCH-4300	Design Development						
Pocorobba, John	Adjunct. Registered architect NY-MA-MI-VA. LEED accredited. NCARB certification. B Arch and BS – RPI. Deputy Commissioner for Capital Programs – NYS. Former managing partner and VP Operations for EYP Arch and Eng in Albany, NY.	ARCH-4540	Professional Practice I										
Rainey, Theresa	BS-Mechanical Eng-Oregon State Univ. LEED Accredited. 2006-present – Associate Director at Skidmore, Owings & Merrill in Washington, DC. Focus: sustainable engineering.	ARCH-6965	Energy & Systems Simulation II (NYC)										
Reilly, Stephen	23 years professional experience; Planning Board Commissioner; National Repositioning Ambassador, AIA; Guest Speaker/Peer Reviewer APTI; Adjunct since 2000; Partner, Lacey Thaler Reilly Wilson, LLP.	ARCH-4540	Professional Practice I										
Sarhos, Gabriela	Adjunct. Hired mid-semester to cover courses of J. Watson. Designer with interest in ecologies of human settlements. Principal Sarhos Design, Albany, NY.	See Watson.											
Stover, Kyle	M Arch-Yale; BS Arch-Univ Cincinnati. Founded (2013) Kyle Rx Stover Architecture and Design in NYC.	ARCH-2220	Arch Design 2 studio	See below for courses taught while in China on study-abroad semester with students.									
Thomsen, Lauren	AIA, LEED AP BD + C, architect at EYP Architecture and Engineering, working on large scale higher education and government projects. Interest in high performance building design.	ARCH-4300	Design Development – computing component										
Van de Riet, Keith	Adjunct. Ph.D. and M.S. Arch Sciences – RPI. B Arch Univ. Kansas. Focus: Built Ecologies.	ARCH-6963	Energy and Systems Simulation I (at CASE)	ARCH-6965	Energy & Systems Simulation II (NYC)								
Willems, Danielle		ARCH-2200	Design Studio (First Year)										

Note: Kyle Stover taught the following courses to students who were in China on a study-abroad semester:

ARCH-4250	Arch Design 5
ARCH-4260	Arch Design 6
ARCH-4966	Chinese Architecture and Urbanism
ARCH-4974	Chinese Language and Culture
ARCH-4975	Calligraphy Painting

Faculty Matrix – Fall 2014 and Spring 2015

Faculty Member	Summary of expertise, recent research, or experience (25-word limit)	Course Number	Course Name	Course Number	Course Name	Course Number	Course Name	Course Number	Course Name	Course Number	Course Name	Course Number	Course Name
Tenured Faculty													
Bell, David	Bell has taught for 38 years. A licensed architect, his expertise is in history, theory, and criticism and currently writes on these subjects.	ARCH-2150	Ethos of Architecture	ARCH-2220	Arch Design 2	ARCH-2620	Grad Arch Design 2	See below for courses taught in India during semester abroad.					
Braasch, Jonas	Assoc. Professor; Director of Center for Cognition, Communication and Culture. Faculty member since 2006. Acoustics focus. Ph.D-musicology and electrical eng, Ruhr University, Germany. Undergrad degree in physics.	ARCH-4860/ 6860	Applied Pyschoacoustics	ARCH-6890	Aural Architecture								
Dyson, Anna	M Arch-Yale Univ.; Baccalaureat General-Univ Laval (Quebec). Full Professor. Director of RPI Institute Center, CASE, in NYC. Focus: built ecologies.	ARCH-6810.81	Research Design Seminar	ARCH-6330.8	Built Ecologies 2								
Figueiro, Mariana	Full Professor at RPI, Joined faculty 2006. Focus: Lighting, human factors and human health. Ph.D. multidisciplinary science, RPI. MS Lighting-RPI. BS Architecture & Urbanism, Fed. Univ. Minas Gerais in Brazil.	LGHT-4840	Human Factors in Lighting	ARCH-6770	Light & Health								
Krueger, Ted	Associate Professor, joined faculty in 2001. Ph.D.-Architecture, Royal Melbourne Institute of Technology. M Arch, Columbia University, BA Sociology, University of Wisconsin-Madison. 12-years of Professional Practice in NYC.	ARCH-4010	Sensory Culture	ARCH-4300	Design Development	ARCH-4963	Integrated Design Schematic - coordinator						
Leslie, Russ	Full Professor. Associate Director of Lighting Research Center. Lighting specialty.	Prof. Leslie teaches in the graduate Lighting program. He does not teach B.Arch or M.Arch courses.											
Mistur, Mark	Assoc. Professor and Assoc. Dean. MS Bldg Conservation, B.Arch, B.S. Bldg Sci. – RPI. Licensed Architect in NYS. Leads initiatives in interdisciplinary A/E education; performance based design and design/technology integration.	ARCH-4300	Design Development										
Narendran, Nadarajah	Full Professor. Lighting Specialty.	Prof. Narendran teaches in the graduate Lighting program. He											

		does not teach B. Arch or M.Arch courses.											
Oatman, Michael	Associate Professor and Artist-in-Residence. BFA-Painting-RISD; MFA-Painting-SUNYA. Internationally exhibited; Graves Foundation Prize, 2003. "Art in America" since 2005. $400,000 Commoission MASSMoCA.	ARCH-4240 ARCH-4250	Arch Design 4 Arch Design 5	ARCH-4260	Arch Design 6	ARCH-4961	Duchamp Seminar	ARCH-2810	Arch Design Studio 2	ARCH-4931	The Man Next Door: A. Hitchcock & Architecture of Fear		
Rea, Mark	Professor, Director of Lighting Research Center, PhD Ohio State, Research expertise: modeling human visual response to light, development of analytical techniques to quantify circadian disruption.	Prof. Rea teaches in the graduate lighting program. He does not teach B.Arch or M.,Arch courses.											
Xiang, Ning	Obtained doctoral degree in architectural acoustics with six-year industry experience developing acoustics measurement techniques. Interests include performance hall acoustics, noise, and acoustics in healthcare.	ARCH-6870	Sonics Research Lab 1	ARCH-6840	Engineering Acoustics	ARCH-6830	Graduate Thesis Seminar – Acoustics	ARCH-6880	Sonics Research Lab 2				
Tenure-Track Faculty													
Combs, Lonn	Registered Architect NY-MA-TX-Germany, NCARB Certification. Co-founder/principal Easton+Combs in NYC and MA. Asst. Professor since 2011.	ARCH-2220	Arch Design 2 – coordinator	ARCH-2620	Graduate Arch Design 2	ARCH-4690	Case Studies	ARCH-6120	Design Explorations 2	ARCH-6980	Master's Project	ARCH-4963	Integrated Design Schematic
Crembil, Gustavo	Asst. Professor since 2009; became tenured Assoc. Professor July 2015. M Arch, Cranbrook Academy of Art; Professional Architect Diploma from Universidad de Cordoba in Argentina.	ARCH-4980	B Arch Final Project 1	ARCH-4090	Architectural Case Studies	ARCH-4990	B Arch Final Project 2	ARCH-6980	Master's Project				
Diniz, Nancy (started Spring semester)	Joined RPI in 2014, was Associate Professor at Xi'an Jiaotong-Liverpool University in China. MSc and PhD from Bartlett School in UK. Research in biomaterials.	ARCH-4580.8	Materials Systems & Prod.										
Markov, Ivan	Ph.D., M.Sc.-Structural Eng.-Cornell Univ., M.Sc. Architecture, B.Sc. CEE from Belgrade Univ. Designed and load-tested buildings and bridges. Research in structural morphology and fragility.	ARCH-2330	Structures 1	ARCH-4330	Structures 2	ARCH-4340	Structural Morphology	CIVL-4450	Conceptual Structures Systems				
Perry, Christopher	MArch-Columbia; BA-Colgate. Asst. Professor (2011-Present). Head of Graduate Studies (2014-Present). Former Louis Kahn	ARCH-4980	B Arch Final Project 1 - coordinator	ARCH-4990	B Arch Final Project 2 - coordinator	ARCH-6980	Master's Project						

	Visiting Asst. Professor, Yale. Principal, servo (1999-2010). Principal, pneumastudio (2011-Present). Focus: Environment.												
Rempel, Alexandra	Asst. Professor since 2014. M.Arch., University of Oregon; Ph.D. Biology, MIT; B.A. Biochemistry, Harvard College. Focus: bioclimatic design; passive systems; energy modeling.	ARCH-4960	Bioclimatic Design	ARCH-2370	Energy, Comfort and Ecology	ARCH-2360	Environmental & Ecol, Systems	ARCH-6320	Built Ecologies 1				
Titus, Anthony	Assistant Professor since 2011. B Arch-Cooper Union; MFA-Univ. Chicago.	ARCH-2800	Arch Design Studio 1 – coord.	ARCH-2160	Architectural Media	ARCH-2810	Arch Design Studio 2 - coordinator	ARCH-4070	Twisted Siblings: Rel'ships Btwn Painting & Digital Architecture				
Lecturers and Professors of Practice, Bedford Chair, and LRC Non-tenure track Faculty													
Aqtash, Ajmal (fall semester)	MS Arch from Columbia Univ; B Arch from Pratt. Co-founder of Form-ula multidisciplinary design firm in NYC.	ARCH-2350	Construction Systems	ARCH-2510	Materials & Design	ARCH-4300	Design Development	ARCH-4560	Materials & Enclosures				
Bierman, Andrew	Holds an MS in Lighting degree; holds 3 patents in lighting technologies; has over 20 years of experience conducting research in lighting controls, photometry, and systems.	LGHT-4770	Lighting Technology & Applications										
Brons, Jennifer	Holds an MS in Lighting degree; has worked for an international lighting design firm; has over 15 years of experience in lighting design, analysis, and evaluation.	LGHT-4230	Lighting Design										
Comodromos, Demetrios	Professor of Practice; managing partner/owner 12- person Method Design Architecture and Urbanism in NYC. Registered Architect in NY-NJ-PA-DE-CT. MS Advanced Arch Design, Columbia; B Arch/BS, RPI	ARCH-4360	Grad Arch Design 4 (in New York City)	ARCH-4170.8	Env. Parametrics (NYC)	ARCH-4240.8	Arch Design 4 (NYC)	ARCH-4260.8	Arch Design 6 (NYC)	ARCH-4250.8	Arch Design Studio 5 (NYC)	ARCH-6370.8	Environmental Parametrics Workshop
Dayem, Adam	Registered Architect (NY) and educator based in Brooklyn. Founded actual/office in 2004. B Arts in Architecture from U Calif-Berkeley. M Arch from Columbia.	ARCH-2520	Digital Constructs 1	ARCH-2800	Arch Design Studio 1	ARCH-2530	Digital Constructs 2	ARCH-2230	Arch Design 3	ARCH-2630	Grad Arch Design 3		
Draper, Josh	Architect and founder (2009)/partner PrePost in Brooklyn. B Arch from KTH in Sweden; M Arch from Columbia Univ.	ARCH-4936.8	Research Investigations: Projects in Built Ecologies	ARCH-4160.8	Research Investigations (NYC)	ARCH-6350.8	Material Systems & Productions						
Freyssinier, Jean Paul	MS in Lighting degree; two patents in lighting technologies; over 20	LGHT-4770	Lighting Tech and Applications										

	years of experience in lighting engineering and technology research.												
Hower, James Fleet	BA-English-Georgetown Univ; M Arch and M Landscape Arch, both Univ. Pennsylvania. Fleet Hower LLC is a design office in New York.	ARCH-2220	Arch Design 2	ARCH-2220	Arch Design 2 Computing	ARCH-4240 ARCH-4250	Arch Design 4 Arch Design 5	ARCH-2230	Arch Design 3 Computing	ARCH-4260	Arch Design 6	ARCH-2630	Grad Arch Design 3 - conputing
Laufs, Wilfred	Bedford Chair. Owner/Principal Laufs Engineering Design, NYC. Ph.D.-structural engineering, Architecture Cand.-Ing., Univ. Aachen (RWTH Germany). LEED AP, International Welding Engineer. PE in NY-PA-OR-FL-DE-MA-CT-OH-TX-RI-MO-NC-MI-DC-TN-IN; international publications,	ARCH-4020	Bedford Seminar: Adv. Building Structures (w/Civil Eng 4020)	ARCH-4020	Bedford Seminar: Adv. Building Structures								
Moran, Brendan	Ph.D. History/Theory Architecture, Harvard; Master's Environmental Deisgn, Yale.	ARCH-2130	Contemporary Design Approaches	ARCH-4140	Modernity in Culture and Architecture	ARCH-4981	B Arch Final Project 1 – Methods Seminar	ARCH-6981	Master's Thesis Methods Research Seminar	ARCH-4120	Modernity in Culture, Civ & Architecture	ARCH-2140	Building & Thinking 3
Moran, Brendan	*(Continued,)*	ARCH-4050	Cities and Their Territories										
Ngai, Ted	Recent research: Self-Assembling and Robotic Assist Material Systems, Bio /Geo Chemical Landscapes, Building Systems Integration. Past research: active modular phytoremediation system, rapid manufacturing, computational geometry, GIS.	ARCH-4967	Robotic Material Asemblies	ARCH-4980	B Arch Final Project 1	ARCH-4990	B Arch Final Project 2	ARCH-6980	Master's Project				
Oksiuta, Zbigniew	Studied architecture at Warsaw Technical Univ., Poland; and history of art at the Technical Univ. in Aachen, Germany.	ARCH-4240 ARCH-4250	Arch Design 4 Arch Design 5	ARCH-4260	Arch Design 6	ARCH-4968	Arch in the Time of Synthetic Biology	ARCH-2230	Arch Design 3	ARCH-4960	Self-Organizing Spaces	ARCH-2630	Graduate Arch Design 3
Perez-Guembe, E.	MS AAD and AAR Columbia University (2006-08); M Urbanism and BA Arch Univ. Navarra, Spain (1995-02). Licensed Architect since 2002, Spain. EKWC residence award (2013-14), the Netherlands.	See below for courses taught in Rome during study-abroad semester with students.		ARCH-2230	Arch Design 3	ARCH-4964	Sculpting the Intangible	ARCH-2630	Grad Arch Design 3				
Adjunct Faculty													
Aqtash, Ajmal (spring semester)	MS Arch from Columbia Univ; B Arch from Pratt. Co-founder of Form-ula multidisciplinary design firm in NYC.	ARCH-4560	Materials and Enclosures										
Bitonti, Francis	M Arch-Pratt Institute; BFA-Digital media-Long Island University. Founder/Director of Francis Bitonti Studio in NYC.	ARCH-4240	Arch Design 4	ARCH-4250	Arch Design 5	ARCH-4260	Arch Design 6	ARCH-4360	Grad Arch Design 4				
Brooks, Todd	Associate at Arup in NYC. Adjunct since 2009. PhD candidate at Yale	ARCH-4840	Arch Acoustics 1	ARCH-4850	Architectural Acoustics 2								

	Univ. MS mechanical eng, BS physics with minor in music.												
Chen, Xuedi	Master Professional Studies, NYU Tisch School; B Arch from Pratt. Freelance work at Museum of Natural History.	ARCH-4240	Arch Design 4	ARCH-4250	Arch Design 5	ARCH-4260	Arch Design 6	ARCH-4360	Grad Arch Design 4				
Churchill, Erik	M Arch and MBA from U Oregon, BA American Civilization from Brown Univ. Founder of Bldgworks in NYC, a design and build practice.	ARCH-4300	Design Development										
Duman, Koray	M Arch-UCLA; B Arch-Middle Eastern Technical Univ (Turkey). Principal: Buro Koray Duman in NYC.	ARCH-4963	Integrated Design Schematic										
Erel, Yael	Registered Architect-NY-Israel. Post-professional MArch from RPI; BArch from Cooper Union. Expertise in lighting. Holds 1 patent. Experience teaching architecture studio since 2004.	ARCH-2800	Arch Design Studio 1	ARCH-2810	Arch Design Studio 2								
Fessel, Melanie	Director of Design at Terraform ONE and Managing Editor of Ecogram. Architect, principal Open Network Ecology Odyssey in Brooklyn, M Arch II from Cooper Union.	ARCH-4240	Arch Design 4	ARCH-4250	Arch Design 5	ARCH-4260	Arch Design 6						
Holmes, Oliver	Adjunct faculty. Independent consultant on energy and sustainability projects. Trainer of sustainability programs for Urban Green Council, BS mechanical eng.-Syracuse Univ. BS mathematics-SUNY Oneonta.	ARCH-4750	Sustainable Building Design Metrics	ARCH-4730	Sustainable Building Design Strategies	ARCH-4740	Building Systems & Environments						
Ionescu, Serban	B Arch- Pratt Institute. Established Serban Ionescu Studio in Brooklyn in 2010.	ARCH-2800	Arch Design Studio 1	ARCH-2810	Arch Design Studio 2								
Joachim, Mitchell	Ph.D. Architecture, MIT. M Arch from Harvard; M Arch from Columbia. Assoc. Prof. of Practice at NYU. Founder/co-president Terreform ONE in Brooklyn.	ARCH-4240	Arch Design 4	ARCH-4250	Arch Design 5	ARCH-4260	Arch Design 6						
Leitao, Carla	Licensed architect in Europe. Co-founder / Principal Speculatis Aeterna; AUM Studio in NYC. Ph.D. candidates at EGS, Saas-Fee in Switzerland. MS Columbia Univ.	ARCH-4980	B Arch Final Project 1	ARCH-4990	B Arch Final Project 2	ARCH-6980	Master's Project						
Liu, Edwin	B Arch Calif. State Polytechnic; MS Arch. Design, Columbia Univ. Principal of ISOFORM, a design consultancy.	ARCH-2800	Arch Design Studio 1	ARCH-2230	Arch Design 3	ARCH-2630	Grad Arch Design 3						

Mutlu, Murat	Registered architect NY-MA-VA. Founder/Principal of INOA/ International Offie of Architects. B Arch-Cornell Univ. MS Arch.-MIT. Focus: computation and design.	ARCH-2220	Arch Design 2	ARCH-2620	Graduate Arch Design 2								
Peckham, Richard	VP/Executive Principal of CSArch Architecture, Albany, NY. NCARB Certificate. B Arch-RPI. Focus: Project Management and Business Management including coordination of firm's financial and legal issues.	ARCH-4550	Professional Practice 2										
Reilly, Stephen	23 years professional experience; Planning Board Commissioner; National Repositioning Ambassador, AIA; Guest Speaker/Peer Reviewer APTI; Adjunct since 2000; Partner, Lacey Thaler Reilly Wilson, LLP.	ARCH-4540	Professional Practice I	ARCH-4540	Professional Practice 1								
Stover, Kyle	M Arch-Yale; BS Arch-Univ Cincinnati. Founded (2013) Kyle Rx Stover Architecture and Design in NYC.	ARCH-2220	Arch Design 2	ARCH-4963	Integrated Design Schematic								
Thomsen, Lauren	AIA, LEED AP BD + C, architect at EYP Architecture and Engineering, working on large scale higher education and government projects. Interest in high performance building design.	ARCH-4300	Design Development – computing component	ARCH-4300	Design Development computing component								
Yazdanseta, Farzam	MS Advanced Arch Design-Columbia Univ.; M Arch-U Maryland; BA-U Maryland. Project architect with Actual / Office LLC in NYC.	ARCH-2810	Arch Design Studio 2										

Note: Elena Perez-Guembe taught the following courses in Italy to students on a study-abroad semester:

ARCH-4240.5	Arch Design 4	ARCH-4966.5	Urban and Architectural History of Rome (taught by Rome faculty)
ARCH-4250.5	Arch Design 5	ARCH-4972.5	Art and Culture in Italy (taught by Rome faculty)
ARCH-4260.5	Arch Design 6	ARCH-4973.5	Historic Preservation (taught by Rome faculty)
ARCH-4964.5	Sculpting the Intangible		
ARCH-4965.5	Modern Contemporary Rome (taught by Rome faculty)		

Note: Prof. David Bell taught the following courses to students in India on a study-abroad semester:

ARCH-4260.7	Arch Design 6	ARCH-4770.7	Arch Design Studio 5
ARCH-4965.7	India Discovery	ARCH-4970.7	Arch & the Urban Condition in India (taught by CEPT)
ARCH-4974.7	Culture & Civ. of India (taught by CEPT	ARCH-4976.7	Topics in Architecture

List of Faculty Scholarly Activities

Faculty Scholarly Activities 2010-2015

Faculty Name	Scholarly Papers, Book Chapters, Research, Etc.
Ajmal Aqtash	**Lectures / Invited Conferences** SIGGRAPH 2008 Design & Computation (aug 11-15), Conference/Exhibition, Los Angeles, California USA, The 35th International Conference and Exhibition on Computer Graphics and Interactive Techniques. Speaker/presenter, computation contributor, panelist, advisor to the chair. **Curation** Buck House Gallery: Haresh Lalvani XtraD (April 2011) Exhibition, New York, New York, 35 piece opening of metal sculptures, 1,000 sq ft gallery de Castellane Gallery/core.form-ula: Haresh Lalvani 2point5D+ (Sept 2010) Exhibition, Brooklyn, New York, 24 piece opening of metal sculptures, 2,000 sq ft gallery + 5,000 sq ft outdoor exhibit de Castellane Gallery/core.form-ula: Miya Ando, Shinobu (June 2010) Exhibition, Brooklyn, New York, 12 piece opening pertaining to metal sculptures, 2,000 sq ft gallery **Publications** 2013 BOB Magazine (sushi-teria) 2012 SPA-DE Magazine (sushi-teria) 2012: World wide Architecture:40 Architects/ 40 Countries 2012: Young Architects 13: Princeton Architectural Press 2011: Prattfolio, What is next 2010: Metropolis Magazine, Building New Skins
David Bell	**Books** 1. *Adolf Loos: The Irritation of* Modernity, PIINTHESKY PRESS, Troy, NY, 2015 2. *Jefferson's University as American Dream,* PIINTHESKY PRESS, Troy, NY, 2014 3. *Bernini & Borromini: Theater & Heresy*, PIINTHESKY PRESS, Troy, NY, 2013 **Articles and Essays** 1. "Thomas Jefferson's University: An Architectural Masque", in *Real Virtuality*, Ulrich Gehmann & Martin Reiche, eds., transcript Verlag, Bielefeld, Germany, 2014, pp. 63 – 89 2. "The Panoptic Garden", in *Earth Perfect?*, Annette Giesecke & Naomi Jacobs, eds., Black Dog Publishing [now Artifice Books on Architecture], London, 2013, pp. 190 – 207 3. "The Irritation of Architecture", in *Journal of Architectural Education*, Vol. 62, No. 2, George Dodds, ed., Association of Collegiate Schools of Architecture, Washington, DC, March 2011, pp. 113 – 126. **Public Lectures** 1. "Bernini & Borromini", delivered at CEPT University, Feb 2015 2. "[Be]Spoken into the Void", delivered at CEPT University, Feb 2015 3. "Thomas Jefferson's University: An Architectural Masque", delivered at Hawaii International Conference on Interdisciplinary Humanities – Jan 2014 4. "The Panoptic Garden", delivered at Hawaii International Conference on Interdisciplinary Humanities – Jan 2012 5. "The Quantum Bride", delivered at Hawaii International Conference on Interdisciplinary Humanities – Jan 2011 6. "The Irritation of Architecture" delivered at Hawaii International Conference on Interdisciplinary Humanities – Jan 2010

	Current Research Le Corbusier's design of the Millowners Building in Ahmedabad, India
Jonas Braasch	**Books** 1. J. Blauert, J. Braasch, *Acoustic Communication*, textbook (approximately 200 pages) planned, under contract with Springer. **Book Chapters** S. Ellis, A. Haig, N. Sundar Govindarajulu, S. Bringsjord, J. Valerio, J. Braasch, P. Oliveros (2015) Handle: Engineering Artificial Musical Creativity at the "Trickery" Level, in: *Computational Creativity Research: Towards Creative Machines*, Besold, T. R. and Schorlemmer, M. and, Smaill, A. Springer. Heidelberg, New York, Dordrecht, London. in press. J. Braasch (2014) *Sound Localization in Mammals, Models*, in: Encyclopedia of Computational Neuroscience, D. Jaeger, R. Jung (eds.), ISBN: 978-1-4614-7320-6 (Online), DOI 10.1007/978-1-4614-7320-6, Springer New York, p. 1–17. J. Braasch (2015) *Convolution, Fourier analysis, and cross-correlation and their inter-relationships*, Book Chapter for Systematic Musicology for Handbook (R. Bader, ed.), Springer (chapter has been written, book forthcoming). J. Braasch, J. Blauert, Auditory Perception in Rooms, Book Chapter for *Handbook in Architectural Acoustics* (N. Xiang, ed.) J. Ross Publishing (chapter has been written, book forthcoming). J. Braasch (2013) The μ·cosm Project: An Introspective Platform to Study Intelligent Agents in the Context of Music Ensemble Improvisation, in: Sound - Perception - Performance, R. Bader (ed.), Springer, 257-270. J. Braasch, S. Clapp, A. Parks, T. Pastore and N. Xiang (2013) A Binaural Model that Analyses Acoustic Spaces and Stereophonic Reproduction Systems by Utilizing Head Rotations, in: The Technology of Binaural Listening J. Blauert (ed.), Springer, 201-223 A. Kohlrausch, J. Braasch, D. Kolossa, J. Blauert (2013) The technology of binaural listening, in: The Technology of Binaural Listening J. Blauert (ed.), Springer, 1-32. J. Braasch, N. Peters, D. Van Nort, P. Oliveros, C. Chafe (2011) *A Spatial Display for Telematic Music Performances*, in: Principles and Applications of Spatial Hearing: Proceedings of the First International Workshop on IWPASH (Y. Suzuki, D. Brungart, Y. Iwaya, K. Iida, D. Cabrera, H. Kato (eds.) World Scientific Pub Co Inc, ISBN: 9814313874, 436–451. **Recordings (publicly released through Record Label)** 1.) Deep Listening Band (2014) *Dunrobin Sonic Gems*, Pauline Oliveros (V-Accordion, Conch Shell), Stuart Dempster (Trombone, Didjeridu), Jonas Braasch (Saxophone), IONE (Opening Invocation), Jesse Stewart (Percussion), Johannes Welsch (Gongs), recorded live on October 5, 2013 at the Dunrobin Sonic Gym, Deep Listening Records. 2.) Triple Point (2014) *Phase/Transition*, Jonas Braasch, soprano saxophone; Pauline Oliveros, V-accordion; Doug Van Nort, granular-feedback expanded instrument system (GREIS) electronics, audio compact disk 3 CDs, Pogus Records 21078-2.

3.) Jonas Braasch (2011) *Sonic Territories*, DVD video with 5-channel surround sound, Jonas Braasch: soprano saxophone, field recordings, electronic processing and composition, Deep Listening Records, DL-DVD-4.

4.) Pauline Oliveros, Francisco López, Doug Van Nort, Jonas Braasch (2011) *Quartet for the End of Space*, Pauline Oliveros, digital accordion; Francisco López (electronics), Doug Van Nort (electronics), Jonas Braasch (soprano saxophone), work contains 8 electroacoustic compositions (2 from each composer) based on improvised session material with the ensemble, audio compact disk, Pogus Records 21059-2.

Journal Articles in Refereed Journals

J. Braasch (2013) A precedence effect model to simulate localization dominance using an adaptive, stimulus parameter-based inhibition process, J. Acoust. Soc. Am. 134(1), July 2013, 420-435.

D. Van Nort, P. Oliveros, J. Braasch (2013) Electro/Acoustic Improvisation and Deeply Listening Machines, Journal of New Music Research **42**(4), 303–324.

N. Peters, J. Braasch, S. McAdams (2013). Recording techniques and their effect on sound quality at off-center listening positions in 5.0 surround environments. *Journal of the Canadian Acoustical Association (JCAA), 41*(3), 37–49.

P.W. Robinson, A. Walther, C. Faller, J. Braasch (2013) Echo thresholds for reflections from acoustically diffusive architectural surfaces, J. Acoust. Soc. Am. 134(4), 2755–2764.

N. Peters, J. Braasch J., S. McAdams (2011) *Sound Spatialization Across Disciplines Using Virtual Microphone Control (ViMiC),* Journal of Interdisciplinary Music Studies (JIMS), Vol. 5(2), 167–190. doi:10.4407/jims.2011.11.003

J. Braasch (2013) A precedence effect model to simulate localization dominance using an adaptive, stimulus parameter-based inhibition process, J. Acoust. Soc. Am. 134(1), July 2013, 420-435.

D. Van Nort, Doug, P. Oliveros, J. Braasch (2013) Electro/Acoustic Improvisation and Deeply Listening Machines, Journal of New Music Research **42**(4), 303-324.

Peters N., Braasch J., McAdams S.: *Recording Techniques and Their Effect on Sound Quality at off-Center Listening Positions in 5.0 Surround Environments*, Journal of the Canadian Acoustical Association, accepted for publication, 2014.

P.W. Robinson, A. Walther, C. Faller, J. Braasch (2013) Echo thresholds for reflections from acoustically diffusive architectural surfaces, J. Acoust. Soc. Am. 134(4), 2755–2764.

D. Van Nort*, J. Braasch, P. Oliveros (2012) *Sound Texture Recognition through Dynamical Systems Modeling of Empirical Mode Decomposition,* J. Acoust. Soc. Am. 132(4), 2734–2744.

D. Valente*, J. Braasch, S. Myrbeck*, (2012) *Comparing perceived auditory width to the visual image of a performing ensemble in contrasting bi-modal environments,* J. Acoust. Soc. Am., 131(1) , 205–217.

J. Braasch (2011) *A cybernetic model approach for Free Jazz improvisations*, Kybernetes **40**/7–8, 984–994.

N. Peters, J. Braasch J., S. McAdams (2011) *Sound Spatialization Across Disciplines Using Virtual Microphone Control (ViMiC),* Journal of Interdisciplinary Music Studies (JIMS), Vol. 5(2).

R.H.Y. So, N.M. Leung, A.B. Horner, J. Braasch, K.L. Leung (2011) *Effects of Spectral Manipulation on Nonindividualized Head-Related Transfer Functions (HRTFs)*, Human Factors **53**/3, 271–283.

C. Abercrombie*, J. Braasch (2010) *A Method for Multimodal Auralization of Audio-Tactile Stimuli from Acoustic and Structural Measurements*, J. Audio Eng. Soc. **58**/10, 818–827.

J. Braasch, J. Goebel, T. Vos (2010) *A Cinematic Spatial Sound Display for Panorama Video Applications*, Organised Sound **15**/3, 260–270.

R.H.Y. So, B. Ngan, A. Horner, J. Braasch, J. Blauert, K.L. Leung (2010) *Toward orthogonal non-individualised head-related transfer functions for forward and backward directional sound: cluster analysis and an experimental study*, Ergonomics **53**/6, 767–781.

D. Valente*, J. Braasch (2010) *Subjective scaling of spatial room acoustic parameters influenced by visual environmental cues*, J. Acoust. Soc. Am. **128**, 1952–1964.

Articles in Peer-Reviewed Conference Proceedings

S. Clapp, J. Braasch, N. Xiang, A. Guthrie (2014) Localization Accuracy in Presenting Measured Sound Fields via Higher Order Ambisonics, Proceedings of the 20th International Conference on Auditory Display (ICAD–2014), June 22–25, 2014, New York, USA.

A. Cunningham, W. Keddy-Hector, U. Sinha, D. Whalen, D. Kruse, J. Braasch, J. Wen (2014) Jamster: A Mobile Dual-Arm Assistive Robot with Jamboxx Control, in: Proceedings of the International Conference on Automation Science and Engineering (CASE), IEEE Computer Society, Fullon Hotel Danshui Fishermen's Wharf, Taipei, Taiwan.

J. Parkman Carter, J. Braasch (2014) Cross-modal Soundscape Mapping: Integrating Ambisonic Environmental Audio Recordings and High Dynamic Range Spherical Panoramic Photography, Proceedings of the 20th International Conference on Auditory Display (ICAD–2014), June 22–25, 2014, New York, USA.

S. Ellis, N. Sundar Govindarajulu, J. Valerio, S. Bringsjord, J. Braasch (2013) Creativity in Artificial Intelligence as a Hybrid of Logic and Spontaneity, in: Computational Creativity, Concept Invention, and General Intelligence (C3GI)Workshop at the 23rd International Joint Conference on Artificial Intelligence (IJCAI), 3–9 August, 2013, Beijing, China.

S. Ellis, N. Sundar G., S. Bringsjord, A. Haig, C. Kuebler, J. Taylor, J. Braasch, P. Oliveros, D. Van Nort (2012), *Creativity and Conducting: Handle in the CAIRA Project*, Proceedings of the Workshop "Computational Creativity, Concept Invention, and General Intelligence," Tarek R. Besold, Kai-Uwe Kühnberger, Marco Schorlemmer & Alan Smaill (eds.), August 27, 2012, Montpellier, France, Publications of the Institute of Cognitive Science (PICS) University of Osnabrück, Vol. 1-2012, Osnabrück, Germany, ISSN: 1610-5389, 15—20.

D. Van Nort, J. Braasch, P. Oliveros (2012) *Mapping to musical actions in the FILTER system*, Proceedings of the 12th International Conference on New Interfaces for Musical Expression (NIME'12), May 21–23, 2012, University of Michigan, Ann Arbor.

J. Braasch, J. Blauert (2011) *Stimulus-dependent Adaption of Inhibitory Elements in Precedence Effect Models*, Forum Acusticum 2011, Aalborg, Denmark.

J. Blauert, J. Braasch (2011) *Binaural Signal Processing*, 17th International Conference on Digital Signal Processing (DSP2011), July 6–8, 2011, Corfu, Greece (IEEExplore digital library).

D. Van Nort*, P. Oliveros, J. Braasch (2010) *Developing Systems for Improvisation based on Listening*, in Proc. of the 2010 International Computer Music Conference (ICMC 2010), New York, NY, June 1–5, 2010.

Articles in Conference Proceedings (wit peer review based on 750-words precis)

M.T. Pastore and J. Braasch. The effects of interaural level differences caused by interference between lead and lag on summing localization. 135th AES Convention, New York City, 2013.

Parks, A., Clapp, S., Braasch J. “Auralization of Measured Impulse Responses Considering Head Movements.” 135th AES Convention. New York, New York October 17-21 2013.

J. Braasch, D. Van Nort, P. Oliveros, S. Bringsjord, N. Sundar Govindarajulu, C. Kuebler, A. Parks (2012), *A creative artificially-intuitive and reasoning agent in the context of live music improvisation*, in: Music, Mind, and Invention Workshop: Creativity at the Intersection of Music and Computation, March 30 and 31, 2012, The College of New Jersey, URL: http://www.tcnj.edu/ mmi/proceedings.html.

J. Braasch, S. Bringsjord, C. Kuebler, P. Oliveros, A. Parks*, D. Van Nort* (2011) *Caira – a Creative Artificially-Intuitive and Reasoning Agent as conductor of telematic music improvisations*, Proc. 131th Audio Engineering Society Convention, Oct. 20–23, 2011, New York, NY, Paper Number 8546.

S.W. Clapp*, A.E. Guthrie*, J. Braasch, N. Xiang (2011) *Investigations of Room Acoustics with a Spherical Microphone Array*, Proc. 131th Audio Engineering Society Convention, Oct. 20–23, 2011, New York, NY, Paper 8459.

A. Parks*, J. Braasch (2011) *The Effect of Head Movement on Perceived Listener Envelopment and Apparent Source Width*, Proc. 131th Audio Engineering Society Convention, Oct. 20–23, 2011, New York, NY, Paper Number 8567.

C.L. Abercrombie*, J. Braasch (2010) *Perceptual Dimensions of Stage-Floor Vibration Experienced During a Musical Performance*, Proc. 129th Audio Engineering Society Convention, San Francisco, CA, Nov. 4–7, 2010, Paper Number 8160.

J.T. Strong*, J. Braasch, N. Xiang (2010) *A Binaural Model with Head Motion That Resolves Front-Back Confusions for Analysis of Room Impulse Responses*, Proc. 129th Audio Engineering Society Convention, San Francisco, CA, Nov. 4–7, 2010, Paper Number 8279.

D. Van Nort*, J. Braasch, P. Oliveros (2010) *Sound texture analysis based on a dynamical systems model and empirical mode decomposition*, Proc. 129th Audio Engineering Society Convention, San Francisco, CA, Paper Number 8251.

Non-Refereed Conference Papers & Abstracts

J. Braasch, A. Parks, M.T. Pastore, and J. Blauert A cognitive approach for binaural models using a top–down feedback structure. Proceedings of the 21st International Congress on Acoustics, June, 2013, Montreal, Canada.

J. Blauert, J. Braasch (2013) Applications of models of binaural hearing, Proceedings of Meetings on Acoustics **19**, Paper ID 050009.

J. Blauert, J. Braasch (2013) Modeling binaural processing: What next?, Proceedings of Meetings on Acoustics **18, Paper ID** 015005.

J. Braasch, A. Parks, J. Blauert (2013) A cognitive approach for binaural models using a top-down feedback structure, Proceedings of the 21st International Congress on Acoustics, June, 2013, Montreal, Canada.

J. Braasch, P. Oliveros, D. Van Nort (2013) Telehaptic interfaces for interpersonal communication within a music ensemble, Proceedings of the 21st International Congress on Acoustics, June, 2013, Montreal, Canada.

Parks, A and Braasch, J. (2013) Head tracking and source localization in reverberant cocktail party scenarios. Proceedings of the 21st International Congress on Acoustics, June 2–7, 2013, Montreal, Canada.

J. Braasch, A. Parks, J. Blauert (2013) *A cognitive approach for binaural models using a top-down feedback structure*, Proceedings of the 21st International Congress on Acoustics, June 2–7, 2013, Montreal, Canada, accepted for publication.

J. Braasch, S. Clapp, A. Parks, M. T. Pastore, N. Xiang (2013) *What's wrong with analyzing impulse responses?,* Proceedings of the 21st International Congress on Acoustics, June 2–7, 2013, Montreal, Canada, accepted for publication.

J. Braasch, P. Oliveros, D. Van Nort (2013) *Telehaptic interfaces for interpersonal communication within a music ensemble,* Proceedings of the 21st International Congress on Acoustics, June 2–7, 2013, Montreal, Canada, accepted for publication.

S. Bringsjord, J. Taylor, G. Milsap, S. Austin, J. Braasch, P. Oliveros, D. Van Nort, A. Rosenkrantz, K. Hayden (2011) *Creativity and Conducting: Handle in the CAIRA Project*, accepted poster presentation at the 8th ACM Conference on Creativity and Cognition (C&C 2011), November 3–6, 2011, Atlanta, GA.

N. Peters*, J. Braasch, S. McAdams (2011) *Compensation of undesired Doppler artifacts in virtual microphone simulations*, Fortschr. Akust. DAGA 2011, Deutsche Ges. Akust., Düsseldorf, (Ref-number DAGA2011/410).

S. Clapp*, J. Braasch, A. Guthrie*, N. Xiang (2010) *Investigating Room Acoustics using Higher Order Ambisonics*, Proc. 20th International Congress on Acoustics, Aug. 2010, Sydney, Australia.

P. Robinson, N. Xiang, J. Braasch (2010) *Optimal architectural configurations and acoustic parameters for multiple sources*, Proc. 20th International Congress on Acoustics, Aug. 2010, Sydney, Australia.

Abstracts, Letters of Correspondence, Book Reviews (non-refereed)

J. Braasch (2014) Effect of generators and resonators on musical timbre in coupled systems, J. Acoust. Soc. Am. **135**, 2245, http://dx.doi.org/10.1121/1.4877349

J. Braasch, R.J. Radke, J. Wen, M. Si, A. Cunningham, W. Keddy-Hector, U. Sinha (2014) Audio/visual concepts for human/robot communication in immersive virtual environments, J. Acoust. Soc. Am. **135**, 2169, http://dx.doi.org/10.1121/1.4877050.

J. Parkman Carter, J. Braasch (2014) Cross-modal soundscape mapping: Integrating ambisonic field recordings with high dynamic range spherical panoramic photography to produce interactive maps, J. Acoust. Soc. Am. **135**, 2187, http://dx.doi.org/10.1121/1.4877123

S. Clapp, A. Guthrie, J. Braasch, N. Xiang (2014) Perceptually evaluating ambisonic reproduction of room acoustics, J. Acoust. Soc. Am. **135**, 2400, http://dx.doi.org/10.1121/1.4877945

N. Deshpande, J. Braasch (2014) Real-time implementation of a polyphonic pitch perception model, J. Acoust. Soc. Am. **135**, 2163, http://dx.doi.org/10.1121/1.4877022

D.J. Samson, J. Braasch (2014) Mixing console design for telematic applications in live performance and remote recording, J. Acoust. Soc. Am. **135**, 2170, http://dx.doi.org/10.1121/1.4877058

N. Xiang, J. Braasch, T. Brooks (2014) Graduate education and research in architectural acoustics at Rensselaer Polytechnic Institute, J. Acoust. Soc. Am. **136**, 2198, http://dx.doi.org/10.1121/1.4899967

S. Clapp, A.E. Guthrie, J. Braasch, N. Xiang (2013) Headphone- and loudspeaker-based concert hall auralizations and their effects on listeners' judgments, J. Acoust. Soc. Am. **134**, 3969, http://dx.doi.org/10.1121/1.4830460

M.T. Pastore, J. Blauert, J. Braasch (2013) Temporally diffusive reflections and the precedence effect, J. Acoust. Soc. Am. **135**, 2284, http://dx.doi.org/10.1121/1.4877493

J. Braasch (2012) Categorical sound characteristics of free-reed pipe-organ stops, *J. Acoust. Soc. Am.*, 132, 1902.

J. Braasch, A. Parks, T. Pastore, S. Clapp (2012) Utilizing head movements in the binaural assessment of room acoustics and analysis of complex sound source scenarios, *J. Acoust. Soc. Am.*, 132, 1912.

Botts, J. Clapp, S. Xiang, N. and Braasch, J. (2012): Measuring and inferring the directional properties of the early room response (A), *J. Acoust. Soc. Am.*, 132, 1912.

S. Clapp, A. Guthrie, J. Braasch, N. Xiang, T. Caulkins (2012) *Comparison of headphone- and loudspeaker-based concert hall auralizations (A)*, J. Acoust. Soc. Am. **132**, 1913.

Clapp, S. Botts, J. Guthrie, A. Braasch, J. Xiang, N. (2012): Using spherical microphone array beamforming and Bayesian inference to evaluate room acoustics (A), *J. Acoust. Soc. Am.*, 132, 2058.

Li, V. Xiang, N. and Braasch, J. (2012): Modeling binaural suppression processes for predicting speech intelligibility in enclosed spaces (A), *J. Acoust. Soc. Am.*, 132, 1911.

J. Braasch, S.W. Clapp, A. Parks, N. Xiang (2012) *A binaural model that uses head-movements to evaluate acoustical spaces (A)*, J. Acoust. Soc. Am. **131**, 3454.

Clapp, S. Anne Guthrie, A. Braasch, J. and Xiang, N. (2012): The use of multi-channel microphone and loudspeaker arrays to evaluate room acoustics (A), *J. Acoust. Soc. Am.* **131**, 3208.

D. Egloff, J. Braasch, P. Robinson, D. V. Nort, P. Oliveros, T. Krueger (2012) Vibrotactile music systems for co-located and telematic performance (A), J. Acoust. Soc. Am. 131, 3331.

Li, V. Xiang, N. and Braasch, J. (2012): A binaural model for predicting speech intelligibility in rooms using noise and reverberation suppression processes (A), *J. Acoust. Soc. Am.* **131**, 3317.

P.W. Robinson, A. Walther, C. Faller, J. Braasch (2012) Echo thresholds for reflections from acoustically diffusive architectural surfaces (A), J. Acoust. Soc. Am. 131, 3453.

Xiang, N., Braasch, J. Brooks, T. and Sykes, D. (2012): Graduate education: Meeting the needs of the next generation of professionals in architectural acoustics (A), *J. Acoust. Soc. Am.* **131**, 3254.

T. Perez, J. Braasch, N. Xiang (2011) *Applications of a binaural model with contralateral inhibition in room acoustics analysis (A)*, J. Acoust. Soc. Am. 130, 2319.

T. Caulkins, A. Guthrie, S. Clapp, J. Braasch, N. Xiang (2011) *Using a spherical microphone array to analyze concert stage acoustics (A)*, J. Acoust. Soc. Am. 130, 2418.

S. W. Clapp, A. E. Guthrie, J. Braasch, N. Xiang (2011) *The use of multi-channel microphone and loudspeaker arrays to evaluate room acoustics (A)*, J. Acoust. Soc. Am. 130, 2418.

J. Braasch, A. Parks*, N. Xiang (2011) *A binaural model to simulate the precedence effect with adaptive stages to compensate for head movements (A)*, J. Acoust. Soc. Am. **129**, 2486.

S. Clapp*, A. Guthrie*, J. Braasch, N. Xiang (2011) *Explorations of room acoustics using a second-order ambisonic microphone (A)*, J. Acoust. Soc. Am. **129**, 2534.

D. Egloff*, J. Braasch, P. Robinson*, D. Van Nort*, T. Krueger (2011) *A vibrotactile music system based on sensory substitution (A)*, J. Acoust. Soc. Am. **129**, 2582.

A.E. Guthrie*, T.J. Caulkins, S. Clapp*, J. Braasch (2011) *Using a spherical microphone array to analyze stage acoustics (A)*, J. Acoust. Soc. Am. **129**, 2534.

A. Ostrowski, J. Escolano, N. Xiang, J. Braasch (2011) *Experimental and numerical investigations on decay parameter distributions in coupled-volume systems (A)*, J. Acoust. Soc. Am. **129**, 2534.

P.W. Robinson, J. Braasch, N. Xiang (2011) *Understanding the perceptual effects of diffuser application in rooms (A)*, J. Acoust. Soc. Am. **129**, 2502.

T. Adams*, J. Braasch (2010) *Keep it quiet: Acoustic design and the High Line (A)*, J. Acoust. Soc. Am. **128**, 2371.

T. Adams*, J. Braasch (2010) *Evaluating urban soundscape quality with sound recording and reproduction (A)*, J. Acoust. Soc. Am. **128**, 2372.

J. Braasch, J.T. Strong*, N. Xiang (2010) *A binaural model to evaluate surround sound reproduction systems using head movements (A)*, J. Acoust. Soc. Am. **128**, 2362.

J. Braasch, D. Van Nort* (2010) *Instrumental analysis of extended saxophone techniques for live electronics (A)*, J. Acoust. Soc. Am. **127**, 2010.

J. Braasch, J.T. Strong*, N. Xiang (2010) *A binaural localization model that resolves front-back confusions through head movements (A)*, J. Acoust. Soc. Am. **127**, 1886.

N. Xiang, T. Jasa, J. Braasch (2010) *Nested sampling for room-acoustics energy decay analysis (A)*, J. Acoust. Soc. Am. **127**, 1998.

Group Exhibitions and Performances, Ensemble Recitals

[C3-29] Festival-Highlight Evening Concert with Deep Listening Band: ***Sonic Gems*** (Pauline Oliveros, Stuart Dempster, Jonas Braasch, Suiren aka Renko Ishida Dempster, Ione, Jesse Stewart, Johannes Welsch), Deep Listening Conference, July 12, 2014

[C3-28] Deep Listening Band, 25th anniversary celebration, Dunrobin Sonic Gym, Ottawa, Canada, Oct. 5, 2013, Pauline Oliveros - v-accordion, conch shells, sonic artifacts; Stuart Dempster; trombone, didgeridoo, conch shells; Jonas Braasch - saxophone, electronics; Jesse Stewart - percussion, drums, waterphone, sonic artifacts; Johannes Welsch - gongs

[C3-27] **Saxophone Solo, Marathon of Dreamers, Deep Listening Institute, October 19, 2013,** Kingston NY

[C3-26] **August, 2012:** Jonas Braasch, Solo Concert, The Stone, NYC.

[C3-25] **June 17, 2012:** Jonas Braasch, *Quasi-Infinity*, Bang on a Can Festival, NYC.

[C3-24] **March 30, 2012:** Triplepoint, *Caira's Configured Night*, presented at the Music, Mind, and Invention Workshop: Creativity at the Intersection of Music and Computation, March 30 and 31, 2012, The College of New Jersey.

[C3-23] **February 26, 2012:** Pauline Oliveros Solo/Triple Point, The Stone, NYC.

[C3-22] **June 15, 2011:** EMS 2011 Conference, *Stretched Boundaries*, Tintinnabulate, Play the Drum (Leaf Miller).

[C3-21] **April 24, 2011:** Pauline Oliveros, Francisco López, Doug Van Nort, Jonas Braasch, Issue Project Room, NYC, , CD release concert, *Quartet for the End of Space* CD Release.

[C3-20] **March 31, 2011:** *Stretched Boundaries*, West Hall Auditorium, RPI, Tintinnabulate and invited artists: Neil Rolnick, Christine Sun Kim, Clara Tomaz & David Whalen.

[C3-19] **September 17, 2010:** Performance and world premiere of project involving Pauline Oliveros, Francisco López, Doug Van Nort and Jonas Braasch, at Deep Listening

Institute, Kingston, NY. Presentation of composed pieces that were sculpted from studio improvisation sessions, followed by a quartet improvisation.

[C3-18] **September 08, 2010:** North South Currents: Bogota/Troy/Guelph, EMPAC Theater, Featured together in a telematic performance accordion legend Pauline Oliveros performs live in Guelph (ON, Canada) with Anne Bourne (cello), Guelph's own Ben Grossman (hurdy gurdy) and Jesse Stewart (percussion). They will be connected to two other sites, where they will be joined by Ricardo Arias on balloon (in Bogota, Colombia) and by Jonas Braasch on soprano sax, Curtis Bahn on dilruba, Doug Van Nort on laptop, and Blair Neal on video (in Troy, NY). Following is a local performance of containment and dispersence by Curtis Bahn with Jonas Braasch and Doug Van Nort and Blair Neal.

[C3-17] **May 8, 2010:** Performance with RPI seminar ensemble Tintinnabulate at the Lotus Studio, NYC.

[C3-16] **April 24, 2010:** Performing with Triple Point and Mike Bullock (bass) at the Red Room, Baltimore, MD. Opening act: Joe Reinsel.

[C3-15] **March 27, 2010:** Performing with Triple Point at the Schuman award concert in honor of Pauline Oliveros. Miller Theatre, Columbia University. Video by Benton-C Bainbridge.

Research Grants & Contracts – Approved and Funded

J. Braasch (PI) RI: Small: Binaural Sound Source Separation Robust to Listener Head Movements
Award Number: 1320059; Principal Investigator: Jonas Braasch; NSF Organization:IIS
Award Date: 08/01/2013; Award Amount: **$186,624**.

A. Raake (Project Coordinator), K. Obermaier (Technische Universitaet Berlin), T. Dau (Danmarks Tekniske Universitet), D. Kolossa, J. Blauert (Ruhr-Universitaet Bochum), B. Gas (Universite Pierre Et Marie Curie), P. Danes (Centre National De La Recherche Scientifique, CNRS, Paris), S. Spors (Universitaet Rostock) G. Brown (The University Of Sheffield), A. Kohlrausch (Technische Universiteit Eindhoven), J. Braasch (Rensselaer Polytechnic Institute) Reading the world with TWO EARS, European Research Council, SEVENTH FRAMEWORK PROGRAMME, STREP, FP7-ICT-2013-C, Grant Agreement No. 618075, 12/13-11/16, **EUR 2,969,131** to the consortium, U.S. Partners do not receive direct funding from the EU.

J. Braasch, P. Oliveros, D. Van Nort, D. Whalen, *Episodic Operator,* NYS Council on the Arts (NYSCA), Grant ID: J50559, 6/12/2013-6/30/14**, $5,000**.

J. Braasch (PI), B. Chang (Co-PI), B. Cutler (Co-PI), J. Goebel (Co-PI), R. Radke (Co-PI), *MRI/Dev.: Collaborative-Research Augmented Immersive Virtual Environment Laboratory (CRAIVE-Lab),* NSF/Major Research Instrumentation, 10/12—09/15, #1229391, **$300,001.**

J. Braasch, T. Krueger, P. Oliveros, D. Whalen, *Assistive technology for artist participation in The Telematic Circle, an across abilities internet network*, Christopher and Dana Reeve Foundation 2012, Quality of Life Grant, (June 2012) **$5,500.**

J. Braasch (PI), *EAGER: A virtual eXchange to support networks of creativity and innovation amongst Science, Engineering, Arts and Design (XSEAD)* [collaborators with own budget include T. Rikakis, S. Brixey, D. Cox (total amount $299,679), 08/11-07/13, **$11,000 (RPI).**

J. Goebel (PI), J. Braasch (Co-PI) (2010-2011): WORKSHOP: Infrastructure Needs to Support Creativity-based Technology, NSF grant (09/10-09/11), **$74,224.**

J. Braasch (PI), S. Bringsjord (Co-PI), P. Oliveros (Co-PI): CAIRA - a Creative Artificially-Intuitive and Reasoning Agent in the context of ensemble music improvisation, NSF CreativeIT, (8/10-7/13), (#1002851) **$650,000**.

J. Braasch (Co-PI & coordinator), J. Hendler (Co-PI), P. Oliveros (Co-PI): *Intelligent Sensory Substitution Algorithms for Tactile Music Communication in the Web and Physical Spaces*, Seed Grant from the Rensselaer's Office of Research (01/10-06/11) **$40,000**.

J. Braasch (PI), P. Oliveros (Co-PI) (2008) *A Robust Distributed Intelligent System for Telematic Applications*, NSF CreativeIT Pilot Grant, #0757454, 04/08—03/11, **$199,276.**

Proposals Submitted and Not Funded with Current Status

J. Braasch (PI), R. Radke (Co-PI), M. Si (Co-PI), J. Wen (Co-PI), CHS: Medium: Integrated Solutions for Virtual Realities, Artificial Intelligence, Telepresence and Robotics (VRAITERO) National Science Foundation, submitted 11/14, 8/15–7/19, (RPI Case #7861), $1,198,051 (Pending)

J. Braasch (PI), N. Xiang (Co-PI) CHS: Small: Multimodal, Immersive, Real-Time Resynthesis of Rooms (MIRROR), National Science Foundation, submitted 01/15, $474,335, (RPI Case #7218, Pending).

J. Wen (PI), J. Braasch (Co-PI), R. Radke (Co-PI), M. Si (Co-PI), SCH:INT: Collaborative Research:Mobile Robotic Assistant (MoRA) for Congestive Heart Failure Patients in Nursing Homes, National Science Foundation, 8/15–8/19, (RPI Case #7910), $1,672,647 (Pending).

L. Zhang (PI) et al., J. Braasch (senior personnel) NRT-DESE: Enabling Discovery Through Education, Training & Innovation in Biomedical Computing Technologies, National Science Foundation (RPI Case #7570), 9/14–8/19, pending, $2,999,819 (Pending).

J. Braasch (PI) Investigating and Modeling the Precedence Effect for Complex Reflection Patterns, National Institutes of Health, submitted 06/14, $757,289 (RPI Case #7508, declined).

J. Braasch (PI), N. Xiang (C0_PI), (2014) CHS: Small: Multimodal, Immersive, Real-time Resynthesis of Rooms (MIRROR), National Science Foundation, CHS Medium, requested amount $474,335, 36 months, anticipated start date 8/01/14 (declined).

J. Braasch (PI), R. Radke (Co_PI), M. Si (Co_PI), J.T. Wen (Co_PI), (2013) CHS: Medium: Integrated Solutions for Virtual Realities, Artificial Intelligence, Telepresence and Robotics (VRAITERO), National Science Foundation, CHS Medium, requested amount $1,199,338, 48 months, anticipated start date 08/01/14 (declined).

J. Braasch, PI, M. Kalsher, Co-PI (2013) Is the build-up of the precedence effect a learning mechanism to adjust for room parameters? NIH R21, Requested amount $405,152. (declined).

Alexander Raake (PI), Jonas Braasch (local PI), and others involving: Technische Universitaet Berlin TUB D, Ruhr-Universitaet Bochum RUB D, Eindhoven Technical University TUE NL, Technical University of Denmark DTU DK, Hebrew University of Jerusalem HUJ ISR, Universite Paris Marie Curie UPM F, Lab. d'Analyse et d'Architecture des Systemes LAA F, Rensselaer Polytechnic Institute, *Reading the world with TWO EARS*, submitted to the European Research Council, Small or medium-scale focused research project (STREP), ICT FET FP7-ICT-2011-C, April 2012, Requested amount approx. **$2 million Euros**, amount for Rensselaer **$311,000**, not funded.

J. Braasch (PI), P. Oliveros (Co-PI), T. Krueger (Co-PI), 2012, SHB: Type I(EXP): Self-supporting Organizations for Rapid Prototyping of Assistive Technology (SORPAT), submitted to NSF, Smart Health and Well Being, Feb. 2012, requested amount: **$227,557**, not funded.

J. Braasch (PI), B. Chang (Co-PI), B. Cutler (Co-PI), J. Goebel, (Co-PI), J. Hendler (Co-PI), R. Radke (Co-PI), E. Ameres (senior personnel), S. Bringsjord (senior personnel), T. Krueger (senior personnel), J. Myers (senior personnel), J. Hendler (senior personnel), N. Xiang (senior personnel), *Development of the Collaborative-Research Augmented Immersive Virtual Environment Laboratory* (CRAIVE-Lab), submitted to NSF/MRI: Jan. 2012, requested amount: **$571,291**, not funded.

J.E. Summers (PI, Applied Research in Acoustics LLC), J. Braasch (Co-PI, RPI) and Ning Xiang (Co-PI, RPI) *Neuromechanical Binaural Auditory Scene Analysis by Biomimetic Processing of Microphone-Array Data,*
requested subcontract amount: **$38,469**, not funded.

J. Braasch (PI), J. Hendler (Co-PI), P. Oliveros (Co-PI) *The Telematic Circle: Technology for a Social Music Network for users across abilities,* submitted to NSF/SoCS, Nov. 2011, requested amount: **$750,000**, not funded.

J. Braasch (PI), P. Oliveros (Co-PI), T. Krueger (Co-PI) *Two Hands: A micro-ergonomic interface approach to perform bimanual tasks using facial expressions,* submitted to NSF/RAPD, Sept. 2011, requested amount: **$99,434**, not funded.

J. Braasch, *Surviving at the Cocktail Party: A Knowledge-based Binaural Model Approach for Computational Auditory Scene Analysis (CASA) Applications*, submitted to NSF/CAREER (07/11), requested amount: **$484,011**, not funded.

J. Braasch (PI), S. Bringsjord (Co-PI), J. Goebel, (Co-PI), J. Hendler (Co-PI), R. Radke (Co-PI), E. Ameres (senior researcher*), Development of the Collaborative-Research Augmented Immersive Virtual Environment Laboratory* (CRAIVE-Lab), submitted to NSF/MRI: Jan. 2011, requested amount: **$511,122**, not funded.

	J. Braasch (PI), J. Hendler (Co-PI), P. Oliveros (Co-PI) *The Telematic Circle: Technology for a Social Music Network for users across abilities,* submitted to NSF/SoCS, Nov. 2010, requested amount: **$750,000**, not funded. J. Braasch (PI), P. Oliveros (Co-PI), T. Krueger (Co-PI) *Two Hands: A micro-ergonomic interface approach to perform bimanual tasks using facial expressions,* submitted to NSF/RAPD, Sept. 2010, requested amount: **$140,000**, not funded. J. Braasch, P. Oliveros, D. Van Nort, D. Whalen, *Improvising music with intelligent agents ,* submitted to NYSCA (May 2010) requested amount: **$10,000**, not funded. J. Braasch, T. Krueger (2010) Architecture and the Senses, submitted to NYSCA (May 2010) requested amount: **$10,000**, not funded.
Lonn Combs	**Professional Record** since 2004 NCARB certification since 2014 Registered Architect in the Commonwealth of Massachusetts since 2001 Registered Architect in the state of New York 2004-2011 Registered Architect in the state of Texas 1997 Registered Architect in Germany, Federal State of Berlin, *Architektenkammer Berlin* **Awards/Grants** 2011-2012 Fellow at the American Academy in Rome 2011-12: Gorham P. Stevens Rome Prize Winner in Architecture Proposal: 'New Vectors of Liquid Stone: Speculations on the Material Innovations of Pier Luigi Nervi and the Roman Tradition'. **Selected Exhibitions** 2014-15 MIRAGE GARDEN; a proposal by EASTON+COMBS OMI International Art Center; ***Invited Solo Exhibition (design proposal)*** 2013 Surface Innovation: Redefining Boundaries of Interior and Exterior Spaces Invited Group Exhibition, Center for Architecture, NYC 2011 NYNP2010: New Practices New York in São Paulo, Brazil Group Exhibition at the International Architecture Biennial, October / November 2011 2011 Concrete Geometries Exhibition, Architectural Association, London UK Group exhibition at the AA's Front Members Room, Spring Term 2011 2011 Extension Gallery, Chicago: environmental installation Invited solo exhibition, February 2011 2010 Association for Computer Design in Architecture, October 21st to 24th 2010 Peer reviewed exhibition featuring research in structural surfaces and the LUX NOVA project. 2010 'Remanufactured Veilscapes', Material prototypes from the Hunter Douglas Light Research Studio Black Box Gallery, RPI School of Architecture, Troy, New York. September 20th to November 8th 2010 2010 Concrete Geometries, Architectural Association, London UK: PREVIEW Shortlist selected exhibition at the AA's Back Members Room, May 15th through June 5th, 2010

2010 NYNP2010: New Practices New York 2010 Award Exhibition at the AIANY New York, July 15 to October 23, 2010

2010 LUX NOVA / MoMA P.S.1 exhibited at the MoMA, June 30 to August 23rd 2010. MoMA PS1 Young Architects Program

2010 2010 AIANY Design Awards Exhibition, Invited Exhibition at the AIANY New York, April 15 to July 3, 2010

2010 MoMA P.S. 1 Young Architects Program, Invited Exhibition at the Museum of Modern Art New York, spring-summer 2010

Selected Lectures and Presentations
2012 Shop Talk Series Public Lecture: 'Less is (doing) More'; American Academy in Rome, Rome Italy

2010 2010 New Practices: EASTON+COMBS presentation, Public Lecture, November 04, 2010, NYAIA Center For Architecture, New York City

2010 'Remanufactured Veilscapes', Gallery Talk and discussion, September 20th, RPI School of Architecture

2010 2010 New Practices Winners Symposium, Public Lecture and discussion, July 29th, 2010, NYAIA Center For Architecture, New York City

Competition Awards
2013 Times Square Alliance, Valentines Day Public Art Installation, Invited Competition: Finalist (1 of 7 offices)

2011 BOFFO Building Fashion Series 2012: Ohne Titel Concept Store, New York City, First Place (65 entries)_5

2010 Concrete Geometries: Spatial Form in Social and Aesthetic Processes, Research Cluster
Architectural Association, Research Cluster. LUX NOVA project selected for exhibition and publication series from 'Call for Submissions' process. 1 of 20 projects selected (415 entries)

2010 The City of Dreams Pavilion: Kaleidoscape: Finalist (1 of 4 offices)

2010 MoMA P.S. 1 Young Architects Program; P.S.1 Competition: Invited Finalist (1 of 5 offices)

Symposia Contributions
2015 ACADIA 2015 Conference (Association for Computer Aided Design in Architecture) University of Cincinnati, *Technical Co-Chiar, curating conference theme, directing peer review process, directing conference proceedings and editing published proceedings (to be published in 2015)*

2015 The Daylight Symposium 2015, London UK. Invited to present at conference through peer review process, Constructing in Natural Light: the Aesthetics of Well Tempered Domestic Environments Presentation and design analysis of EASTON+COMBS research and design of domestic architecture. *Article and projects to be published as part of the conference proceedings in 2015* Architectural Publications including / featuring work by EASTON+COMBS or Lonn Combs

	2012 Architectural Record's Design Vanguard 2012: EASTON+COMBS, Feature Article Architectural Record 12/2012 (Annual Design Vanguard Issue) 2012 International Magazine of Space and Design: Issue 094 Retail: featuring Ohne Titel Concept Store, May 2012; Pages 144-145 2012 YAPI Architecture and Design Magazine, Ohne Titel Concept Store, Pages 114-120 Issue: YAPI Dergsi 366, May 2012 2012 The Glimpses Series: Interview with Lonn Combs, American Academy in Rome (online article) 2012 AIT 3.2012, Ohne Titel Concept Store, Feature Article 2012 Domus Web, Ohne Titel Concept Store (online article) 2011 Interior Design Magazine, ID9 July 2011, CHANGING ROOM, Feature Article 2011 Fast Co. Design (online article), CHANGING ROOM (April 18th 2011) 2011 MARU Interior, Lifestyle Design, vol. 110 2011, CHANGING ROOM, pages 36-37 2011 Atlas of Concrete Geometries, AA Publications, EASTON+COMBS featured in forthcoming publication of C.G. research cluster
D. Como-dromos	**Publications** 2012 D. Comodromos, J. Ellinger "Material Intensities" Proceedings of the 2012 ACADIA Conference, *Synthetic Digital Ecologies.* 2012 R. Campbell, D. Comodromos, D. Stasiuk. "Geometry Resolution + Special Detailing of Pre-Cast Panel Structural Support System." **Lectures / Exhibits** **2013** "Advancements in Sustainable Envelope Design" Speaker as CASE Faculty at Urban Green Council, Green Salon. (August 22nd). *Resiliency + the Built Environment Colloquium.* "Couple Human + Natural Coastal Systems." Panelist, regarding Ramses Square competition Entry, Method Design. (April 18th). **2012** "Material Intensities" Session 2 of the 2012 ACADIA Conference, *Synthetic Digital Ecologies,* (October 18th). "Geometry Resolution + Special Detailing of Pre-Cast Panel Structural Support System." Session 1 of the 2012 ACADIA Conference, *Synthetic Digital Ecologies, (*October 18th). "Material Intensities" Opening Lecture to the 2012 Smartgeometry Conference with J. Ellinger. (March 19th). Talkshop Session 4: Innovative Practice. Session Moderator. (March 23rd). Opening Remarks to the 2012 Smartgeometry Symposium with J. Ellinger. (March 24th). "Geometry Resolution + Special Detailing of Pre-Cast Panel Structural Support System." 2012 ACADIA Conference, *Synthetic Digital Ecologies, October 19th, 2012* at California College of the Arts, San Francisco

	2011 "Cairo" Method Design, six-part lecture series. New York City **2010** "Project: Distortion" Method Design +RPI SoA in collaboration with Royal Danish Academy Dept 8 Pavilion for international music festival, "Copenhagen Distortion" Copenhagen Denmark "Deupree Residence" Method Design lecture with R. Campbell (April) NJIT, New Jersey "Project Distortion" Method Design +RPI SoA in collaboration with Royal Danish Academy Dept 8 Pavilion for international music festival, "Copenhagen Distortion.' Troy, NY + Copenhagen Denmark **Praxis Research** 2012-2013 Spain (Madrid, Barcelona), Italy(Torino, Milan, Como + Rome), Switzerland (Zurich, Geneva, Basel, Valles), France (Ronchamp, Tourette, Firminy, Marseilleis, Montpellier) . Academic travel associated with Brownsfellow Award. Research of the works of Gaudi, Nervi , Maillart + Le Corbusier in the context of Analogical Modeling techniques, and the present use of simulation modeling in digital design. 2010-2011 Copenhagen, Denmark. Professional Travel associated with awarded commissions and grants from the Danish Ministry of Culture, Distortion Festival, and National Theater of Denmark. June 2010, travel with 12 students for two weeks for installation of pavilion.
Gustavo Crembil	**Invited Speaker / Lecture** 2015 "Informal Practice(s)." California State University – Long Beach, College of arts. 2014 Recent Work. Cranbrook Academy of Art. Michigan. December 5, 2014. 2014 Recent Work. "Tactical Robotics: Latin American Media Art at the Intersection of Pedagogy" Symposium. University of Northern Texas, Denton TX. October 1-3, 2014. 2014 Haptic Thinking. Contemporary Craft in Architectural Education and Practice. World Congress of Designers. Dalian, China. June 27-29. 2013 Recent Work. 2013 S.O.S Ciudades Conference at Macapa, Brazil. 2011 Parametrias Manuales. Facultad de Arquitectura, Univ. Ricardo Palma. Lima, Peru. 2011 Parametrias Manuales. La Cupula Art Gallery / Media Lab. Córdoba, Argentina. **Books** Crembil, Gustavo. El Projecto Paraguas (Buenos Aires: Nobuko), aprox. 140 pages. (forthcoming, estimated release: 2015]. Crembil, Gustavo and Paula Gaetano. Mestizo Robotics. Publisher TBD. In progress. Crembil, Gustavo (Editor). Regional Initiatives. Re-Imagining The miSci in Schenectady (Troy: Rensselaer School of Architecture and Schenectady Museum of Innovation and Science, 2013), 236 pages.

Crembil, Gustavo (Editor). Interweave: Urban Interworkings at Shanghai's South Bund. Rensselaer School of Architecture and CAUP / Tongji University (Shanghai: China Architecture & Building Press, 2013), 292 pages.

Invited Book Chapters

"El Proyecto Paraguas / The Umbrella Project. Craft knowledge as tactical tool in marginalized communities in Argentina" in Craft-in-the-World, edited by Clare T. Burke and Suzanne Spencer-Wood. Springer. (forthcoming)

"Craft, design and recycling as social technology" in Re-Use, edited by Bradley Guy. Routledge. (forthcoming)

"Arquitectura Tactica" in Arquitectura y Ciudad. Del Proyecto al Ecoproyecto. Roberto Fernandez (Editor). Publisher: Nobuko, Buenos Aires + Ediciones de la U, Bogota. 2013. pp.113-120

"Un Urbanisme Mineur pour une Ville de Hiatus" in No City Guide # 1: Shanghai High (ePub), edited by Matthieu Duperrex and Claire Dutrait (Toulouse: URBAIN trop URBAIN, 2012), p.265-271.

Peer-Reviewed Articles

"Mestizo Robotics", co-authored with Paula Gaetano Adi, in Leonardo Journal (Leonardo/International Society for the Arts, Sciences and Technology; and MIT Press), forthcoming 2016 (online 2015)

"Making as Thinking. Notes from the Southern Cone", in Dialectic # 3: Dream of Building or the Reality of Dreaming. Checking the Pulse: Design Build Practices, edited by Shundana Yusaf and Ole W. Fischer (Salt Lake City: University of Utah Press), forthcoming Spring 2015.

[pending] "Travesias and Rondas": The Persistence of the Design/Build in South American Architecture', in Craft & Design Inquiry #7: Landscape, Place and Identity in Craft and Design edited by Kay Lawrence. (Canberra: Australian National University Press).

"Otisco House. Do-It-Together" in From The Ground Up: Innovative Green Homes. Peggy Tully (Editor) (New York: Princeton Architectural Press, 2012), p128-137.

Exhibitions (Juried)

Disruption in ISEA 2015: 21st International Symposium on Electronic Art. Vancouver, Canada.

Transitio_MX 05 International Festival. Centro Nacional de las Artes, Mexico City, 2013..

Sachaqa: Temporada Seca. Suchiche Centro Cultural, Tarapoto, Peru, 2013.

Building Futures: Re-Envisioning The Hyde at Rensselaer. The Hyde Collection, Glenn Falls, New York. February 11 – April 15, 2012. Included "Messaterra", extension proposal co-authored with Florencia Vetcher and Guillermo Bernal.

Acadia / Flatcut Competition Awards. Acadia 2011 Annual Conference. Banff, Calgary. October 11-16, 2011

Design Revolution Road Show, curated by Emily Pilloton (Project H). Travelling exhibition through at 36 design schools and colleges across the U.S., 2010

Articles / Citations

[citation] Rensselaer President's Report 2014. Rensselaer Polytechnic Institute. pp 34.

[citation] Kayla Anderson, "Object Intermediaries: How New Media Artists Translate the Language of Things" in Leonardo, Vol. 47, No. 4, 2014, pp. 355.

[citation] Rennie Jones, "Where Are They Now? The Legacy of MoMA PS1's Young Architects Program", in Architizer (website), August 7, 2014.

[citation] "Students Re-Envision Science Museum and Campus, in Rensselaer Alumni Magazine, Winter 2013-14, p9.

[citation] "Gustavo Crembil Awarded VIDA Grant", in Rensselaer Alumni Magazine, Spring 2013, p12.

[citation] Rodrigo Alonso, Veronica Tejeiro, and Graciela Taquini, "Cronologia 1992-2012" in *Recorridos: arte, ciencia y tecnologia* (catalog) (Buenos Aires: Centro Cultural Recoleta) pp. 75, (2012).

2010 "2009-10 Best Design as Scholarship Article: No Resistance" in Architectural Education Awards (Washington DC: Association of Collegiate of Schools of Architecture) p77-79.

Conference Proceedings

"Walking Away: Alternative Practices in South America Southern Cone in The 1960's and Their Legacy", in WORKING-OUT: Thinking While Building. 2014 Fall Conference, Association of Collegiate of School of Architecture (ACSA), Dalhousie University (Halifax). October 2014.

"Haptic Thinking. Contemporary Craft in Architectural Education and Practice", in 2014 AWCD (1st Annual World Congress of Designers), (Dalian, China: BIT Congress, June 2014), pp 42.

"Mestizo Robotics", in Re-New 2013 Proceedings. Chair: Gunalan Nadarajan. (Copenhagen: Re-New Digital Arts Forum, October 2013), pp. 96-100.

"Entramados Globales y Locales. Textiles Tectonicos en el Amazonas", in 1st International Conference "Architecture & Sustainabilty in the Amazonia. Colegio de Arquitectos de Peru (Reg. Loreto). Iquitos, Peru. July 2013.

"Craft, design and recycling as social technology" in R+R 2013 Reclaim and Remake International Symposium, Washington, DC. April 2013

"El Proyecto Paraguas / The Umbrella Project. Craft knowledge as tactical tool in marginalized communities in Argentina" . Crafting The World (Session), Theoretical Archaeology Group Conference. University of Liverpool, UK.

"Pseudospheric Operations" in Acadia 2011: Integration Through Computation. 31st Annual Conference of the Association for Computer Aided Design in Architecture (ACADIA), edited by Jason S. Johnson, Joshua M. Taron, Vera Parlac, and Branko Kolarevic. pp154.

Grants and Funded Projects

Winner (with Paula Gaetano Adi), Artistic Production Incentive [EU 9,000]. VIDA 14.0 Art & Artificial Life Awards. Fundacion Telefonica, Spain, 2012.

Winner. The Robert S. Browns '52 Faculty Travel Fellowship Award [$15,000]. SoA RPI (2011)

Adam Dayem	**Awards / Fellowships** MoMA PS1 – nominated in 2014 to participate in 2015 Young Architects Program. **Exhibits / Installations / Lectures** "Drawing Futures" *Invited lecture – Rensselaer School of Architecture, 2014* Rensselaer School of Architecture *Exhibition of Faculty Work at Smart Geometry Conference, 2012* Pratt Institute *NCARB Exhibition of Faculty Work, 2010* **Selected Publications** *Drawing in the Digital Age,* essay in Fresh Punches, edited by Nathan Hume, Abigail Coover Hume, and Paul Ruppert, 2013 New Atlantis, A City for Voluntary Exiles *http://www.evolo.us/architecture/vertical-exile-for-island-nation-new-atlantis-by-adam-dayem/,* 2013 *La Nouvelle Atlantide,* Le Journal du Dimanche, 21 July, 2013 Interview describing New Atlantis, A City for Voluntary Exiles Last Destination: Bucharest, On The Move Conference *Contributed drawing for conference poster, 2013* Moon Monster, An Architectural Folly *http://www.suckerpunchdaily.com/2012/10/05/moon-monster-an-architectural-folly/#more-25047*, 2012
Brian DeLuna	**Critic / Juror** Columbia University Graduate School of Architecture University of Pennsylvania // PennDesign Pratt School of Architecture Yale School of Architecture Rensselaer RPI Architecture TU Wien // Vienna University of Technology Die Angewandte // University of Applied Arts Vienna NJIT School of Architecture **Publications** Fresh Punches: Experimental Architecture Exhibition Catalogue Nathan Hume (Author), Abigail Coover Hume (Author), Paul Ruppert (Author) Perceptual Twist: Maribor Art Gallery Competition_ Featured on Archdaily, Evolo, Suckerpunchdaily, Dezeen... Aug 2010
Joshua Draper	**Publications** 2010 'Groups and Spaces: Mapping Collaborative Cultural Production and Social Art Practices," Christopher Kennedy – fabrication, drawings. 2010 "Jorge Otero-Pallos: The Ethics of Dust," Daniela Zyman, Daniel Birnbaum, Eva Ebersberger, Jorge Otero-Pallos – fabrication, photography. **Awards / Competitions**

	Agricultural By-Product Modular Building Integrated System (AMBIS) Nexus NY 2015 Racing Light Invited design competition (with PrePost), Finalist 2011 Girard Pointe: Design Philadelphia Design competition (with PrePost), awarded 1st place 2010
Anna Dyson	**Work Featured in Books and Monographs** Dyson A, Koratkar N, Stark PRH, Vollen J, Andow B, Thomas A, Suresh S, Krietemeyer B, Shultz J, "Prototyping of Nanostructured Materials for Dynamic Glazed Facades," in *Prototyping for Architects*, eds. Mark Burry, Jane Burry. London, UK: Thames and Hudson, 2015 (In Press). Print. Cover Feature *Architectural Products* October 2014. Cover Feature *Oculus,* Fall 2104. Inside Prefab: The Ready-made Interior by Deborah Schneiderman. Princeton Architectural Press, 2012. Upcoming “Permanent Change” in Plastics in Architecture and Engineering, Princeton Architectural Press, 2011. “Combinatorial Synthesis,” in Post-Ductility: Metals in Architecture and Engineering. Editors: Michael Bell, Craig Buckley Princeton Architectural Press, 2011. Building Envelopes: An Integrated Approach by Jenny Lovell. Princeton Architectural Press, 2010. **Journal Articles in Refereed Peer-Reviewed Publications** Andow, Brandon C., Justin Shultz, Jason Kirkpatrick, Bess Krietemeyer, Allison Clark, Teresa Rainey, and Anna Dyson. "Co-Modeled Whole Building Energy Use and Visual Comfort Performance of Electroactive Dynamic Daylighting Systems Using Tools for Dynamic Complex Fenestration Systems." *Energy and Buildings* (2015, Status: Under Review). Andow, Brandon C., Shravan Suresh, Greg Theophall, Ajay Krishnamurthy, Nikhil Koratkar, Anna Dyson, and KV Lakshmi. "Multi-Functional Energy Harvesting and Energy Efficiency Dynamic Facades Using Reduced Graphene Oxide Thin Films Functionalized for Solar Water Oxidation." (2015, Upcoming Publication) Gallardo, D., et al. “Effects on aerodynamic and climatic performance of buildings due to envelope surface perturbations.” (2015) *Status: in review Spring 2015.* Smith, S., Lokko, M., Dyson, A., Oberai, A., Zaide, D., Shultz, J., “Building Integrated Hygrothermal Biopolymer Sorption Systems for Dynamic Moisture Control and Water Harvesting”. Building and Environment, The International Journal of Building Science and its Applications. Status: Projected May 2015 Lokko, M., Eglash, R., Dyson, A., Lachney, M., Bennett, A., “Cultural Networking in An Era of Cosmopolitanism: Adinkra As a System of Resistance and Adaptation.” International Journal of Design. Status: Projected June 2015

Lokko, M., Roggenkamp, S., Nyman, M., Dyson, A., “Characterization of Volatile Organic Compound Sorption onto Organic Materials in Gas and Liquid Phases – Applications across Building Systems for Indoor Air Remediation” ACS Environmental Science & Technology”
Status: Projected July 2015

Lokko, M., Smith, J., Dyson, A., “Physical and Chemical Properties of Coconut-Husk Derived Biomaterials and Technological Pathways for Load Reduction and Indoor Air Quality Remediation in the Hot-Humid Climates.” Building and Environment. Status: Projected October 2015

Smith, Shane, Dyson, Anna “Framework for Tetra-functional Control of Viscoelastic Molecular Entropy in Biopolymeric Hydrogel Dynamics for Environmentally Responsive Metabolic Processes in Morphological Architectural Membranes” in Proceedings of Materials Research Society, *Adaptive Architecture and Programmable Matter—Next Generation Building Skins and Systems from Nano to Macro,* April 2015.

Bess Krietemeyer, Brandon Christopher Andow, Anna H. Dyson, “Human-Facade-Interaction: Constructing Augmented Reality Simulations for Co-Optimizing Dynamic Building Skin Performance According to Multi-User and Bioclimatic Response”, Proceedings of Materials Research Society, *Adaptive Architecture and Programmable Matter—Next Generation Building Skins and Systems from Nano to Macro,* April 2015.

Novelli, Nicholas. Shultz, Justin. Dyson, Anna. “Development of a Modeling Strategy for Adaptive Multifunctional Solar Energy Building Envelope Systems.” *Simulation for Architecture and Urban Design (SimAUD), Washington DC, April 2015*. Society for Computer Simulation International, 2015.

Thomas, Abhay V., Brandon Andow, Shravan Suresh, Anna Dyson, and Nikhil Koratkar. "Conrolled Crumpling of Graphene Oxide Films for Tunable Optical Transmittance." *Advanced Materials* (2015, In Press).

Krietemeyer, Bess, Brandon Andow, and Anna Dyson. "A Computational Design Framework Supporting Human Interaction with Environmentally-Responsive Building Envelopes." *International Journal of Architectural Computing* 13.1,2015: 1-24. Print.

Lokko, M., Dyson, A., Vollen, J. “Building Integrated Coconut Envelope Systems: Rethinking the Role of Low-tech materials for High Performance in the Hot-humid Region.” Proceedings of the XXV International Union of Architect’s World Congress, Durban, South Africa, 3-7 August 2014. Ed. Amira Osman, Gerhard Bruyns and Clinton Aigbavboa. Durban: UIA 2014 Durban. pgs.1368-83.

International Union of Architect’s World Congress, Durban, South Africa, 3-7 August 2014. Ed. Amira Osman, Gerhard Bruyns and Clinton Aigbavboa. Durban: UIA 2014 Durban. pgs.1368-83.

Menicovich, D., Lander, D., Vollen, J.O., Amitay, M., Letchford, C., Dyson, A.H. “Improving Aerodynamic Performance of Tall Buildings Using Fluid-based Aerodynamic Modification,” *Journal of Wind Engineering & Industrial Aerodynamics,* 2104., 133: 263-273.

K. Winn, A.H. Dyson, J. Vollen. "Thermo-regulating Future City Envelopes with Multivalent Surfaces." Conference Proceedings of Association of Collegiate Schools of Architecture (ACSA) Fall 2013, Fort Lauderdale, FL, 2013..

B.C. Andow, B. Krietemeyer, P.R.H. Stark, A.H. Dyson. "Performance Criteria for Dynamic Window Systems Using Nanostructured Behaviors for Energy Harvesting and Environmental Comfort." Conference Proceedings of Sensors and Smart Structures Technologies for Civil, Mechanical and Aerospace Systems, SPIE 2013, San Diego, CA, 2013.

Wilson et al. ACSA, 2013

Puerto et al., ACSA, 2013

Menicovich et al. ACADIA

Menicovich, D., Vollen, J.O., Amitay, M., Letchford, C., De Mauro, E., Rao, A., Dyson, A.H. "A Different Approach to the Aerodynamic Performance of Tall Buildings," *Council on Tall Buildings and Urban Habitat CTBUH Journal*, Issue 4, 2012.

K. Van de Riet, U. Berger, A.H. Dyson, J. Gowdy, S. Parks, E. Proffitt, M. Zeghal, J.O. Vollen. "Multidisciplinary Modeling of Coupled Mangrove and Urban Ecosystems." Conference Proceedings of SubTropical Cities 2011: Subtropical Urbanism Beyond Climate Change (Fort Lauderdale, Florida Atlantic University, 2011. 325 pp. ISBN: 978-0-615-54882-1.

E. Krietemeyer, S. Smith, A.H. Dyson. "Dynamic Window Daylighting Systems: Electropolymeric Technology for Solar Responsive Building Envelopes, " Conference Proceedings of Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring, SPIE 2011, San Diego, CA, 2011.

E. Krietemeyer, A.H. Dyson. "Electropolymeric Technology for Dynamic Building Envelopes," Conference Proceedings of Parametricism: (SPC), ACADIA 2011, Lincoln, Nebraska, 2011.

A.H. Dyson, Vollen, J.O., Ngai, T.C. "Characterizing the Problem: Bioenergetic Information Modelling," BIM in Academia. Proceedings from The Yale BIM Symposium, 2011.

K. Steinfeld, J.O. Vollen, A.H. Dyson. "Graphic Evaluative Frameworks," Conference Proceedings of LIFE in:formation: On Responsive Information and Variations in Architecture, ACADIA 2010, New York, NY, 2010.

A.H. Dyson, J.O. Vollen, T.C. Ngai. "Active Modular Phytoremediation System." SOM Journal 6. October 2010.

J.O. Vollen, A.H. Dyson, and K. Van de Riet. (2010) "Investigation of mangrove compliant structural systems in association with human coastal development" (RE)building: Flood Architecture. ACSA Proceedings. 2010.

Major Refereed International Design Competitions/Publications

2012 ASSOCIATION OF COMPUTER AIDED DESIGN IN ARCHITECTURE (ACADIA), "Award for Most Innovative Academic Program." This award recognizes an innovative academic program that

contributes to the education of students in the field of digital design. Received Award

2011 SPARK AWARD CONCEPT DESIGN, "Active Modular Phytoremediation System." International design competition for promoting design that can make significant, positive changes in the world. Recieved Gold Award with Jason Vollen, Ted Ngai, and Matt Gindlesparger

2011 SPARK AWARD CONCEPT DESIGN, "Solar Enclosure for Water Reuse" International design competition for promoting design that can make significant, positive changes in the world.
Recieved Silver Award with Jason Vollen, Peter Stark, and Matt Gindlesparger

2011 SPARK AWARD CONCEPT DESIGN, "Climate Camouflage: High Perfromance Masonry System" International design competition for promoting design that can make significant, positive changes in the world. Recieved Broze Award with Jason Vollen

2011 ARCHITECT R+D AWARDS, "Solar Enclosure for Water Reuse" Architectural Peer review with Jason Vollen , Matt Gindlesparger, Kristin Malone, Peter Stark, and Satoshi Kiyono

2010 American Institute of Architects (AIA): ENCLOSURES, INTEGRATE : INNOVATE. "The Integrated Concentrating Solar Façade System." The Center for Architecture International Competition for Innovative Curtain Wall Design. (Merit Award)

2010 AIA: ENCLOSURES, INTEGRATE : INNOVATE. "Climate Camouflage" The Center for Architecture International Design Competition (Citation)

2010 BUCKMINSTER FULLER CHALLENGE,
"Structures for Wave Energy Absorption and Colonization of Mangroves" Semi-Finalist on international competition with Jason Vollen and Mourad Zhegal

2010 "Dynamic Next Generation Façade Systems: Heliotrace and HeliOptix" Urban Green Expo, Architectural Peer Review with US Green Building Council

Articles in Non-Refereed Journals

2010 Hirose, Daisuke. "Ethics + Aesthetics: Digital Membrane for an Ecological Era" A+U Architecture and Urbanism, New Directions: Sustainability and Technology

Articles Featuring Works

2014 Maione, Lisa. "Materials." METROPOLIS Magazine.

2012 Ernest, Beck. "The Center for Architecture Science and Ecology: How a global design firm and an academic institution collaborate." ARCHITECT Magazine

2012 Lennartsson, Peter J. "Solar Design from CASE also Purifies Water" sighenz: In The World Of Technology

2012 “SEWR, Using Solar Design to Purify Water” www.treehugger.com

2012 Sharma, Shallu. “Solar Enclosure for water reusability and energy conservation” www.DesignBuzz.com tntfactory.com

2011 Holt, Nicholas. “Practical Science: In the face of new technical challenges, these firms have designed a smarter way to practice architecture.” Architecture Boston

2011 Sokol, David. “Sustainable Skins: Facades that shade, display, and generatre.” SNAP: Sweets News And Products

2011 Martialay, Mary. “The CASE for Sustainable Building Materials.” The Approach: discovery, innovation, and immagination at Rensselaer Polytechnic Institute.

2010 Hill, Michael. “Solar Energy With Jewel-Like Curtains on Windows” The Associated Press (reprinted over 250 times in international journals)

2010 Kho, Jennifer. “Applications & Installations: Pretty and Efficient” PV Magazine

2010 Kho, Jennifer. “Overcoming the Ugly Factor in Building-Integrated Solar Design” The New York Times: Green Inc.

2010 “Using Root Systems To Save Energy, Clear the Air” Inside Rensselaer Volume 4, Number 6.

Installation Projects & Exhibitions

2012 SMART GEOMETRY 2012: MATERIAL INTENSITIES: SIMULATION, ENERGY, ENVIRONMENT, Troy, NY
Bioresponsive Building Envelope

2012 SMART GEOMETRY 2012: MATERIAL INTENSITIES: SIMULATION, ENERGY, ENVIRONMENT, Troy, NY
Form Follows Flow

2012 Upcoming 2012 PREPARING BUILDINGS FOR DISASTER, National Building Museum, Washington, DC

2011 FOR THE GREENER GOOD: CONVERSATIONS THAT WILL CHANGE THE WORLD, National Building Museum, Washington, DC

2011 WORLD FUTURE ENERGY SUMMIT 2011, Abu Dhabi, UAE
International annual meeting for the renewable energy and environment industry.
With USA Pavilion: Skidmore, Owings & Merrill LLP/ CASE

2010 INTEGRATE : INNOVATE. Center for Architecture, New York, NY
IC Solar Façade System

2010 WORLD FUTURE ENERGY SUMMIT 2010, Abu Dhabi, UAE
International annual meeting for the renewable energy and environment industry. With USA Pavilion: Skidmore, Owings & Merrill LLP/ CASE

Patents

1. Concentrating type solar collection and daylighting system within glazed building envelopes
   Anna H. Dyson, Michael K. Jensen, and David N. Borton
   Assigned to Rensselaer Polytechnic Institute, Troy, N.Y. (US)
   US Patent 7,745,723 B2 issued Jun. 29, 2010
   US Patent 7,190,531 issued Mar. 13, 2007

2. Method and apparatus for coastline remediation, energy generation, and vegetation support.
   Van de Riet, Keith, J.O. Vollen, A.H. Dyson.
   Assigned to Rensselaer Polytechnic Institute, Troy, N.Y. (US)
   U.S. Patent No. US 2012/0195685 A1. Issued 2013

Active Airflow Control for Buildings
Anna Dyson, Miki Amitay, Jason Vollen, Ajith Rao, David Menicovich
Filing with Rensselaer Office for Technology Commercialization - Jan 2011

2012_(BIFCS)_USApplNo61731889_RPI1423

'Umbrella Material, Device and System Patent Disclosure for Biopolymer Sorption Systems'
Status: Pending - *IP Disclosure in development,* submitted to The Office of Technology Commercialization (OTC).

'RPiSoC Screw Terminal Shield'
Status: Pending - *IP Disclosure in development,* submitted to The Office of Technology Commercialization (OTC).

Patent Applications

Thermovascular Systems for Buildings – Filing with RPI OTC. 2015.
Nick Novelli, Anna Dyson, et al.

Active Modular Phytoremediation System
Anna Dyson, Jason Vollen, Ted Ngai
Application Filed on April 25th, 2010, as Appl. No. 61\343,133

Solar Enclosure for Water Reuse and Thermal Comfort
Anna H. Dyson, Jason Vollen, Kristin Malone, Mark Mistur, Peter Stark, Matt Gindlesparger
Application Filed on Dec. 02, 2010, as Appl. No. 61\418,937.

Method and Apparatus for Building Coastline Remediation, Energy Generation, and Vegetation Support
Keith Van de Riet, Anna H. Dyson, Jason Vollen
Application Filed on Dec. 02, 2010, as Appl. No. 61\418,938.

Installation Projects and Exhibitions

2012 SMART GEOMETRY 2012: MATERIAL INTENSITIES: SIMULATION, ENERGY, ENVIRONMENT, Troy, NY
Bioresponsive Building Envelope

2012 SMART GEOMETRY 2012: MATERIAL INTENSITIES: SIMULATION, ENERGY, ENVIRONMENT, Troy, NY
Form Follows Flow

2012 Upcoming 2012 PREPARING BUILDINGS FOR DISASTER, National Building Museum, Washington, DC

2011 FOR THE GREENER GOOD: CONVERSATIONS THAT WILL CHANGE THE WORLD, National Building Museum, Washington, DC

2011 WORLD FUTURE ENERGY SUMMIT 2011, Abu Dhabi, UAE
International annual meeting for the renewable energy and environment industry. With USA Pavilion: Skidmore, Owings & Merrill LLP/ CASE

2010 INTEGRATE : INNOVATE. Center for Architecture, New York, NY
IC Solar Façade System

2010 WORLD FUTURE ENERGY SUMMIT 2010, Abu Dhabi, UAE
International annual meeting for the renewable energy and environment industry. With USA Pavilion: Skidmore, Owings & Merrill LLP/ CASE

Building Design Competitions – Works Submitted as Primary Content

2011 TANGJONG PAGAR, Singapore (Decision pending)(Confidential)
Skidmore, Owings & Merrill LLP with CASE Systems

2010 DOWNTOWN PLAZA RENOVATION, (Confidential)
Major urban installation proposed for the Active Modular Phytremediation System (AMPS), New York, NY
(Directed with co-principal SOM)

Building Design Competitions – Works Submitted in Support of Primary Content

2011 INCHEON AIRPORT, Korea (Decision pending)(Confidential)
Skidmore, Owings & Merrill LLP with CASE Systems

2010 K1+K2: JEDDAH CORNISCHE, Jeddah, Saudi Arabia (Decision pending)
Skidmore, Owings & Merrill LLP with CASE Systems
(Directed Sustainability submission of CASE Systems Research)

Research Grants and Contracts – Proposals Approved and Funded

2015 NEXUS
"Building Integrated Intelligent Desiccation System"
$75,000 Award to CASE
Co-Principal Investigator Marianne Nyman

2014 Skidmore, Owings and Merrill LLP (SOM)
"Center for Architecture Science and Ecology"
$175,000 Core Operating Expenses at CASE
$800,000 Space and Furnishings
$845,000 Equipment and Support
$400,000 Personnel Support
Project Director and Principal Investigator

2014 NYSERDA
"Building Integrated Flow Control System"
$100,000 Award to CASE
Co-Principal Investigator Miki Amitay

2014 NYSERDA
"Electropolymeric Dynamic Daylighting System"
$300,000 Award to SOM/CASE

2013 Skidmore, Owings and Merrill LLP (SOM)
"Center for Architecture Science and Ecology"
$175,000 Core Operating Expenses at CASE
$800,000 Space and Furnishings
$600,000 Equipment and Support
$650,000 Personnel Support
Project Director and Principal Investigator

2012 National Science Foundation
"Reducing Vibration and Wind Loads in Tall Buildings Using Fluidicbased Aerodynamic Modification"
$210,787 Award
Chris Letchford -Principal Investigator
Co-principal Investigator with Michael Amitay, and Jason Vollen

2012 Skidmore, Owings and Merrill LLP (SOM)
"Center for Architecture Science and Ecology"
$175,000 Core Operating Expenses at CASE
$800,000 Space and Furnishings
$645,000 Equipment and Support
$500,000 Personnel Support
Project Director and Principal Investigator

2011 New York State Research and Development Authority (NYSERDA)
"CASE – Center for Architecture, Science and Ecology"
$600,000 Award
Principal Investigator and Project Director

2011 Skidmore, Owings and Merrill LLP (SOM)
"Center for Architecture Science and Ecology"
$175,000 Core Operating Expenses at CASE
$255,000 Space and Furnishings
$445,000 Equipment and Support
$500,000 Personnel Support
Project Director and Principal Investigator

2011 Environmental Protection Agency (EPA)
Administered through Syracuse Center for Excellence in Environmental and Energy Systems (CoE)
"Dynamic Solar Façade System: Distributed power systems for building envelopes"
$36,940 Award
Principal Investigator and Project Director

	2011 NYSERDA "Active Flow Control Integrated Diffuser (AFCID) for Increased Energy Efficiency in Variable Air Volume Systems " $299,622 Award Jason Vollen -Principal Investigator Co-Principal Investigator with Michael Amitay and Peter Stark 2010 Skidmore, Owings and Merrill LLP (SOM) "Center for Architecture Science and Ecology" $175,000 Core Operating Expenses at CASE $135,000 Space and Furnishings $145,000 Equipment and Support $200,000 Personnel Support Project Director and Principal Investigator 2010 New York State Foundation for Science, Technology and Innovation (NYSTAR) $35,000 (Administered through the Center for Future Energy Systems (CFES) Project Director and Principal Investigator 2010 NYSERDA Administered through Comfortex Corporation "Energy Saving Dynamic Windows" $40,000 Award Principal Investigator and Project Director **Proposals Submitted and Not Funded** 2011 NYSERDA PON 1772: NEXT GENERATION EMERGING TECHNOLOGIES FOR END-USE EFFICIENCY "PON 1772- Active Modular Phytoremediation Systems: Development and Demonstration" $286,732 Award Co-principal Investigator with Jason Vollen, Nick Holt, Peter Stark, Ted Ngai 2010 ENERGY EFFICIENT BUILDING SYSTEMS REGIONAL INNOVATION CLUSTER INITIATIVE (NYE-RIC) "Building Energy Sustainability Systems Laboratory(BESSL)" (request for $175,000,000) Principal Investigator for Rensselaer within Multi-University Consortium led by Syracuse University. This Proposal was a Major Administrative Effort, with all schools represented and over 30 Rensselaer PI's. An Ongoing Effort is being made to continue the extended consortium. 2010 BSA RESEARCH GRANTS IN ARCHITECTURE/2011 "Healthcare Water and Waste Energy Systems Characterization" $36,000 Award Co-principal Investigator with CSArch
Mariana Figueiro	**Books, Design Guides and Monographs** Figueiro MG and Rea MS. Expected publication in 2015. Lighting, Health and Productivity. *Ergonomics Design for Healthy and Productive Workplaces*, edited by Alan Hedge. Taylor and Francis. In press.

Rea MS and Figueiro MG. 2014. Non-visual effects of colored light. *Handbook of Color Psychology*, edited by Andrew J Elliot and Mark D. Fairchild. Cambridge University Press. In press.

Figueiro MG. 2012. Biological-non visual effects of light. *Encyclopedia of Color Science and Technology*, edited by Ronnier Luo.

Leslie RL, Smith A, Radetsky L, Figueiro MG, and Yu L. 2011. *Patterns to Daylight Schools for People and Sustainability*. Lighting Research Center, Rensselaer Polytechnic Institute, Troy, NY. Sponsored by U.S. Green Building Council.

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Rea MS, Figueiro MG, Jones G, Glander K. Measuring Circadian Entrainment in Five Species of Lemurs. Poster presentation at *Society for Research on Biological Rhythms (SRBR) 2014*, Big Sky, MO, June 14-18, 2014.

Figueiro MG, Plitnick B, Rea MS. The Effects of Chronotype, Sleep Schedule and Light/dark Pattern Exposures on Circadian Phase. Oral presentation at *Society for Research on Biological Rhythms (SRBR) 2014*, Big Sky, MO, June 14-18, 2014.

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Figueiro MG and Rea MS. Comparisons of three practical field devices used to measure personal light exposures and activity levels. Poster presentation at *SLEEP 2012 26th Annual Meeting of the Associated Professional Sleep Societies, LLC*, Boston, MA, June 9-13, 2012.

Figueiro MG and Rea MS. Short-wavelength light enhances cortisol awakening response in sleep-restricted adolescents. Poster presentation at *Society for Research on Biological Rhythms Research (SRBR)*, Destin, FL, May 19-23, 2012.

Sahin L, Rea MS, and Figueiro MG. The impact of blue and red lights on objective and subjective alertness in the afternoon. Poster presentation at *Society for Research on Biological Rhythms Research (SRBR)*, Destin, FL, May 19-23, 2012.

Figueiro MG, Higgins PA, Hornick T, and Rea MS. Field measurements of circadian light exposures, activity levels, melatonin concentrations, and degrees of circadian entrainment in older adults. Abstract presentation at *2011 Annual Meeting of The Gerontological Society of America*, Boston, MA, November 18-22, 2011.

Figueiro MG and Rea MS. Exposure to daylight as well as to blue and red lights at night interact to affect nocturnal performance, subjective sleepiness and biomarker production. Abstract presentation at the *Society for Light Treatment and Biological Rhythms*, Montreal, Canada, July 10-13, 2011.

Figueiro MG and Rea MS. New tools to measure light exposure, activity, and circadian disruption in older adults. Poster presentation at *SLEEP 2011 25th Annual Meeting of the Associated Professional Sleep Societies, LLC*, Minneapolis, MN, June 11-15, 2011.

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Figueiro MG, Bierman A, Higgins PA, Hornick T, and Rea MS. The Dimesimeter, a user friendly circadian light meter. Poster presentation at the *2010 mHealth Summit,* Washington DC, November 8-10, 2010.

Appleman K, Figueiro MG, Rea MS, and Bierman A. Measuring, interpreting, and fostering healthy circadian rhythms. Poster presentation at the *2010 mHealth Summit,* Washington DC, November 8-10, 2010.

Figueiro MG and Rea MS. Both previous sleep and light at night affect the amplitude of cortisol and alpha amylase. Poster presentation at *SLEEP 2010 24th Annual Meeting of the Associated Professional Sleep Societies, LLC*, San Antonio, TX, June 5-9, 2010.

Sharkey K, Carskadon MA, Figueiro MG, Zhu Y, Gordon H, and Rea MS. The roles of a morning blue-light intervention and an earlier sleep schedule in phase advancing dim light melatonin onset (DLMO) of young adults. Poster presentation at *SLEEP 2010 24th Annual Meeting of the Associated Professional Sleep Societies, LLC*, San Antonio, TX, June 5-9, 2010.

Rea MS and Figueiro MG. Daysimeter: Measuring light and activity for assessing circadian entrainment in the field. Abstract presentation at *Society for Prevention Research*, Denver, CO, June 1-4, 2010.

Figueiro MG and Rea MS. The roles of circadian entrainment and sleep for psychosocial stress. Abstract presentation at *Society for Prevention Research*, Denver, CO, June 1-4, 2010.

Reports

Figueiro MG. July 31, 2014. The effects of light on biomarkers: implications for obesity and diabetes. Report submitted to Office of Naval Research (ONR).

Figueiro MG. July 5, 2013. *Modeling human circadian response to light for optimum performance in the field.* Report submitted to Office of Naval Research (ONR).

Figueiro MG, Bierman A, Plitnick B, Rea MS. December 17, 2012. *Development of a sleep mask for delivery of light at night to synchronize circadian phase with rest-activity patterns – Phase 3*. Report submitted to Philips/Respironics.

Figueiro MG. July 6, 2012. *Modeling human circadian response to light for optimum performance in the field.* Report submitted to Office of Naval Research (ONR).

Figueiro MG. March 15, 2012. *The impact of self-luminous displays on acute melatonin suppression*. Report submitted to Sharp Laboratories of America.

Figueiro MG, Rea MS, Bierman A. February 29, 2012. *Phase Shifting the Circadian System with a Light Mask Phase 2*. Report submitted to Philips Respironics.

Figueiro MG. July 6, 2011. *Color Information for the Circadian System.* Report submitted to Office of Naval Research (ONR).

Figueiro MG and Rea MS. 2011. *The impact of light emitting diodes on biomarkers*. Report submitted to Seoul Semiconductors.

Figueiro MG, Rea MS, Stone B, and Turner C. July 6, 2011. *The effects of light and caffeine on nighttime alertness: individual differences in response to fatigue countermeasures.* Report submitted to Office of Naval Research (ONR).

Figueiro MG, Rea MS, Keller MW. March 31, 2011. *Alerting effects of light at different circadian phases in humans – Final Report*. Report submitted to Office of Naval Research (ONR).

Keller MW, Steele CT, Figueiro MG, Marvin K, Rea MS. December 31, 2010. *At-Sea Operational Trial of 24-hr Based Watchstanding Schedules*. Report submitted to the Department of the Navy, the Department of Defense or the U.S. Government.

Figueiro MG, Bierman A, Plitnick B, Rea MS. September 30, 2010. *Development of a sleep mask for delivery of light at night to synchronize circadian phase with rest-activity patterns*. Report submitted to Philips/Respironics.

Figueiro MG, Rea MS, Stone B, and Turner C. June 30, 2010. *The effects of light and caffeine on nighttime alertness: individual differences in response to fatigue countermeasures.* Report submitted to Office of Naval Research (ONR).

Figueiro MG, Rea MS, Keller MW. June 30, 2010. *Alerting effects of light at different circadian phases in humans – Year 3*. Report submitted to Office of Naval Research (ONR).

Patent Applications

Incubator Lighting System
Mark S. Rea, Mariana G. Figueiro, Martin Overington, Jean Paul Freyssinier
US Provisional Patent Number # 61/990,845

Method And System For Facilitating Adjusting A Circadian Pacemaker
Andrew Bierman, Mark Rea and Mariana Figueiro
US Provisional Patent Application serial # 61/300,072

Light Therapy to Modify Circadian Rhythms
US Provisional Patent Application serial # 2012PF01187

Blue Light Pulses
US Provisional Patent Application serial # 2012PF01346

Research Proposals Approved and Funded
Total funded research since 2006 (with MG Figueiro as Principal Investigator, Co-Principal Investigator, Technical Investigator or Project Director). Total amount since promoted to Associate Professor (2010), MG Figueiro secured $7.5M in research contracts and gifts.

Indoor light and human health demonstration project – Phase 2. General Services Administration. $125,000. September 1, 2014 to August 31, 2015 (PI).

Circadian Rhythms Monitor Device. $45,000. Department of Defense through a phase 1 STTR grant from the Intelligent Automation Inc. (PI).

Measuring Circadian Disruption in the Field. Office of Naval Research. $116,600. June 1, 2014 to May 31, 2015 (PI).

Methodologies Issues in Tailored Light Treatment for Persons with Dementia. National Institute on Aging (R01 – competing renewal). $2,180,000. May 1, 2014 to April 30, 2019.

Light and Health Alliance - $220,000 from various sponsors, including Acuity Brands, Ketra Inc, Philips Lighting, OSRAM Sylvania, Sharp and USAI Lighting (PI).

Light Engine for Premature Infant Incubators, National Institute of Child Health and Development, NIH, through White Briar Corporation (R41). $50,000. October 1, 2013 to September 30, 2014 (Co-I: Figueiro; PI: Rea, PI: Robert White).

Indoor light and human health demonstration project, General Services Administration (GSA). $250,000. September 1, 2013 to August 31, 2015 (PI).

A Literature Review on the Chrono-effects of Light on Human Health, Illuminating Engineering Society. $30,000. January 1, 2013 to December 31, 2013 (PI).

Miners Health and Safety Issues Concerning Glare, Fatigue, and Shift Work, National Institute for Occupational Safety and Health. $24,500. August 20, 2012 to February 19, 2013.

Individually Tailored Lighting System to Improve Sleep in Older Adults, National Institute on Aging, NIH. $2,856,485. August 1, 2014 to June 30, 2017 (PI).

Literature Review of Lighting Systems and the Plant Requirements and Responses in Greenhouses, NYSERDA. $9,216. February 2, 2012 to April 2, 2012 (PI).

Development of a Sleep Mask for Delivery of Light at Night to Synchronize Circadian Phase with Rest-activity Patterns, Philips Respironics. $95,000. August 1, 2012 to March 31, 2014 (PI).

Sleep Deprivation Study Support, Science Applications International Corporation – SAIC (contractor for the Naval Submarine Research Medical Laboratory). $225,500. September 1, 2012 to August 31, 2015 (PI).

Data Analysis and Engineering Support for Enhance Light Project, Science Applications International Corporation – SAIC (contractor for the Naval Submarine Research Medical Laboratory). $21,800. September 1, 2012 to August 31, 2014 (PI).

Data Analysis and Engineering Support for Enhance Light Project, Science Applications International Corporation – SAIC (contractor for the Naval Submarine Research Medical Laboratory). $29,500. March 25, 2012 to August 31, 2012 (PI).

The Effects of Light on Biomarkers: Implications for Diabetes and Obesity, Office of Naval Research. $399,800. April 1 2012 to September 30, 2013 (PI).

Modeling Human Circadian Response to Light for Optimum Performance in the Field, Office of Naval Research. $790,000. October 1, 2011 to September 30, 2014 (PI).

Effects of Light Emitting Diode on Biomarkers, Seoul Semiconductors. $225,000. April 2011 to October 2011 (PI).

Smart Lighting for Personal Health, NSF (through Engineering Research Center). $268,548. July 2011 to July 2012 (PI; Co-PI: Mark Rea)

The Effects of Self-luminous Displays on Melatonin, Sharp Laboratories of America. $89,210. April 1, 2011 to June 30, 2012 (PI).

Further Development and Commercialization of the Daysimeter: An Ecological Light Measurement Device, NSF. $200,000. July 2010 to June 2011 (Co-PI, PI: Robert Karlicek and Mark Rea).

The Daysimeter and the Sharp Sensor, Sharp Laboratories of America. $36,000. April 2010 to April 2011 (PI).

The Effects of Red Light Exposure During a “Study Night” and Blue Light the Following “Test Day” on Scholastic Performance, Sharp Laboratories of America. $149,625. December 2010 to June 2011 (PI).

Smart Lighting for Personal Health, NSF (through Engineering Research Center). $268,548. July 2010 to July 2011(PI; Co-PI: Mark Rea).

Methodology Issues in a Tailored Light Treatment for Persons with Dementia: Develop a “Dimesimeter” and Test Effectiveness of Light Treatment on ADRD Patients and Caregivers, National Institute on Aging – NIH. $4,1811,172. May 2010 to April 2019 (PI).

Data Analyses and Engineering Support for Lighting Project, Science Applications International Corporation – SAIC (contractor for the Naval Submarine Research Medical Laboratory). $18,000. August 2010 to December 2010 (PI).

Color Information for the Circadian System, Office of Naval Research. $170,000 (PI). October 1, 2009 to March 31, 2012 (no cost extension).

Smart Lighting for Personal Health, NSF (through Engineering Research Center). $268,548. July 2009 to July 2010 (PI; Co-PI: Mark Rea).

Light as Controlling Stimulus for Behavior Cancer Research: Bridging Studies on Human Exposures to Light with Animal Models, National Cancer Institute – NIH. $130,593. 2009-2011 (PI).

Using Light to Increase Visual and Perceptual Cues to Increase Postural Control and Stability, National Institutes of Nursing Research – NIH. $362,189. 2009-2011 (PI).

Teaching Services, Clemson University. $22,000. 2008-2009 (PI).

Development of a Sleep Mask for Delivery of Light at Night to Synchronize Circadian Phase with Rest-activity Patterns, Philips Respironics. $407,685. 2008-2013 (PI; Co-PI: Mark Rea).

The Effects of Light and Caffeine on Nighttime Alertness, Office of Naval Research. $69,999. 2009 (PI).

The Effect of Colored Light on Mood and Alertness, Boeing. $78,000. 2008-2009 (PI).

Blue-White Light to Improve Sleep in Community Elderly with Alzheimer's Disease, National Center for Complementary and Alternative Medicine – NIH/Subcontract to University of North Carolina. $96,737. 2009-2011 (Co-PI; PI: Philip Sloane, UNC).

Quantifying the Impact of Daylight and Electric Lighting on Student Alertness, Performance and Well-Being in K-12 Schools, US Green Building Council. $250,000. 2008-2010 (PI; Co-PIs: Russ Leslie and Mark Rea).

Lighting Isn't Just for Vision Anymore: Implications for Transportation Applications Phase II, University Transportation Research Center. $25,000. 2008-2009 (PI).

Reducing Greenhouse Emissions, USEPA. $1,050,000. 2008-2011 (PI).

Proposals Submitted and Pending

Personal Light Exposure and Avoidance System to Facilitate Sleep in College Students. Eunice Kennedy Shriver National Institute of Child Health and Human Development ($2,619,768 over a 4 year period).

Lighting interventions to reduce circadian disruption in rotating shift workers. National Institute for Occupational Safety and Health (NIOSH) ($2,226,377 over a 4 year period).

Research Interests

Light and Health, energy efficient lighting, human factors in lighting and lighting applications

Invited Talks, Lectures and Papers

Non-visual Effects of Light. Invited Keynote Speaker at Lighting for Future Healthy Architecture. *Light Symposium KTH* 2015. Stockholm, Sweden, March 19-20, 2015.

Light and Health: Does "Do not Harm = Do nothing"?. Invited speaker at Strategies in Light, Las Vegas, NV, February 24-26, 2015.

Research to Practice – Lighting for Improved Environment of Care. Oral panel presentation at *HealthCare Design Conference*, San Diego, CA, November 15-18, 2014.

Lighting for Alzheimer's Care: Impact on sleep and behavior. Oral presentation at *HealthCare Design Conference*, San Diego, CA, November 15-18, 2014

Unexpected Regulatory Effects of Light on Humans and Animals, and Possible Parallels in Plants and Pathogens. Invited presentation at *Bioforsk, Norwegian Institute for Agricultural and Environmental Research*, Dahlsvei, Norway, November 12, 2014.

Invited speaker at TEDMED 2014. Kennedy Center, Washington DC, September 10-12, 2014.

Light Therapy for Patients with Dementia: Effects on Sleep and Behavior. Invited presentation at *Grand Rounds at St-Luke's Roosevelt Hospital*, New York, NY, October 1, 2014.

Light Therapy for Patients with Dementia: Effects on Sleep and Behavior. Invited presentation at *Grand Rounds at Icahn School of Medicine, Department of Psychiatry, Mount Sinai Hospital*, New York, NY, September 30, 2014.

Lighting for Improved Environment of Care. Presentation at 52nd *ASHE Annual Conference and Technical Exhibition*, Chicago, IL, August 3-6, 2014.

Shining a Light on Sleep, Metabolism and Body Weight. Presentation at Bench to Bedside Symposium, *SLEEP 2014 28th Annual Meeting of the Associated Professional Sleep Societies, LLC*, Minneapolis, Minnesota, May 31-June 4, 2014.

Lighting for Education Facilities – Non-visual Effects. *Illuminating Engineering Society of North America Research Symposium II – Light and Behavior – Influence of Light on Human Behavior*. Cleveland, OH, April 6-8, 2014.

Light and Health Update. Invited Seminar. *Illuminating Engineering Society of North America – San Francisco Section and Pacific Energy Center*, San Francisco, CA, February 26, 2014.

Light and Health Update. Keynote Speaker. HealthCare Lighting Seminar. Acuity Brands, Montreal, CA, February 12, 2014.

Lighting for Health Care, with Emphasis on NICU: The Science. Invited speaker, *Gravens Conference on the Physical and Developmental Environment of the High-Risk Infant,* Clearwater Beach, FL, February 7, 2014.

Light and alertness: Is there an alternative to blue. Invited speaker, *The 21st International Symposium on Shiftwork and Working Time,* Costa do Sauipe, Brazil, November 4-8, 2013.

Measurements of light at night. Invited plenary speaker, *ALAN 2013*, Berlin, Germany, October 28-30, 2013.

Lighting for older adults: What do we need from manufacturers. Invited speaker, *American Lighting Association Annual Meeting*, Austin, TX, September 24, 2013.

Light is not just for vision: an overview of the non-visual effects of light. Invited speaker, *York University CREATE Program in Vision Science & Applications*, Toronto, ON, Canada, July 17, 2013.

A system for delivering prescribed doses of circadian light. Abstract presentation at *Society for Light Treatment and Biological Rhythms*, Geneva, Switzerland, June 21-23, 2013.

Light and dark for phase shifting circadian rhythms: How to maximize the effectiveness of a light treatment with blue-blocking lenses. Invited speaker, *Society for Light Treatment and Biological Rhythms*, Geneva, Switzerland, June 21-23, 2013.

The effect of daytime light on alertness and performance. *Deutsches Institut für Normung e. V. (DIN) Expert Panel Meeting*, Berlin, Germany, June 6-7, 2013.

Workshop on circadian rhythms. Invited speaker (Skype presentation), *1st International Symposium of Blue Light Society*, Tokyo, Japan, June 6-8, 2013.

Sustainable light: Health implications. Invited speaker and session chair, *Advanced Energy 2013*, New York, NY, April 29-30, 2013.

Health consequences of shift work. Invited speaker, *Gravens Conference on the Physical and Developmental Environment of the High-Risk Infant,* Clearwater Beach, FL, February 29, 2013

Light and health: Truths and myths. Invited speaker, *Strategies in Light*, Santa Clara, CA, February 13, 2013.

Light and health overview. Invited seminar, University of Michigan, Ann Arbor, MI, January 29, 2013.

Light and health: An overview. Keynote speaker, *Health Care Lighting Seminar*, Acuity Lighting, Toronto, ON, Canada, December 10, 2012.

Light at night. Webinar presented on December 5, 2012.

Light and health: An overview. Keynote speaker, *Health Care Lighting Seminar*, Acuity Lighting, Minneapolis, MN, December 4, 2012.

Light and health: Bridging science to applications. Invited speaker, *Pufendorf Institute*, Lund University, Lund, Sweden. November 19, 2012.

Making a difference by design. Invited speaker at *Cornell University*, Ithaca, NY, October 22, 2012.

Light and health: An overview. Keynote speaker, *Health Care Lighting Seminar*, Acuity Lighting, Conyers, GA, October 8, 2012.

Light and health: An overview. Keynote speaker, *Health Care Lighting Seminar*, Acuity Lighting, New York, NY, August 28, 2012.

Light and health: An overview. Keynote speaker, *Health Care Lighting Seminar*, Acuity Lighting, Berkeley, CA, July 19, 2012.

The non-visual effects of light: Implications for new light sources and lighting systems design. Invited speaker at *LS-13 International Conference*, Troy, NY, June 24-29, 2012.

Lighting for rodent facilities. Invited speaker at the *Unique Lighting Applications for Plants and Animals Seminar*, Syracuse, NY, April 10, 2012.

Light and health: An overview. Keynote speaker, *Health Care Lighting Seminar*, Acuity Lighting, Conyers, GA, March 28, 2012.

Lighting for healthcare environments. Invited speaker at *Electro Expo 2012 – Connecting the Industry*, Cleveland, OH, March 21-22, 2012.

Light at night and health risks. Invited speaker at the *Outdoor Lighting LED Conference* in Ingeniørhuset, Copenhagen, Denmark (via Skype), March 20, 2012.

Human factors in lighting. Invited speaker, *Human Factors and Ergonomics Society at Cornell University*, Ithaca, NY, March 13, 2012.

Measuring circadian stimulus and dosage. Invited speaker at *Light + Seniors – A vision of the future*, 2012 Illuminating Engineering Society Research Symposium, Washington, DC, March 6-7, 2012.

Research update on light and human health. Invited speaker, *iGuzzini Showroom*, New York, NY, December 7, 2011.

Improving productivity in healthcare environments. Invited speaker, *Shedding Light on Healthcare Seminar*, Healthcare Association of New York State, Rensselaer, NY, November 30, 2011.

Lighting design for wellness: Integrating the needs of visual, circadian and perceptual systems. Educational session at the *Healthcare Design Conference 2011*, Gaylord Opryland Resort and Convention Center, Nashville, TN, November 13-16, 2011.

Light and human health. Invited panelist, *Research Summit on Childhood Health and School Buildings*, Boston, MA, September 30, 2011.

Light and human health: An update. Invited speaker, *Illuminating Engineering Society of North America Street and Area Lighting Conference*, New Orleans, LA, September 21, 2011.

Good lighting for students: Considerations beyond the classroom. Invited speaker at the *Deutsches Institut für Normung e. V. (DIN) Expert Panel Meeting,* Berlin, Germany, June 7, 2011.

The impact of self-luminous electronic devices on melatonin suppression. Invited speaker, *Society for Information Display*, Los Angeles, CA, May 15-20, 2011.

Gene-environment interplay in health behavior: From mechanisms to translation. Seminar speaker at the *32nd Annual Meeting & Scientific Sessions of the Society of Behavioral Medicine*, Washington, DC, April 27-30, 2011.

Lighting for older adults: Vision, safety and independence. *General Electric Technical Tuesdays for Specifiers Webinar*, presented on April 5, 2011.

Lighting technology: Visibility and health impact for older adults. Invited speaker and panelist at the *Aging 2.0: Technology, Trends + Transitions, 19th Florence Cellar Gerontology Conference*, Cleveland, OH, April 11, 2011.

The impact of light and daylight in schools. Invited talk at the *Green Building Symposium*, Florida A+M University School of Architecture, Tallahassee, FL, March 18, 2011.

	Improving productivity through lighting. Invited talk at the *Shedding Light on Healthcare Conference*, New York, NY, February 16, 2011. Light and health: Bridging science to applications. Invited talk at the *Illuminating Engineering Society Michigan Section*, Detroit, MI, January 11, 2011. Light and health: Can LEDs play a role? Invited talk at the *LEDs 2010 Conference*, San Diego, CA, October 24-26, 2010. Lighting for low vision. Invited speaker and panelist at the *Workshop on Improving Building Design for Persons with Low Vision*, National Institute of Building Sciences, Washington, DC, September 29-30, 2010. Light and health: Basics and applications. Keynote speaker at the *Third Annual Summer Research Event*, The University at Albany, Albany, NY, August 25, 2010. Developing 24-hr lighting schemes for older adults. Invited speaker at *CEEBEL (Centrum for Energieeffektiv Belysning) Energy Efficient Lighting in a Human Perspective Symposium*, Swedish Energy Agency, Katrineholm, Sweden, August 18-19, 2010. Light and human health. Keynote speaker at *CEEBEL (Centrum for Energieeffektiv Belysning) Energy Efficient Lighting in a Human Perspective Symposium*, Swedish Energy Agency, Katrineholm, Sweden, August 18-19, 2010. Light at night: The latest science. Invited talk at the *2010 Department of Energy Solid-State Lighting: Market Introduction Workshop,* Philadelphia, PA, July 20-22, 2010. Non-visual effects of light: implications for design. *Optical Society of America International Optical Design Conference (IODC)*, Jackson Hole, WY, June 13-17, 2010. The impact of light and human health: Research update. Invited talk at the *Illuminating Engineering Society of North America Hartford Section Meeting*, Hartford, CT, April 22, 2010. **Contributed Talks, Abstracts, Posters and Papers** Waniewski RA, Radetsky L, Stabler C, Repka A, Quinn T, Figueiro MG. Mouse running wheel activity under LED lighting to study circadian disruption. Poster presentation at *AALAS-QUAD Symposium*, Uncasville, CT, May 3-4, 2012. Cohen L, Figueiro MG, Reed D, Preisser J, Williams C, Zimmerman S, Sloane P. A home-based therapeutic lighting intervention to improve outcomes in dementia. Abstract presentation at *The Gerontological Society of America*, San Diego, CA, November 14-18, 2012. Radetsky L, Bierman A, Rea MS, Figueiro MG. Linking circadian disruption experienced by night-shift workers to animal models. Poster presentation at *CRCR New Frontiers Symposium 2012: Nanotechnology in Cancer Research and Treatment*, Albany, NY, November 8, 2012.
Fleet Hower	**Research Interests** My research interests involve the agency of topological formation in architecture and landscape architecture. This work seeks to generate formation through the organization of large data sets taken from sources uniquely relevant to particular projects. It vacillates in function, scale, and abstraction, using computationally embedded information to form a

	design process that is intelligent and productively decisive. My research has a great interest in emergent formation, which finds design outcomes impossible to predict yet laden with potential to fuse competing interests into a cohesive whole. **Lectures and Juries** May 2013 - Studio, Critic: Annette Fierro, University of Pennsylvania May 2013 - Studio, Critic: Ezio Blazetti, Pratt Insitutute March 2013 - Studio, Critic: Cecil Balmond, University of Pennsylvania March 2013 - Studio, Critic: Danielle Willems, University of Pennsylvania March 2013 - Studio, Critic: Adam Dayem, Rensselaer Polytechnic Institute December 2013 - Final Project jury, Critic: Chris Perry, Rensselaer Polytechnic Institute December 2013 - Final Project jury, Critic: Ted Ngai, Rensselaer Polytechnic Institute December 2013 - GeoFutures Post-Professional Jury, Critics: Casey Rehm and Zbigniew Oksiuta, Rensselaer Polytechnic Institute October 2013 - Lecture: "Recent Work," Senior Colloquium, Rensselaer Polytechnic Institute May 2013 - Studio Jury, Critic: Jenny Sabin, Cornell University May 2013 - GeoFutures Post-Professional Jury, Critics: Chris Perry, Andrew Saunders, Fleet Hower, Rensselaer Polytechnic Institute February 2013 - Lecture: "Collateral Intricacy," Carnegie Mellon University December 2012 - Studio jury, Critic: Francis Bitonti, Rensselaer Polytechnic Institute December 2012 - Studio jury, Critic: Sophia Krimizi, University of Pennsylvania December 2012 - Seminar jury, Critic: Roland Snooks, Columbia University December 2012 - Studio jury, Critic: Roland Snooks, Pratt Institute **Affiliations** **Cornell Architecture Scripting Group**: 2012 - present, *Member*: Organization of generative designers authorized to aide students in learning and understanding new methodologies **Nonlinear Systems Organization**: 2009 - 2012, *Researcher*: Design research organization at PennDesign formed by Cecil Balmond, interested in the phenomenon of emergent conditions and the way they may be leveraged to create unique design solutions **Awards** 2011: Anne Fisher Graduate Fellowship, PennDesign, University of Pennsylvania Scholarship, awarded to one male dual-degree student for academic excellence 2011: Lewis Dales Traveling Fellowship, PennDesign, University of Pennsylvania, Traveling fellowship awarded through class-wide portfolio competition
Lydia Kallippoliti	**Fellowships** 2013 Benjamin Menschel Faculty Fellowship, Faculty Grant in support of Lighting Research Seminar to design and fabricate an off-grid lighting installation for the 4th Street Cultural District. The installation will be displayed at the IDEA City Festival in New York. **Publications – Editorial Work** Kallipoliti, Lydia (2010) (ed.), "EcoRedux: Design Remedies for an Ailing Planet", Special Issue of *Architectural Design* magazine (AD), (London: Wiley and Sons, 2010). **Publications in Books and Magazines**

Design magazine (AD), (London: Wiley and Sons, 2010).

Kallipoliti, L (2013) *It is our obligation to translate the emerging ecology of the cloud,* Log, No.28 (Stocktaking, Summer 2013) Any Corporation.

Kallipoliti, L (2013) *Turtles Do Not Successfully Mate with Giraffes: Pluralism Versus Cloud, in* N. Hume, A. Coover, P.Ruppert (Eds), Fresh Punches: Experimental Architecture Exhibition Catalogue, (Brooklyn, NY: SuckerPunch Daily, 2013).

Kallipoliti, L, Tsamis, A (2013) *Vacuum Wall,* in P. Lorenzo-Eiroa, Aaron Sprecher (Eds), Architecture in Formation: On the Nature of Information in Digital Architecture (New York: Routledge 2013).

Kallipoliti, L (2013) *Air Flow Battlefields,* Lessons from Modernism: Environmental Considerations in Early Modern Architecture**,** (New York: Monacelli Press, 2013 forthcoming).

Kallipoliti, L (2013) *Vertical Liferaft,* Journal of Architectural Education (JAE), Vol.67, No.1, peer-reviewed.

Kallipoliti, L (2012) *I have a lump stuck in my throat!* Log, No.25 (Reclaim Resi[lience]stance, Summer 2012) Any Corporation.

Kallipoliti, L (2012) *The Bienalle Chronicles,* Abitare, No.526 (October 2012).

Kallipoliti, L (2012) *Déjà Vu: Environmental Architecture from "Object" to "System" to "Cloud",* PRAXIS: A Journal of Writing + Building**,** Issue: Eco-Logics, No.13.

Kallipoliti, L (2012) *From Shit to Food: The Eco House in South London (1972-1975),* Buildings and Landscapes, Spring 2012, Vol.19, No.1, peer-reviewed (Minneapolis: University of Minnesota Press).

Kallipoliti, L (2011) *Clearings in a Concrete Jungle* (Multimedia Review), Journal of the Society of Architectural Historians, Vol.70, No.1 (Berkeley, CA: University of California Press).

Kallipoliti, L and Young, M (2011) *The Envirobubble,* S.L.U.M Lab newspaper (Sustainable Living Urban Model), Spring 2011.

Kallipoliti, L (2011) *EcoRedux Manifesto,* S.L.U.M Lab newspaper (Sustainable Living Urban Model), Spring 2011.

Kallipoliti, L, (2011) *Return to Earth: Feedback Houses,* The Cornell Journal of Architecture, Issue 8: RE (Ithaca, NY: Cornell University, 2011).

Kallipoliti, L (2010) *No More Schisms* (Introduction to the issue), Architectural Design magazine (AD), Profile No.208 (London: Wiley & Sons, November-December 2010).

Kallipoliti, L (2010) *The Soft Cosmos of AD's Cosmorama (1967-1973),* Architectural Design magazine (AD), Profile No.208 (London: Wiley & Sons, November-December 2010).

Kallipoliti, L (2010) *Dross City,* Architectural Design magazine (AD), Profile No.208 (London: Wiley & Sons, November-December 2010).

Kallipoliti, L (2010) *Dry Rot: The Chemical Origins of British Preservation,* Future Anterior, Vol.7, No.1 Summer 2010, peer-reviewed (Minneapolis: University of Minnesota Press).

Kallipoliti Lydia, “Interviews with Antfarm, Robin Middleton, Peter Crump and Peter Murray in Beatriz Colomina and Craig Buckley (eds.), “Clip/Stamp/Fold: The Radical Architecture of Little Magazines 196x-197x (Barcelona: Actar Press, 2010).

Kallipoliti, L, (2010) *Spam City, “*Vima Ideon,” Inset to the Greek Newspaper “Vima”, Sunday Edition.

Kallipoliti, L, (2010) *At Home in Utopia* (Book Review for *Self-Sufficient Housing*), “The Architect’s Newspaper,” (New York), No.5, 03.17.2010.

Articles in Journals & Online Media Regarding My Design Work
William Menking, A report on the exhibition “Lessons from Modernism” for the Architect’s Newspaper, Blog, See http://blog.archpaper.com/wordpress/archives/56280

EcoRedux, A book design report from Archisearch Blog,
http://www.archisearch.gr/article/466/ecoredux-manifesto-by-lydia-kallipoliti.htm

The Envirobubble, A design report from Archisearch Blog,
http://www.archisearch.gr/article/429/the-envirobubble--clean-air-pods-redux-_-by-lydia-kallipoliti.htm

The Envirobubble, A design report from SuckerPunch Daily Blog,
http://www.suckerpunchdaily.com/2011/08/31/the-envirobubble-clean-air-pods-redux/#more-15654

Ethel Baraona Pohl*, EcoRedux 02: Design Manuals for a Dying Planet,* A design report from Barcelona, Domus magazine, April 2011. See http://www.domusweb.it/en/design/ecoredux-02-design-manuals-for-adying-planet/

Raúl Sánchez, *Ecoredux 02. Manuales de diseño para un planeta moribundo* (Review of the EcoRedux 02 exhibition at the Disseny Hub in Barcelona), Cyan magazine**,** April 07 2011. See http://www.cyanmag.com/diseno-foto/ecoredux-02-manuales-de-diseno-para-un-planeta-moribundo/

Curatorial Work
2013
Lessons from Modernism: Environmental Considerations in Early Modern Architecture**,** Chief Researcher of the Cooper Union Institute for Sustainable Design, Exhibition displayed at the Houghton Gallery of The Cooper Union, New York, NY.

2011
EcoRedux 02: Design Manuals and Cookbooks for a Dying Planet. Chief Curator in collaboration with Anna Pla Catala, The Design Hub (D-Hub), Barcelona, Spain.

Festival of Ideas for the New City organized by The Architectural League of New York, Session Leader and Curator for Workshop 02: The Built Environment at the New Museum of New York.

Architectural Work Exhibited in Venues
2013
World Science Festival. *Grid Off; Lights On,* Energy-generating lighting installation constructed for the Innovation Square of the World Science Festival in Brooklyn, New York.

Ideas City Festival. *Grid Off; Lights On,* Energy-generating lighting installation for the Ideas City Festival organized by the New Museum in New York.

2012
Past Futures, Present, Futures. *Extraterritorial Vacuum Cleaner,* design scenario and project exhibited at the Storefront for Art and Architecture, New York, NY.

2011
EcoRedux 02: Design Manuals and Cookbooks for a Dying Planet. *Felt Vacuum Wall,* prototype exhibited in the contemporary work section, The Design Hub (D-Hub), Barcelona, Spain.

The Envirobubble, Design Installation on indoor air quality in collaboration with Michael Young (Cooper Union), Anna Pla Catala (IE Madrid) and Marianthi Liapi-Kostis Oungrinis (Technical University of Crete). Exhibited at the Design Hub (DHub), Barcelona, Spain.

2010
Domicatec Metropolitan Expo (Athens, Greece), *"Panorama of Greek Contemporary Architecture 2007-2009",* Built work of "580 Park Avenue Renovation" in New York City received a mention and was selected for display in the exhibition. Organized by the "Domes" international architectural magazine.

Lectures
Kallipoliti, L (2013) *Mission Galactic Household,* Emerging Voices Lecture at University of Michigan, Taubman College of Architecture + Urban Planning, Ann Arbor, MI.

Kallipoliti, L (2013) *Cloud Crystallizing,* Lecture at the conference "The New Normal: Experiments in Contemporary Generative Design," University of Pennsylvania- UPenn Design, Philadelphia, PA.

Kallipoliti, L (2013) *Invisible Garbage Cities,* Waste Panel at the Ideas City Festival in New York, organized by the New Museum, New York, NY.

Kallipoliti, L (2013) *Slag Islands,* Beyond Waterproofing New York, Conference organized by the Spitzer School of Architecture and the Landscape Program of the City College of New York, NY.

Kallipoliti, L (2013) *Undigested Environmental Histories,* Princeton's Alternative Architectural Practices: Rethinking Technology, Princeton University School of Architecture, Princeton, NJ.

Kallipoliti, L (2013) *Capital as Dehydrated Filth,* Definition Series 03: On CAPITAL, Storefront for Art and Architecture, New York, NY.

Kallipoliti, L (2013) *The Envirobubble: Clean Air Pods Redux,* 101 ACSA Annual Meeting: New Constellations/ New Ecologies hosted by the California College of the Arts, San Francisco, CA.

Kallipoliti, L (2013) *The 6S Hypothesis,* Round-table panelist and presenter in the symposium Measured Expectations: Post Occupancy Evaluation of Sustainability in Built Work, organized by the Architectural League of New York and the Cooper Union Institute for Sustainable Design, New York, NY.

Kallipoliti, L (2013) Waterproofing New York, Panel Moderator in the session "Waste & Water," Conference organized by the Spitzer School of Architecture and the Landscape Program of the City College of New York, NY.

Kallipoliti, L (2012) *Environmental Architecture from Object to System to Cloud,* Lecture at Syracuse University hosted by the Syracuse/NYC program, New York, NY.

Kallipoliti, L (2012) *Deja-Vu; How Do we Recycle Ideas?* Lecture at MIT hosted by the SMArchS Colloquium, Cambridge, MA.

Kallipoliti, L (2012) *The Eco-House,* Presentation in the book launch event organized by *Building and Landscapes* journal at the Van Alen Institute Books, New York, NY.

Kallipoliti, L (2012) *Deja-Vu,* Presentation in the event "Interrogating Green" organized by Praxis journal of writing and building at the Storefront for Art and Architecture, New York, NY.

Kallipoliti, L (2012) *Counterculture in the Desert,* Conference organized by the Cooper Union Institute of Sustainable Design and the Buckminster Fuller Institute, The Cooper Union, New York, NY.
Kallipoliti, L (2012) *Mission Galactic Household: Feedback Systems from Outer Space Down to Earth,* Over, Under, On: Architecture and the Earth, Conference organized by the PhD Program as part of Cambridge Talks VI, Harvard Graduate School of Design, Cambridge, MA.

Kallipoliti, L (2012) *10 Questions for the Urban Planet,* Conference "Urban Planet" Emerging Ecologies" organized by the Cooper Union Institute of Sustainable Design and the ETH Zurich, The Cooper Union, New York, NY. I organized and chaired this conference.

Kallipoliti, L (2012) *101 Cloud Ecologies,* Yale School of Architecture, New Haven, CT.

Kallipoliti, L (2011) *The Plastic Soup: Gun-Shot Foam Shelters,* Permanent Change: Plastics in Architecture and Engineering, Columbia University, New York.

Kallipoliti, L (2011) *Clean Air Pods Redux,* Design Hub (D-Hub), Barcelona, Spain.

Kallipoliti, L (2011) *The Resurgence of Synthetic* Naturalism, 4th Nature: Mediated Landscapes, International Conference at the University of Waterloo, Toronto, Canada.

Kallipoliti, L (2011) *On Remedies,* Manifesto on Infrastructural Opportunism, The Storefront for Art and Architecture, New York, NY.

Kallipoliti, L (2011) *EcoRedux,* Manifesto on the EcoRedux book launch edited by Lydia Kallipoliti, The Storefront for Art and Architecture, New York, NY.

Kallipoliti, L (2011) *At the Intersection of Architecture, Nature and Technology,* NEAR Conference: Network for Emerging Architectural Discourse at Pratt Institute, Graduate Architecture and Urban Design, Brooklyn, New York, NY.

Kallipoliti, L (2011) *Feedback Houses,* Interrogation Series for the Cornell Journal of Architecture, The Storefront for Art and Architecture, New York, NY.

Kallipoliti, L (2011) *EcoRedux,* Ohio State University, Knowlton School of Architecture, Columbus, Ohio.

	Kallipoliti, L (2010) *From Shit to Food: The Eco-House in South London 1971-1976,* Annual Meeting of the Society of Architectural Historians (SAH), Chicago. Kallipoliti, L (2010) *Resource Redux,* Gallatin School of Individualized Study, New York University (NYU), New York, NY. **Research** **2013** **Research on off-grid lighting** to create an emergency lighting installation powering a street in New York City following hurricane Sandy. The research is conducted in collaboration with engineering students at the Cooper Union and was funded by the Benjamin Menschel Faculty Grant, the Feltman Lighting Fund and the Rockefeller Innovation Grant to create a product for the Idea City Festival in New York. **2012** **PhD Dissertation Research** focusing on the emergence of recirculatory households and self sufficient systems in the 1970s and the intersection of cybernetic and ecological theories as witnessed in the space program, Princeton University. **2011** **Research on biological life and ecological habitats in wetlands and the history of national parks.** Research funded by the Cultural Society of Entrepreneurs of Northern Greece and Columbia University under the auspices of the Columbia Studio X Summer Workshop in Greece, which I directed in July 2011. **Research on the history of ecological material experiments of the 1960s and 1970s** (garbage housing, recycling housing components, vacuumatics, pneumatics from used parachutes, hand-crafted domes et-al.). Research funded by the MIT Lawrence Anderson award for the creative documentation of history and the High Meadows Sustainability Grant. Online ecological wikipedia launched in September 2009 **www.ecoredux.com.** **2010** **Research on the Sick Building Syndrome, air purification techniques and HAVC systems in closed environments.** The research was funded by the Design Hub of Barcelona, the IE School of Architecture in Madrid and the Technical University of Crete in order to support the design and fabrication of an experimental air purification facility as a design installation at the Design museum of Barcelona in Spain.
Ted Krueger	**Workshops, Seminars and Tutorials** 2014 University of Brasilia, Institute for Science and Technology, Brazil. "Redesigning Human, a workshop on prosthetics for students from five engineering disciplines. Washington University in St. Louis, "From Dematerial to the Material," invited Chair of the annual Laskey Charette for Art, Design and Architecture students. 2013 Politecnico di Torino, Turin, Italy, "Visitor Center at the JRC-Ispra," Joint Architectural Design Workshop RPI/PoliTo (co-taught with Marco Visconti). **Visiting Design Critic** Alfred University Architectural Association - London, Bartlett School at the University College – London Clemson University Columbia University Cranbrook Academy of Art Dartmouth College

Duke University
Harvard University
Hochschule fur Bildende Kunst – Frankfurt
Kansas State University
Lawrence Institute of Technology
Lehigh University
Massachusetts Institute of Technology,
New Jersey Institute of Technology
Parsons School of Design
Pratt Institute
Politecnico di Torino,
Rensselaer Polytechnic Institute
Rheinisch-Westfalische Technische Hochschule – Aache
Rhode Island School of Design
Royal Melbourne Institute of Technology
Southern Polytechnic and State University - Marietta, Syracuse University
Technical University of Nova Scotia – Halifax
University of Arkansas
University of Arkansas Rome Center, Italy
University of Colorado – Boulder
University of Florida – Gainsville
University of Technology Sydney
University of Westminster - London,
Washington University, St Louis

Publications by or about: Books and Exhibition Catalogues

2014 StudioL, 2014 Laskey Charette Catalogue, Fox School, Washington University

2013 Krueger, I don't know. Glanville, R. ed. Trojan Horses: A Rattlebag from the Cybernetics: Art Design and Mathematics Post-conference workshop. Vienna: Echoraum

2012 Krueger, Perception prothetic, vers une conscience enlargie. in Daubner and Poissant eds.
BioArt: Transformations du vivant, Montreal: Presses de l'Universite du Quebec

Publications by or about: Periodicals

2014 Second Order Error, Cybernetics and Human Knowing

2013 Listening to the Inaudible, Cybernetics and Human Knowing

2011 '38Hz 7.5 Minutes' Inflexions5

2011 van Schaik, BY PRACTICE, BY INVITATION, Design Research at RMIT

Lectures, Papers and Public Presentations

2014 Int Symposium on Assistive Technology for Music and Art (ISATMA 2014), EMPAC, Rensselaer

Centro Universitario de Maringá (UniCesumar), Maringá, Paraná, Brazil

Instituto de Computação, Universidade Estadual de Campinas, SP, Brazil

Núcleo Interdisciplinar de Comunicação Sonora, Universidade Estadual de Campinas, SP, Brazil
Universidade de Brasília, Instituto de Ciência e Tecnologia, Gama, DF, Brazil

Universidade de Brasília, Faculdade de Ceilândia, Health Sciences, Ceilândia, DF, Brazil

Keynote Address, Pan American Health Care Exchanges, Brasilia

	2013 Deep Listening Conference, EMPAC, Rensselaer Polytechnic Institute, Troy, NY Duke University, Media Studies, Durham Int Symposium on Assistive Technology Music and Art (ISATMA 2013), EMPAC, Rensselaer ARCC conference, UNC-Charlotte 2012 New Jersey Institute of Technology, Newark 2011 Royal Academy of Architecture, Copenhagen MIT Architecture: Computation and Design Group Southern Polytechnic and State University, Marietta RMIT University, Melbourne University of Technology Sydney, School of Architecture 2010 Abramawitz Distinguished Lecture and Keynote Address ACSA Midwest Conference (with Ken Kaplan) **Exhibitions** 2013 MiSci Museum, Schenectady, NY (Student studio work) 2012 Sensing Environments, EMPAC Rensselaer, Troy, NY 2012 Hyde Museum, Glens Falls, NY (Student studio work) 2011 Guildford Gallery, Melbourne, Australia **Grants** 2014 Browns Traveling Fellowship, Brazil, Rensselaer Polytechnic Institute 2010 Jaffe Fund for the Performing Arts, EMPAC
Russell Leslie	**Books and Monographs** *Lighting Pattern Book for Homes,* Interactive Website http://www.lrc.rpi.edu/patternbook/about.asp, Russell Leslie, Jeremy Snyder, Jen Brons. Lighting Research Center, Rensselaer Polytechnic Institute, 2013. *Patterns to Daylight Schools for People and Sustainability.* Russell Leslie, Aaron Smith, Leora Radetsky, Mariana Figueiro, and Lisa Yue, Lighting Research Center, Rensselaer Polytechnic Institute, 2010. **Articles in Refereed Journals** RP Leslie, LC Radetsky, AM Smith, “Conceptual Design Metrics for Daylighting.” *Lighting Research and Technology,* 44:277-290, 2012. (Winner of the Society of Light and Lighting Leon Gaster Award) M.G. Figueiro, J.A. Brons, B. Plitnick, B. Donlan, R.P. Leslie, M.S. Rea, “Measuring Circadian Light and Its Impact on Adolescents.” *Lighting Research and Technology*, 0:1-15, 2010. **Other Publications**

D. Marcus, K. Sweater, N. Narendran, J.P. Freyssinier, J. Taylor, R. Leslie, "The Lighting Field Guide: Upgrading to LEDs for Multi-Family Housing," ASSIST, Rensselaer Polytechnic Institute, 2013.

Research Proposals Approved and Funded

Total Funded Research (with R. Leslie as Principal or Technical Investigator or Project Director): $37,670,000

BPA/E3T- LED Mogul Based Lighting Research and Controls Research. $250,632. 2014. Bonneville Power Administration through Washington State University. (Principal Investigator).

Energy Efficient Market Acceleration Program. $91,553, 2014. New York Power Authority through the Syracuse Center of Excellence. (Principal Investigator).

RPI Approach Lighting Project. $7500. 2014-2015. Novus Engineering. (Co-principal investigator).

Outdoor Lighting Clearinghouse. $50,000. 2014-2020. NYSERDA. (Principal Investigator).

Energy Efficient Lighting and Controls in Common Areas of Multifamily Buildings. $114,835. 2014-2015. NYSERDA through Taitem Engineering. (Principal Investigator).

Optimizing Solid-State Lighting and Controls in New Low-Rise Affordable Housing. $20,000. 2014-2015. NYSERDA through Taitem Engineering. (Principal Investigator).

Technical Support for US DOE Rulemaking. $30,000. 2014-15. Navigant Consulting for US Department of Energy. (Co-principal Investigator).

Accelerating the Commercialization of Solid-State Lighting in Homes. $359,026. 2014-2016. NYSERDA. (Principal Investigator).

Partnership Agreement. $120,000. 2014-2015. NYSERDA. (Principal Investigator).

Energy Efficient Market Acceleration Program. $17,000, 2013. New York Power Authority through the Syracuse Center of Excellence. (Principal Investigator).

Energy-Efficient Lighting Training for Building and Energy Practitioners in NYS. $443,884. 2013-15. NYSERDA (Co-principal Investigator).

Workforce Mobilization for Installing Advanced Lighting in Homes. $220,297. 2013-14. NYSERDA. (Co-principal Investigator).

Assistance to the NYSERDA Commercial Lighting Business Partner Program. $219,000, 2013-15. ICF, Inc., (Co-principal Investigator).

Partnership Agreement. $120,000. 2013-2014. NYSERDA. (Principal Investigator).

National Lighting Product Information Program. $100,000. 2013-14. NYSERDA and Connecticut Clean Energy Fund. (Principal Investigator).

Daylight and Health Study. $125,000. 2013-14. US General Services Administration. (Co principal Investigator).

Commercial Lighting Program. $315,000, 2008-12. NYSERDA. (Co-principal Investigator).

NY Police Academy Construction Lighting Demonstration and Evaluation. $43,500, 2012-13. NYC Department of Construction through Horizon Engineering and NYSERDA through ClearVu. (Co-principal Investigator).

Siena College Lighting Evaluation. $100,000, 2012-14. Engineered Solutions. (Co-principal Investigator).

Lighting Design Services for Saratoga Technology + Energy Park. $7500. 2011-2014. (Co-principal Investigator).

Site Lighting Master Plan. $19,500. 2012. SUNY Plattsburgh. (Co-principal Investigator).

Solid State Lighting Patterns for Multi-Family Housing. $50,000. 2012-2013. NYSERDA. (Co-principal Investigator).

National Lighting Product Information Program. $100,000. 2012-13. NYSERDA and Connecticut Clean Energy Fund. (Principal Investigator).

Technical Support for US DOE Rulemaking., $100,350. 2012-13. Navigant Consulting for US Department of Energy. (Co-principal Investigator).

Daylighting Design and Analysis for Stormville National Reserve. $55,000. 2012. BCK Architects. (Co-principal Investigator).

Lighting Design and Evaluation for Price Chopper Prototype Store. $35,000. 2012-2013. Golub Corporation. (Co-principal Investigator).

The Light Scoop Guide: And Advanced Daylight Strategy Pattern. $15,000. 2012. Welch Allyn. (Co-principal Investigator).

Partnership Agreement. $120,000. 2011-2012. New York State Energy Research and Development Authority. (Principal Investigator).

Lighting E-Patterns for Homes. $265,000. 2012-2014. NYSERDA. (Principal Investigator).

Hebrew Home for the Aged. $12,250. 2010-2011. (Co-Principal Investigator).

Lighting Design for the Bramley Palm Residence. $23,500. 2010-2011. (Co-Principal Investigator).

Energy Star Program Technical Support. $315,000. 2008-2012. ICF International/EPA. (Principal Investigator).

South Asia Regional Initiative for Energy. $299,855. 2009-2010. PA Consulting/U.S. Agency for International Development. (Co-principal Investigator).

A New Building Infrastructure System for Reconfigurable Interiors Using Solid State Lighting. $294,942. 2009-2011. California Energy Commission. (Co-principal Investigator).

National Lightng Product Information Program. $50,000. 2009-2010. Centre for Energy Advancement through Technological Innovation. (Principal Investigator).

National Lighting Product Information Program. $250,000. 2009-10. New York State Energy Research and Development Authority. (Co-principal Investigator).

Boston Architectural College Lighting Design. $33,500. 2009. Adaptive Environments, Inc. (Co-principal Investigator).

CEC Partnership. $60,000. 2009-2010. California Energy Commission. (Co-principal investigator).

Technical Support Related to the Testing of Energy Using Equipment. $492,076. 2009-2013. Natural Resources Canada. (Principal Investigator).

Facilitating Entrepreneurship in Lighting. $29394. 2009-2015. National Collegiate Inventors and Innovators Alliance. (Principal Investigator).

Research Interests

My research interests started with passive solar energy, energy conservation, daylighting, fire and building codes, dynamic building envelopes, and human response to daylighting and luminous variability. I use a combination of teaching, research, design, and market evaluation in my approach. I serve as the architect on many multi-disciplinary research projects, ensuring the results are practical for real buildings, integrating the disparate parameters associated with lighting, and addressing building systems integration issues.

During the last twenty five years, I have focused my work on lighting. In particular, I work in lighting product testing, overcoming barriers to the use of energy-efficient lighting, residential lighting, outdoor lighting, and daylighting. I develop and test "lighting patterns," or model lighting designs applicable to common building types and assess ways to most effectively communicate these patterns to those who install lighting. A fundamental premise of patterns is that they are objectively evaluated, so lighting design and performance evaluation, are integral to my work. I am interested in both "specific patterns," evaluated case studies using an actual building typical of many other buildings and "generic patterns," designs for generic, common buildings that are then adapted to specific building projects.

I assess the process of lighting decision-making, including electric utility conservation programs, demand-side management efforts, and market transformation activities. In response, I develop research and educational programs all designed to change lighting practice so that it is more energy-efficient and responsive to human needs.

Editorship of Journals, Reviews of Manuscripts, Books and Research Proposals

Reviewer of all LRC DELTA and NLPIP publications, 1990-present.

Reviewer, *Lighting Research & Technology*, 2014

Reviewer, *Journal of Green Building*, 2014

Reviewer, *Lighting Research & Technology*, 2013

Reviewer, *Renewable Energy Journal*, 2013

Reviewer, *Lighting Research & Technology*, 2012

Proposal reviewer for Technology Foundation STW, 2012

	Reviewer, *Lighting Research & Technology*, 2011
Ivan Markov	**Self-Published Work at RPI** 2014 Markov, I., "Structures 1", RPI, School of Architecture, Fall 2014. Markov, I., "Structures 2", RPI, School of Architecture, Fall 2014. Markov, I., "Structural Morphology", RPI, School of Architecture, Spring 2013 Markov, I., "Conceptual Structural Systems", RPI, Department of Civil and Environmental Engineering, Spring 2013. Markov, I., "Structures 1", RPI, School of Architecture, Fall 2013. Markov, I., "Structures 2", RPI, School of Architecture, Fall 2013. 2012 Markov, I., "Structural Morphology", RPI, School of Architecture, Spring 2012. Markov, I., "Conceptual Structural Systems", RPI, Department of Civil and Environmental Engineering, Spring 2012. Markov, I., "Structures 1", RPI, School of Architecture, Fall 2012. Markov, I., "Structures 2", RPI, School of Architecture, Fall 2012. 2011 Markov, I., "Structural Morphology", RPI, School of Architecture, Spring 2011. Markov, I., "Structures 1", RPI, School of Architecture, Fall 2011. Markov, I., "Structures 2", RPI, School of Architecture, Fall 2011. 2010 Markov, I., "Structural Morphology", RPI, School of Architecture, Spring 2010. Stein M, I. Markov, "The Bridge Competition", RPI, School of Architecture, Spring 2010. Markov, I., "Structures 1", RPI, School of Architecture, Fall 2010. Markov, I., "Structures 2", RPI, School of Architecture, Fall 2010. **Publications** Markov, I., "Conceptual Structures – Hands On, Minds On" , book contract, J.Ross Publishing. 2015. **Refereed Journal Articles and Refereed Conference Papers** Markov,I., C. Constantinou,: "Structural Performance Estimate for Curvilinear Surfaces in Conceptual Design", Proceedings of the IASS-SLTE 2014 Symposium "Shells, Membranes and Spatial Structures: Footprints" 15 to 19 September 2014, Brasilia, Brazil. Paul Nicholas, Martin Tamke, Mette Thomsen, Hauke Jungjohann, Ivan Markov: "Graded Territories:Towards the Design, Specification and Simulation of Materially Graded Bending Active Structures, ACADIA 2012, San Francisco, October 2012. Markov,I., C. Constantinou,:"Structural Performance Estimates for Zero-Curvature and Complex Forms" Panel, Advances in Architectural Geometry Conferences 2012, Paris,

September 2012.

Markov, I., ”Hands-On Approach to Cross-Disciplinary Teaching Challenge”, 2012 Education, Math and Engineering Technology, Hawaii University International Conferences, August 2012.

Makov, I., “Performance Based Integrated Structural Physical Models”, Building Technology Educators’ Society Conference, Toronto, August 4-7, 2011.

Constantinou C., J. Mendez, I.Markov, and M. Stein, “Rapid Response Low Cost Housing System – Haiti Case”, 4th Latin-American Symposium on Tensile Structures, Montevideo, Uruguay, 6-8 April, 2011.

Markov, I., “Concept of Tuning and Constructing Mass-Customized Generative Surfaces”, International Journal of Space Structures, Issue 2, Vol. 25, 2010.

Research Grants – Proposals Funded
“Research in Design of Spatial Adaptable Rapidly Erectable Building Systems” Joint proposal Rensselaer Polytechnic Institute-The Royal Danish Academy of Fine Arts - Princeton University - Semyuang University S. Korea. Funded DKR 286,276 for period 3/15-12/31/15.

Research Grants – Proposals Submitted and Not Funded
“An Integrated Approach to Structure, Form and Enclosure for a more Sustainable Architecture“ PI- Markov I., CO-PI Letchford C., CO-PI Mistur M., CO-PI Symans M. AISC Grant Proposal for $60,000 (submitted 3/2012 not funded)

Enhancing Creativity and Problem Solving in Structural Design Analysis and Education”, PI- Cutler B., CO-PI Markov I., NSF Grant Proposal for $500.000 (submitted 12/2010, not funded).

Research Interest
My current research is focused in the following areas:
Teaching Pedagogy **–** Real Time Visualization of Structural Performance **-** integrated teaching method
Structural Morphology **–** Performance of Form/Topology
Structural Fragility **–** Vulnerability of Buildings to Spatial Requirements and Extreme Events
Masonry Assemblies **–** Performance of Masonry Assemblies

Undergraduate Research Projects
Yifeng Zhao, Computer Science “‘Stochastic Form Finding for Free-Forms’’, URP, RPI Spring 2015.

Bolong Liang, Computer Science ‘‘Stochastic Form Finding for Free-Forms’’, URP, RPI, Spring 2013, Fall 2013 - ongoing.

Mark Radocy, Computer Science ‘‘3D-Truss’’, URP RPI Spring 2013 - ongoing.

Tao Jia, School of Architecture ‘‘Test Data Analysis’’, URP RPI, Spring 2013.

Patricia Di Pietro, Computer Science “Visual Truss”, URP Spring/Fall 2012.

Nick Iaconis, Computer Science “Graphical Interactive Analyses for Free-Forms”, URP Fall 2012, Spring 2012, Fall 2012.

Kely Meenaghan, CEE “ABAQUS-Simulation”, URP Fall 2011.

Joseph Cloutier, Games Simulation Arts and Sci, “Truss Simulator”, URP RPI Spring 2011.

Timothy Kretschmer, Department of Computer Science,” Graphical Interactive Analyses Platform Change”, URP RPI Spring 2011.

Winnie Chau, School of Architecture, “Universal Testing Machine”, URP Spring 2011.

Jessey Embley, School of Architecture: “Second Life”, URP RPI Fall 2011.

Christos Constatntinou, School of Architecture and Joshua Mendez, Department of Civil and Env. Engineering, : “Rapid Response Low Cost Housing System – Haiti Case”, URP RPI Spring 2010.

Yishu Liu, Department of Electrical Engineering:” RISA Interface”, URP Spring 2011.

Jimmy Lafontaine and Michael Li, Department of Electrical Engineering, ;” Structural Analyses Interface”, URP RPI Spring 2000.

John Bungert, Department of Electrical Engineering: “Graphical Interactive Analyses Platform Change,” URP RPI Fall 2008.

Editorship of Journals, Reviews of Manuscripts, Books Research Proposals the Jurying of Exhibitions

Journal paper review: Bai, Jong-Wha; Hueste, Mary; Gardoni, Paolo: “Seismic Vulnerability Assessment of Tilt-Up Concrete Structures”, Structure and Infrastructure Engineering, 2013.

Conference paper review: “Innovative Structures and the Design-Build Model of Teaching” ACSA 100th Annual Meeting, Boston, March 2012

Conference paper review: ‘‘Repairing a Mis-Diffusion: Purpose and Perils of Load Path Diagrams” ACSA 100th Annual Meeting, Boston, March 2012

Conference paper review: “TOYS (Teaching by Observation Yield Strength)” ACSA 100th Annual Meeting, Boston, March 2012.

Journal paper review: Won,Jong Hwa; Kim, Moon Kyum; Cho, Seok Ho; Park, Moonhyeong: “Integrated assessment for route selection of river crossing pipeline using structural and hydraulic approach”, Structure and Infrastructure Engineering, 2011.

Journal paper review: Ozmen, Cengiz, "An assessment procedure for the structural effects of architectural modifications on small-scale historical masonry buildings: a case study in Cappadocia" Structure and Infrastructure Engineering, 2010.

Professional and Public Lectures

Presented an invited lecture at Harvard University’s Graduate School of Design, and another at Princeton University’s Civil & Environmental Engineering Dept. Both in April 2015.

University of Calgary, Faculty of Environmental Design Alberta, Canada 2015

	Markov, I., "Hands-On Approach to Cross-Disciplinary Teaching Challenge", 2012 Education, Math and Engineering Technology, Hawaii University, International Conferences, August 2012, Keynote Speaker. American University of Sharjah, College of Architecture and Design, UAE, 2013
Mark Mistur	**Creative Achievements** Architectural design and professional services: **Challenger Learning Center** at Museum of Science and Technology, Schenectady, NY $1.6m **Research** DESIGNING the DESIGN PEDAGOGY *Optimizing the integration of BIM in effective Design Teaching,* 2013- Educator in Residence: IDEA Studio, Autodesk, San Francisco, 12 weeks, 2013, $27,000 **Scholarship** **Books:** Collection Editor; *Performance-Based Design* (a collection of 12 books) – Momentum Press, in progress Author; *Performance-Based Design: The Broad View Vol. 1 of collection. Momentum Press, in progress* Author; with Johannes Goebel, *The Architecture of EMPAC: The Tangible and the Tantalizing,* 2011, ORO **Chapters:** *Eco-logics: A New Paradigm for the Design of Urban Environments,* Architecture Anthology 1: Sustainable Design: Athens Institute for Education and Research, 2015 *Integrated Praxis: Building an Innovation Ecology,* **Practices 7/8,** A Journal of the Center for t Study of Practice, University of Cincinnati - 2006 **Papers:** *Bridging to the Bicentenary: Collaboratively Educating Engineers and Architects, IABSE Geneva, 2015 with Dr. Christopher Letchford* *Design Leadership: Three Pedagogical Pairings for Performative Practice,* (ACSA) 2011 Teachers Seminar (June 2011) Proceeding Publication - 2011 *Facilitating Collaboration of Engineering and Architecture Students Via An International Travel-Study Workshop,* American Society of Engineering Educators (ASEE) proceedings 2010, with Michael Symans, Bruce Danziger
Brendan Moran	**Publications** Essay: "Architecture in North America since 1960," in *A Critical History of Global Architecture*, eds. Elie Haddad & David Rifkin (Ashgate, 2014). Essay: "Toward a 'Nation of Universities': Architecture and Planning Education at MIT circa the 1940s," *A Second Modernism: MIT, Architecture and the "Techno-Social' Moment*, ed. Arindam Dutta (MIT Press, 2013). Essay: "Research" (Lexicon entry), in *Architecture School: Three Centuries of Architecture Education in North America*, ed. Joan Ockman (MIT Press, 2012).

	Essay: "Modernity w/out Modernity," *Proceedings of the Annual Meeting of the ACSA* (Washington, DC: Association of Collegiate Schools of Architecture, 2011). Interview: "What is Architectural Research?," *Advanced Architectural Research, 2010-11,* GSAPP, Columbia University (2012) **Papers** Conference Paper: "Environmental Design: Not just a Professional Matter," ASEH Annual Conference, Toronto; Spring 2013. Conference Paper: "How Big is Not Big Enough?," ACSA 101st Annual Meeting (Miami Beach, Canada, March 2011); Orders of Magnitude session, Jordan Geiger. Conference Paper: "Modernity w/out Modernity," ACSA 99th Annual Meeting (Montreal, Canada, March 2011); Open session, Robert Cowherd. Lecture: "The Research University as an Environmental Factor," Oberlin College, Department of Art (Environmentalism and Architecture Lecture Series); Spring 2010. Conference Paper: "Instructive Environments?: Revisiting Tafuri's 'Historical Spaces,'" *Spaces of History/History of Spaces* conference, University of California Berkeley, College of Environmental Design; April 2010.
N. Narendran	**Books and Monographs** ***ASSIST recommends* Monographs Reviewed by ASSIST Government/Industry Advisory Group** (Acuity Brands Lighting, Amerlux Global Lighting Solutions, Bridgelux, China Solid State Lighting Alliance, Cree, Everlight, Federal Aviation Administration, GE Lighting Solutions, Industrial Technology Research Institute, Intematix Corp., LG Electronics, LG Innotek, Lighting Science Group, Lite-On, NeoPac Lighting, New York State Research and Development Authority, OSRAM Sylvania/OSRAM Opto Semiconductors, Philips Lighting, POSCO LED, Seoul Semiconductor, Sharp Laboratories of America, U.S. Environmental Protection Agency, and WAC Lighting) *ASSIST recommends* is a sponsored program providing recommendations for testing and evaluating LEDs and other lighting technologies. The recommendations are based on original system performance research and vision science conducted at the LRC. These documents are available for free download from the ASSIST website. More than 6,000 webpage views and document downloads have occurred between October 2009 to August 2010. In these publications, the authors are listed in alphabetical order. Bullough, J.D., K. Sweater Hickcox, and N. Narendran. 2011. *ASSIST recommends…A method for estimating discomfort glare from exterior lighting systems.* Vol. 9, Iss. 1. Troy, N.Y.: Lighting Research Center. **Articles in Refereed Journals** Tan, J. and N. Narendran. An approach to reduce AC LED flicker. Journal of Light and Visual Environment 38, advance publication online August 26, 2014; doi: IEIJ130000531. Jayawardena, A., Y. Liu, and N. Narendran. 2013. *Analysis of three different junction temperature estimations methods for AC LEDs.* Solid-State Electronics 86: 11–16; doi: 10.1016/j.sse.2013.04.001 Sweater Hickcox, K., N. Narendran, J.D. Bullough, and J.P. Freyssinier. 2013. *Effect of different coloured luminous surrounds on LED discomfort glare perception*. Lighting Research and Technology 45(4): 464–475; doi:10.1177/1477153512474450

Chen, K., and N. Narendran. 2013. *Estimating the average junction temperature of AlGaInP LED arrays by spectral analysis*. Microelectronics Reliability 53: 701–705; doi: 10.1016/j.microrel.2013.01.003

Bullough J.D., K. Sweater Hickcox, T.R. Klein, A. Lok, and N. Narendran. 2012. *Detection and acceptability of stroboscopic effects from flicker.* Lighting Research and Technology 44(4): 477–483.

Han, L., and N. Narendran. 2011. *An accelerated test method for predicting the useful life of an LED driver. IEEE Transactions on Power Electronics* 26(8): 2249–2257.

Bullough J.D., K. Sweater Hickcox, T.R. Klein, and N. Narendran. 2011. Effects of flicker characteristics from solid-state lighting on detection, acceptability and comfort. *Lighting Research and Technology* 43(3): 337–348.

Zhu, Y., and N. Narendran. 2010. Investigation of remote-phosphor white light-emitting diodes with multi-phosphor layers. *Japanese Journal of Applied Physics* 49: 10023.

Articles in Non-Refereed Journals and Proceedings

Radetsky, L.C., N.P. Skinner, N. Narendran, and J.D. Bullough. 2014. Can the intensity of LED-based runway guard lights be reduced? Proceedings of the 2014 FAA Worldwide Airport Technology Transfer Conference, Galloway, N.J., August 4-8, 2014.

Zhu, Y., N. Narendran, J. Tan, and X. Mou. 2014. An imaging-based photometric and colorimetric measurement method for characterizing OLED panels for lighting applications. Proceedings of SPIE 9190: 91900E.

Perera, I.U., and N. Narendran. 2014. Understanding heat dissipation of a remote phosphor layer in an LED system. ITHERM 2014: The 14th IEEE Intersociety Conference on Thermal and Thermomechanical Phenomena in Electronic Systems, Lake Buena Vista, FL, May 27-30, 2014, 186–192.

Perera, I.U., and N. Narendran. 2014. Mathematical model to analyze phosphor layer heat transfer of an LED system.

Mou, X., N. Narendran, Y. Zhu, and I.U. Perera. 2014. Optical and thermal performance of a remote phosphor plate. Proceedings of SPIE 9190: 91900Q.

Narendran, N. and J.P. Freyssinier. 2014. How is the operational failure of LED fixtures identified? Proceedings of the 2014 FAA Worldwide Airport Technology Transfer Conference, Galloway, N.J., August 4-8, 2014.

Bullough, J.D., J. Tan, N. Narendran, and J.P. Freyssinier. 2014. Understanding flicker in airfield lighting applications. Proceedings of the 2014 FAA Worldwide Airport Technology Transfer Conference, Galloway, N.J., August 4-8, 2014.

Tan, J., and N. Narendran. 2013. A driving scheme to reduce AC LED flicker. Proceedings of SPIE 8835: 88350O

Jayawardena, A., D. Marcus, X. Prugue, and N. Narendran. 2013. Long-term lumen depreciation behavior and failure modes of multi-die array LEDs. Proceedings of SPIE 8835: 883510.

Perera, I.U., N. Narendran, and Y. Liu. 2013. Accurate measurement of LED lens surface temperature. Proceedings of SPIE 8835: 883506.

Perera, I.U., and N. Narendran. 2013. Thermal management of the remote phosphor layer in LED systems. Proceedings of SPIE 8835: 883504

Sweater Hickcox, K, N. Narendran, J.D. Bullough, J.P. Freyssinier. 2012. Effect of different colored background lighting on LED discomfort glare perception. Twelfth International Conference on Solid State Lighting, Proceedings of SPIE 8484: 84840O.

Narendran, N. 2012. Updating a legacy: Trading up Edison's light bulb and electrical infrastructure. Light Sources 2012: Proceedings of the 13th International Symposium on the Science and Technology of Lighting, June 24-29, 2012, Troy, New York, pp. 3–7. Sheffield, UK: Foundation for the Advancement of the Science and Technology of Light Sources.

Narendran, N. 2011. Is solid-state lighting ready for the incandescent lamp phase-out? *Eleventh International Conference on Solid State Lighting, August 21-25, 2011, San Diego, Proceedings of SPIE* 8123:812302.

Jayawardena, A., Y. Liu, and N. Narendran. 2011. Methods for estimating junction temperature of AC LEDs. *Eleventh International Conference on Solid State Lighting, August 21-25, 2011, San Diego, Proceedings of SPIE* 8123:81230I.

Zhu, Y., P. Dutta, and N. Narendran. 2010. Post-synthesis annealing effects on the $SrGa_2Se_4:Eu^{2+}$ phosphors with peak emission wavelength in the green gap. *Tenth International Conference on Solid State Lighting, August 1-5, 2010, San Diego, Proceedings of SPIE* 7784: 77840P.

Narendran, N., J.P. Freyssinier, J. Taylor, T. Dong, and R. Capó. 2010. Application efficacy for comparing energy demand in lighting applications. *Tenth International Conference on Solid State Lighting, August 1-5, 2010, San Diego, Proceedings of SPIE* 7784: 77840L.

Liu, Y., A. Jayawardena, T.R. Klein, and N. Narendran. 2010. Estimating the junction temperature of AC LEDs. *Tenth International Conference on Solid State Lighting, August 1-5, 2010, San Diego, Proceedings of SPIE* 7784: 778409.

Major Projects and Funding Sources

California Energy Commission, 2005 to present **T**he State of California has some of the strictest building energy standards in the world. Through the California Energy Commission's Public Interest Energy Research Program (PIER), Dr. Narendran has served as principal investigator of several projects to design, build and evaluate prototype LED lighting systems for use in California residential and commercial buildings. **Total funding to date: Approximately $775,000**

Federal Aviation Administration, 2005 to present The Federal Aviation Administration (FAA) approached the Lighting Research Center in 2005 for needed research to update U.S. commercial airfields and airfield lighting standards to implement energy-saving LED lighting. Dr. Narendran has served as principal investigator on projects exploring LED aviation signal brightness, LED-based taxiway and runway lighting, white light chromaticity boundaries, and other research related to the human factors study of LED lighting in an aviation context. **Total funding to date: Approximately $4,300,000**

New York State Energy Research and Development Authority, 2003 to present The New York State Energy Research and Development Authority (NYSERDA) was one of the original funding organizations establishing the Lighting Research Center in 1988. Since 2003, Dr. Narendran has served as principal investigator of NYSERDA-sponsored LED lighting projects aimed to save energy, money and promote economic opportunity for lighting-related manufacturers in New York State. **Total funding to date: Approximately $1,250,000**

PA Consulting, U.S. Agency for International Development (USAID)/Sri Lanka Sustainable Energy Authority (SLSEA), 2008 to present In 2009, USAID and SLSEA established the South Asia Regional Centre for Lighting in Sri Lanka to advance sustainable lighting and make it affordable in South Asia to improve the well-being of the citizens and the countries within the region. The Lighting Research Center

serves as the RCL's primary knowledge partner. As principal investigator for this collaboration, Dr. Narendran provides technical knowledge, training, guidance, and project collaboration. **Total funding to date: Approximately $552,761.**

Patents

24 total issued patents of which 20 are RPI's. Several other pending patents.

RP Matter	Client Reference	Serial No.	Patent No.	Title	Country	Status	Filing date
RPI-134AU	RPI 858	2005240186	2005240186	HIGH EFFICIENCY LIGHT SOURCE USING SOLID-STATE EMITTER AND DOWN-CONVERSION MATERIAL	AUSTRALIA	ISSUED	5 /5 /2005
RPI-134AU1	858	2010257325	2010257325	HIGH EFFICIENCY LIGHT SOURCE USING SOLID-STATE EMITTER AND DOWN-CONVERSION MATERIAL	AUSTRALIA	ISSUED	5 /5 /2005
RPI-134CA	RPI 858	2,565,339	2,565,339	HIGH EFFICIENCY LIGHT SOURCE USING SOLID-STATE EMITTER AND DOWN-CONVERSION MATERIAL	CANADA	ISSUED	5 /5 /2005
RPI-134CN	RPI 858	200580022283.9	ZL0580022283.9	HIGH EFFICIENCY LIGHT SOURCE USING SOLID-STATE EMITTER AND DOWN-CONVERSION MATERIAL	CHINA	ISSUED	5 /5 /2005
RPI-144CN	1043	200780046853.7	ZL0780046853.7	LIGHTING SYSTEM USING MULTIPLE COLORED LIGHT-EMITTING SOURCES AND DIFFUSER ELEMENT	CHINA	ISSUED	5 /29/2007
RPI-134JP	RPI 858	2007-511606	5301153	HIGH EFFICIENCY LIGHT SOURCE USING SOLID-STATE EMITTER AND DOWN-CONVERSION MATERIAL	JAPAN	ISSUED	5 /5 /2005
RPI-134JP1	996JP1	2011-147334	5301613	HIGH EFFICIENCY LIGHT SOURCE USING SOLID-STATE EMITTER AND DOWN-CONVERSION MATERIAL	JAPAN	ISSUED	5 /5 /2005
RPI-134KR	RPI 858	10-2006-7025619	10-1256919	HIGH EFFICIENCY LIGHT SOURCE USING SOLID-STATE EMITTER AND DOWN-CONVERSION MATERIAL	SOUTH KOREA	ISSUED	5 /5 /2005

	RPI-134KR1	RPI 858	10-2012-7017954	10-1295561	HIGH EFFICIENCY LIGHT SOURCE USING SOLID-STATE EMITTER AND DOWN-CONVERSION MATERIAL	SOUTH KOREA	ISSUED	5 /5 /2005	8 /6 /2013
	RPI-134US	RPI 858	10/583,105	7,819,549	HIGH EFFICIENCY LIGHT SOURCE USING SOLID STATE EMITTER AND DOWN-CONVERSION MATERIAL	UNITED STATES	ISSUED	4 /23/2007	10/26/2010
	RPI-144US	1043	11/642,089	7,837,348	LIGHTING SYSTEM USING MULTIPLE COLORED LIGHT-EMITTING SOURCES AND DIFFUSER ELEMENT	UNITED STATES	ISSUED	12/20/2006	11/23/2010
	RPI-143AU	996	2006262152	2006262152	PACKAGE DESIGN FOR PRODUCING WHITE LIGHT WITH SHORT-WAVELENGTH LEDS AND DOWN-CONVERSION MATERIALS	AUSTRALIA	ISSUED	6 /20/2006	8 /4 /2011
	RPI-143US	996	11/795,171	7,750,359	PACKAGE DESIGN FOR PRODUCING WHITE LIGHT WITH SHORT-WAVELENGTH LEDS AND DOWN-CONVERSION MATERIALS	UNITED STATES	ISSUED	7 /12/2007	7 /6 /2010
	RPI-146US	1059	11/642,154	7,703,942	HIGH-EFFICIENT LIGHT ENGINES USING LIGHT EMITTING DIODES	UNITED STATES	ISSUED	12/20/2006	4 /27/2010
	RPI-145CN	1058	200780042748.6	ZL0780042748.6	HIGH-POWER WHITE LEDS AND MANUFACTURING METHOD THEREOF	CHINA	ISSUED	5 /31/2007	5 /1 /2013
	RPI-145US	1058	11/644,815	7,889,421	HIGH-POWER WHITE LEDS AND MANUFACTURING METHOD THEREOF	UNITED STATES	ISSUED	12/22/2006	2 /15/2011
	RPI-145US1	1058	12/987,312	8,031,393	HIGH-POWER WHITE LEDS AND MANUFACTURING METHOD THEREOF	UNITED STATES	ISSUED	1 /10/2011	10/4 /2011
	RPI-145US2	1058	12/987,315	8,164,825	HIGH-POWER WHITE LEDS AND MANUFACTURING METHOD THEREOF	UNITED STATES	ISSUED	1 /10/2011	4 /24/2012
	RPI-156US	1213	13/376,887	8,292,468	SOLID STATE LIGHT SOURCE LIGHT BULB	UNITED STATES	ISSUED	12/8 /2011	10/23/2012
	RPI-163US	1154	13/581,861	8,646,927	SCATTERED PHOTON EXTRACTION BASED LIGHT FIXTURES	UNITED STATES	ISSUED	11/6 /2012	2/11/2014

Research Grants and Contracts

Active Contracts for 2014/15 with Principal Investigator Status

Funding Agency	Project	Amount
FAA	Lighting and Visual Guidance Research for Airport Applications	$1,573,294
Lawrence Berkeley National Laboratory	US/India Joint Clean Energy Research and Development Center	150,000
NYSERDA	SSL Lighting Design Metrics/Photometry	50,000
NYSERDA	OLED study	75,000
International Bank Reconstruction Dev.	Lighting Africa Product Testing Services	75,253
NYSERDA	OLED Education	199,726
BPA	LED life testing	207,112
ASSIST	SSL Alliance	400,000
LED Institute	Outreach	60,000
Photometry Institute	Outreach	20,000
Total		**$2,810,385**

Total funded research since 2000 (with N. Narendran as Principal Investigator): nearly $15,000,000.

Proposals Funded with PI Status (amount per year)

2013 – Total $2,937,304

FAA $1,043,978

Lawrence Berkeley National Laboratory	$250,000
NYSERDA	$150,000
NYSERDA	$50,000
ICF Inc	$239,000
Vital Vio, LLC	$25,400
International Bank Reconstruction Dev.	$75,253
Cree, Inc	$14,000
ASSIST	$510,000

LED Institute $60,000
Photometry Institute $20,000

2012 – Total $1,769,400

- FAA $510,900
- ASSIST Gift H11014/H11015 $325,000
- NYSERDA $150,000
- LED Lighting Institute $80,000
- NYSERDA $175,000
- Henkel $131,000
- World Bank $98,000
- ITRI $100,00
- California Energy Commission $90,000
- ICF $157,000
- Fire Protection Research $52,500

2011 – Total $1,435, 362

- FAA $475,000
- CEC BERG: New infrastructure $294,000
- ASSIST Gift $319,362
- NYSERDA LED Metric $150,000
- LED Institute $80,000
- World Bank Group $117,000

2010 – Total $1,650,362

- FAA $475,000
- PA Consulting/USAID $125,000
- CEC BERG: New infrastructure $294,000
- ASSIST Gift $319,362
- WAC Lighting $90,000
- NYSERDA LED Metric $150,000
- LED Institute $80,000
- World Bank Group $117,000

Research Interests

1999-Present: Solid-State Lighting

- Failure analysis of high-brightness LEDs
- Development of accelerated life test methods for LEDs
- Non-contact measurement of DC LED junction temperature
- Packaging RCLED-based white light systems
- Phosphor placement studies for white LEDs
- Light distribution optics for LED luminaires
- Photometric characterization of solid-state light sources
- Development of chromaticity tolerance ranges for white LED color binning
- Energy-saving applications with LEDs

	o LED lighting applications: Retail display windows, refrigerated display cases, elevator downlights o Quantum dots for white LEDs o Failure analysis and accelerated test methods for LED drivers o Micro-lenses for LED fixtures o Novel phosphors for white and green LED o Encapsulants for improving the extraction efficiency of LEDs o Thermal management for high power LED systems o New building electrical infrastructure for LED lighting o Junction temperature measurement of AC LEDs **Editorship of Journals, Reviews of Manuscripts, Books and Research Proposals** • *Lighting Research and Technology*, manuscript reviewer, 2010 • *National Academy of Sciences, NRC Solid State Lighting study, 2012* • *ITHERM 2014, manuscript reviewer, 2013*
Ted Ngai	**Conferences** Pratt Network for Emerging Architectural Research Conference March 2011 - Speaker Harvard GSD Sustainable Design Careers Panel. February 2011 - Panelist Yale BIM Symposium: Implications for Architectural Pedagogy - Par t 1 - From Profession to Academia: How Professional Demands/Changes Affect Academic Responsibilities. April 2010 – Speaker **Publications** Immaterial World: Transparency in Architecture. XSmall House: North Cambridge, Massacusetts, by Mark Kristall, Monacelli Press, 2011. Building Envelopes: An integrated Approach. by Jenny Lovell, Princeton Architectural Press, 2010. The New Modern House: Redefining Functionalism. Suburban: XS S, M, L Houses, UNI Architects, by Johnathan Bell & Ellie Stathaki, Laurence King Publishing, 2010. “Ethics + Aesthetics: Digital Membrane for an Ecological Era,” A+U Architecture and Urbanism - New Directions: Sustainability and Technology in New York, Daisuke Hirose, May 2010 SOM Journal 6, AMPS Active Modular Phytoremediation System, 2010 **Exhibitions** Building Futures: Re-Envisioning The Hyde at Rensselaer, 2012 Group exhibition of 14 expansion proposals for the Hyde Collection **Systems Testing Prototype and Protocol** Active Modular Phytoremediation System Full Panel Prototype at Skidmore, Owing & Merrill, responsible for the design, fabrication, system integration including lighting, irrigation and air flow control, and installation. January 2011. Dynamic Solar Facade Testing Prototype at Syracuse University Center of Excellence, responsible for solar t racking, motion control algorithm, and solar orientation calibration. March 2010. Active Modular Phytoremediation System Single Module Prototype at Rensselaer Polytechnic Institute Aerosol Lab, responsible for developing the testing chamber and protocol for testing air cleaning capacity. January 2010.

	Grants and Awards Good Green Design Award, 2010, Active Modular Phytoremediation System.
Michael Oatman	**Residencies / Lectures / Public Presentations** 2015 *Lecture,* "Unsigned," School of Architecture, RPI, Troy, NY 2015 *Visiting Artist/Guest Critic,* Graduate program, University at Albany, Albany, NY 2014 *Lecturer,* New Hampshire Institute of Art, Manchester, NH 2014 *Visiting Artist/Guest Critic,* Graduate program, Maine College of Art, Portland, ME 2014 Live *Interview* with Colin C. Boyd and Tang Museum Director/curator Ian Berry, Arts Center of the Capital Region, Troy, NY 2014 *Lecture* to undergraduate students from the Art Department University at Albany, Arts Center of the Capital Region, Troy, NY 2012 *Discussant,* Street Views 1: Existing Conditions, A conversation with artist/curator Catherine Behar, artist Michael Oatman, artist/curator Emmy Mikelson, and artist John Menick around the 2010 Austrian film Abendland, by Nikolaus Geyrhalter, Maysles Cinema, 343 Lenox Avenue, New York, NY 2012 *Interviewer/Discussant:* Sean Riley, Everyday is Sunday, Arts Center of the Capital Region, Troy, NY 2011 *Guest Critic,* Architecture Department, CEPT University, Ahmedabad, India 2011 *Visiting Artist/Guest Critic,* Interior Architecture RISD, Providence, RI 2011 *Lecturer,* Tricks of the Trade: Re-use of Spaces for Creative Purposes, MCLA Berkshire Cultural Resources Ctr., Art School, Stockbridge, MA 2010 *Visiting Artist,* Sage College of Albany, Albany, NY 2010 *Visiting Artist/Guest Critic,* Glass Department, RISD, Providence, RI **Grants, Honors and Awards** 2013 First Annual Established Artist Award, The Arts Center of the Capital Region, Troy, NY (exhibition opportunity for fall 2014 and 7500.00 prize) **Exhibitions – Solo** 2015 "Unsigned," Gallery 201, School of Architecture, Greene Building, Rensselaer Polytechnic Institute, Troy, NY 2013 "Another Fine Mess", *Thompson Gallery,* Cambridge School Weston, Weston, MA Todd Bartel, curator 2013 "Megafauna and Micromanagement", *MillerYezerski* Gallery, Boston MA **Exhibitions – Two-Person** 2014 "ABECEDARIUS: 26 + 1 works by Colin C. Boyd and Michael Oatman, The Arts Center of the Capital Region, Troy, NY **Group Exhibitions**

2015 "The Ties That Bind: Artists and Archives," University Art Museum, University at Albany, Albany, NY. Corinna Ripps Schaming, curator

2014 "Playing with a Full Deck", Greene Arts, Greene County Council on the Arts, Catskill, NY (Fundraiser and playing card deck designed by artists Curated by artist Kiki Smith)

2014 "Remix: Selections from the International Collage Center", ICC national touring Exhibition, Curated by Pavel Zoubok and Rachel Lawe, Bates College Museum of Art, Lewiston, ME

2013 "American Collage", Gerald Peters Gallery, New York, NY

2013 "Remix: Selections from the International Collage Center", ICC national touring exhibition, Curated by Pavel Zoubok and Rachel Lawe**,** Katonah Museum of Art, Katonah, NY

2013 Ewing Gallery of Art and Architecture, Univ.Tennessee, Knoxville, TN

2013 "The One-Minute Film Festival", Massachusetts Museum of Contemporary Art, North Adams, MA (Curated by Denise Markonish with Jason Simon, Moyra Davey)

2013 "Some Assembly Required", *Art and Culture Program,* Albany International Airport, Albany, NY. Sharon Bates, curator

2012 "Factory Direct: Pittsburgh", *Andy Warhol Museum,* Pittsburgh, PA. Eric Shiner, curator

2012 "Affinity Atlas", inaugural exhibition of the Wellin Museum, Hamilton College, Hamilton, NY (curated by Ian Berrry),

2011 "ReMix: Selections from the International Collage Center", *Samek Gallery,* Bucknell University, Lewisburgh, PA.

2011 "Point/Counterpoint", *Andrews Gallery,* The College of William and Mary, Williamsburg, VA

2011 "LOL (Laugh Out Loud)", *Art and Culture Program,* Albany International Airport, Albany, NY. Sharon Bates, curator

2011 "Launch", *Mayson Gallery,* New York, NY. Ronni Anderson, curator

Upcoming Exhibitions / Projects

One-person Exhibitions

2016/17 Untitled exhibition, The Aldrich, Ridgefield, CT. Richard Klein, curator

2016/17 Untitled multi-venue project with Philadelphia-based independent curator Julie Courtney. Host/research institution, The American Philosophical Society, Philadelphia, PA

2016/17 Untitled exhibition, DeCordova Museum and Sculpture Park, Lincoln, MA, Dina Deitsch,curator

Two-person Exhibitions

2014 Untitled exhibition with Colin Boyd, The Arts Center of the Capital Region, Troy, NY

Group Exhibitions

2015 "Howdy Doody," Collar Works, Troy, NY, Leona Christie, curator

2015 "Print Exchange," Denise St. Onge Gallery, Troy, NY, Denise St. Onge, curator

2015 "Emanation," Museum of American Glass, Wheaton Arts, Millville, NJ (exhibition and residency)

2015 "Affinity Atlas, Part 2", *Tang Teaching Museum,* Skidmore College, Saratoga Springs, NY. Ian Berry, curator

2016 "Living with Duchamp", *Tang Teaching Museum,* Skidmore College, Saratoga Springs, NY. Ian Berry, curator.

Commissioned Works

2014 "The Toronto Desk", jigsaw puzzle/public project in collaboration with Brian Kane for Nuit Blanche 2014, curated by Denise Markonish

2012 "Affinity Atlas", inaugural exhibition of the Ruth and Elmer Wellin Museum, Hamilton College, Hamilton, NY (curated by Ian Berrry

2010 "all utopias fell", a permanent commission for MASSMoCA, Building 5 and the Power Plant

2010 "What Are We Waiting For?", Group Actions by Brian Kane and Michael Oatman, People in Space Project, Shanghai Expo, Shanghai, China

Curatorial / Juror Work

2010 *Co-Instructor, Supervisor and Exhibition Designer,* "Blindfield", an installation between Rensselaer School of Architecture and HASS undergraduate and graduate students and Spanish sound artist Francisco Lopez.

2011 *Curator,* Rensselaer Student Photographers in India, CEPT University, Ahmedabad, India

2011 *Co-curator (with Leah Rico)* of DWELL, the inaugural exhibition for the Contemporary Arts Center, Woodside, Troy, NY

2013/14 Curatorial consultant, "Life's Work: Johhny Carrera and Tom Phillips, Massachusetts Museum of Contemporary Art, North Adams, MA (introduced curator Denise Markonish to the work of British artist Tom Phillips and his life-work: *A Humument.* Visited the artist in London and initiated discussion on exhibiting this 1000 page work in its entirety)

2013 *Co-curator* (with Ken Ragsdale) of "An Armory Show" (an installation /exhibition featuring 51 artists from the Capital Region), Opalka Gallery, Sage College of Albany, Albany, NY

Upcoming Curatorial Projects

2016 Co-curator (with Hank Murta Adams) of "Preserve", Museum of American Glass, Wheaton Arts, Millville, NJ

2018 *Co-curator,* with Denise Markonish, *Devo, MA,* Massachusetts Museum of Contemporary Art, North Adams, MA

Publications

Schaming, Corinna Ripps, "The Ties That Bind: Artists and Archives," University Art Museum, University at Albany, Albany, NY, exhibition booklet, February 2015, 16 pages

"Big + Bold", Albany Institute of History and Art, Winter//Spring 2014, exhibition brochure
"A Pocket Sized Art Collection", Arts Alive, Greene County Council on the Arts, Issue 96, January/February 2014, p. 1 and 14

Cameron, Dan, "2013 Artists of the Mohawk Hudson Region", The Hyde Collection, Glens Falls, NY, exhibition brochure, 16 pages

Markonish, Denise, "The One Minute Film Festival", Massachusetts Museum of Contemporary Art, exhibition brochure, 2013

"Michael Oatman Another Fine Mess", Thompson Gallery News, The Gryphon, Spring 2013, p.10

MASS MoCA, "Solid Sound Field Guide", Wilco's Music and Arts Festival, MASS MoCA, 2013

Berry, Ian, "Affinity Atlas", Ruth and Elmer Wellin Museum of Art, Hamilton College, Hamilton, NY 20 exhibition brochure, 20 pages, 2012

School of Architecture, Rensselaer (promotional brochure featuring 3 articles on Oatman, his students and projects), 30 pages, 2012

Johnson, Ken, "After School Special, University Art Museum, University at Albany, Albany NY, 2011

Publications as Writer and/or Designer/Illustrator

Oatman, Michael and Ragsdale, Ken, "An Armory Show", Opalka Gallery, Sage College, Albany, NY, exhibition catalog, 30 pages

Oatman, Michael, and Bailey Mark, authors, with Edward Hemingway, illustrator, *Tiny Pie,* Running Press/Perseus Books, Philadelphia, PA. Publishing Date: 2012; Taiwanese and Dutch editions 2013

Fallone, Michael, and Bartow, Doug, editors, Oatman, Michael, illustrations for *Slay the Scary Monsters,*id29, Troy, NY, 2010

Oatman, Michael, *Nth,* essay for *Powers of Ten,* an exhibition curated by Torrance Fish, SUNYPotsdam.

Reviews / Articles / Interviews

Brickman, David, "Abecedarius at the Arts Center of the Capital Region," December 22, 2014, blog review at http://dbgetvisual.blogspot.com/2014/12/abecedarius-at-arts-center-of-capital.html

Bjornland, Karen, "Art meets science in Arts Center show: Oatman, Boyd collaborate on

fantasy of dystopian future," Daily Gazette, Schenectady, NY, Thursday, December 11, 2014

Griffin, Amy, "W can stand for working together," December 4, 2014, Albany Times-Union
Jablonski, Mary Kathryn, "Ignore Alien Orders: Michael Oatman Art & Interview," Numero Cinq Magazine, Volume 5, Number 9, September 2014
http://numerocinqmagazine.com/2014/09/07/ignore-alien-orders-michael-oatman-art-interview-mary-kathryn-jablonski/

Powell, David, "The Exquisite Corpse", *Kolaj* magazine, Issue 7, Collage and Collabration, 2014

Putrock, Joe, "Social Scene", *Albany Times Union,* Friday, March 7, 2014, F3

McQuaid, Cate, "Behind cheery chaos is a darker picture", G section, *The Boston Globe,* November 27, 2103, G11

"Ellen Sinopoli Dance Company", Night and Day: Dance, *Metroland,* Vol.36, #47, Nov. 21, 2013

Bjornland, Karen, "Armory Show: '13, Local homage reflects centennial of a legend," *The Gazette,* Thursday, October 3, 2013

Ross, Bonnie J., "A 'Respectacle' of Art, Memory and Perceptions: Michael Oatman, Ken Ragsdale and An Armory Show", *Capital Region Living,* September 2013, pp. 32-33

Biancolli, Amy, "An Armory Show, Then and Now", *Albany Times Union, Preview,* Thursday, September 5, 2013, p.18

An Armory Show, Night and Day: Museums and Galleries, *Metroland,* Vol. 36, #36, Sept. 5, 2013

Blanton, Becky, "Airstream from the Sun, *Airstream Life,* Spring 2013, pp 10-12
Frank, Jody Ackerman, "The Architecture of Immersive Art", *Rensselaer Alumni Magazine,* Spring 2013, pp. 34-39

Zimmerman, Emily Berçir, "Eclipse, Ellipse & Ellipsis: An Interview with Michael Oatman", *Big, Red and Shiny,* Volume 2, #7, April 16, 2013 (online interview)

Faxon, Alicia, "A Monumental Exhibition for Collage", Column: Preview, *Art New England,* Vol.34, Issue 1, p.16

Nania, Jeff, "Playing the Architecture", *Metroland,* Vol.35, No. 13, March 29, 2012, p. 33
Bjornland, Karen, "Something different", *The Daily Gazette,* Thursday, March 22, 2012, Section D-1

Janiero, Michael, "Sound all around", *Albany Times Union,* (March 22, 2012), Preview, p. 12

Stone, Shawn, "Art Beat", *Metroland,* Vol. 35, No.12, March 22, 2012

Goepfert, Bob, "What's old is new again", *The Record,* March 22, 2012
"Architecture and HASS To Premiere "S9(around)OUND" March 24-25", Editors, Inside Rensselaer, Volume 6, Number 5, March 16, 2102

	Bjornland, Karen, “MASS MoCA spacehip takes visitors up, up and away”, The Gazette, October 6, 2011 Kobasa, Stephen Vincent, “Do It Yourself: Michael Oatman”, Art New England, September/October 2001, Volume 32, Issue 5 “Exhibition Showcases 22 Artists from Jasper Johns form Tara Donovan”, Art Daily Sunday, September 19, 2010 (online journal artdaily.org) Waggoner, Shawn, “Beyond Craft: The Stained Glass of Debora Coombs”, *Glass Art,* September/ October 2010. pp. 62-70 **Gallery Representation** 2009-present Ellen Miller Gallery, Boston, MA 2005-2012 MillerBlock Gallery, Boston, MA 1986-present Lenore Gray Gallery, Providence, RI 2004-2006 Ziehersmith Gallery, New York, NY 2007-present Stremmel Gallery, Reno, NV 2011-present Mayson Gallery, New York, NY 2013-present MillerYezerski, Boston, MA **Falling Anvil Studios** Oatman has worked since 2004 with a talented group of architecture students, art students and arts professionals under the title “Falling Anvil Studios”. This frequently changing collective was originally established to handle large projects through the talents of interested students, and has since grown to become an extension of the classroom. Typically, projects are directed to the artist by museums, organizations and private citizens. If Oatman determines that a project is beyond his individual scope, a determination is made as to whether or not the project could benefit from Falling Anvil participation, and, in turn, steps are taken to ensure that interested students also benefit from the experience. Participants so far include: Alan Okey, Erin Cusker, Jenna Beltram, Matthew Fickett, John Edwards, Craig Hoffman, Shefali Sangvhi, Becky Simkins, Alex Prusakov, Charlotte Root, Alana Akacki, Kerstin Kraft, Tara Marandino, Ann Cosgrove, James Wolfe, Tanya Zal, Stephanie Zielaskowski, Jasper Goodrich, Elise Dechard, Jisela Vasquez, Haleigh Schilling, Christopher Zickafoos, Valerie Theodore, Joe Daniele, Joey Fala, Chris Fuller, Michelle Lahneman and many others. Dedicated studio assistants have included: Gates Hinds, Jasper Goodrich, Alana Ackaki, Max Seiler, Tanya Zal, Stephanie Zielaskowski.
Zbigniew Oksiuta	**Project-related Collaboration with Scientific Institutions and Industry** 2011-2012 "We have weightlessness on Earth", Random Positioning Machine Technical University of Lodz, Poland Prof Stanislaw Bielecki Prof Bogdan Kruszynski Institute of Technical Biochemistry and Medical University of Lodz, Poland Department of Pharmaceutical Biotechnology, Poland Prof. Aleksander Chmiel 2001-2012 Wolf-Peter Walter Econtis GmbH, The Netherlands

Foodstuff and Biotechnology, Mettersheim, Germany

Individual Exhibitions
2010 "Your personal Biosphere", Kapelica Gellery, Ljubljana, Slovenia

Group Exhibitions
2010 Mediations Biennale, Poznan, Poland
2010 re-architectura 10, Fundacja Spot, Poznan, Poland
2011 "Your personal Biosphere", Exhibition "Human+. The Future of Our Species", Science Gallery, Dublin, Ireland

Films
2010 "Your Personal Biosphere", Kapelica Gallery, Ljubljana, Slovenia

Lectures
2010
- Center for Biotechnology and Interdisciplinary Studies, Rensselaer Polytechnic Institute, Troy, NY - CASE, Center for Architecture Science and Ecology, NYC - Department of the Arts, Rensselaer Polytechnic Institute, Troy, - Studio for Creative Inquiry, Carnegie Mellon University, Pittsburgh

2011
- Department of the Arts, Rensselaer Polytechnic Institute, Troy,
- Department of the Arts, Rensselaer Polytechnic Institute, Troy,

2012
- Smart Geometry, EMPAC, Troy
- EMAC, Experimental Media and Performing Arts Center, Troy
- EMAC, Experimental Media and Performing Arts Center, Troy
- Faculty of Architecture, Bialystok University of Technology, Bialystok, Poland
- Academy of Art and Design, Wroclaw, Poland
- Liceum Sztuk Plastycznych, Suprasl, Poland

2014
- University of Electro-Communications, Chofugaoka, Chofu, Tokyo

Self-Authored Publications
2011
- "A New Biological Habitat", Interview with Zbigniew Oksiuta, Huffpost Arts & Culkture
- "Architecture as a living object" - an interview with Zbigniew Oksiuta, Archirama.pl

2013
- Zbigniew Oksiuta. Architect. Visionary. Talking about the architecture of the XXI Century, Gazeta Wyborcza, Bialystok, Poland
- "Cells, Bioreactors, Buildings, Biospheres", Zbigniew Oksiuta in “Post-Sustainable: New Directions in Ecological Design”. Edited by Mitch Joachim and Michael Silver, New York 2014

2014
- Zbigniew Oksiuta text: "House as Bioreactor" For the book "Bio-technoologiczny świat. Bio art oraz sztuka technonaukowa w czasach posthumanizmu i transhumanizmu", Editor Piotr Zawojski, Poland
- “Plechy, Spory, Zarodniki” by Zbigniew Oksiuta, Kwartalnik Rzut, Warsaw, Poland
- “Ja komornik” by Zbigniew Oksiuta, text for book Lodz, Poland

	- Habitat Biologiczny (Biological Habitat), Architektura, December 2014, Poland **Work in Progress** Project: "Spatium Gelatum X" In collaboration with Bureau Wolf Peter Walter, Food and Biotechnology, Meddersheim, Germany 2011-2014 Project: "Architecture of 60s" Restoration of "La Bulle six coques", France, Germany, Poland 2006-2014 Project: Frei Otto Restoration and display of tent construction of Frei Otto, Germany, Poland 2005-2014 Architectural Project "House Eugeniusz" General renovation of the one family building. Bialystok/Poland Publication 1: Zbigniew Oksiuta "Breeding the Future" 2010-2014 Publication 2 "There's no Place as Foam" Selected Student Works 2010-2013 Studio Zbigniew Oksiuta Rensselaer Architecture
Stefano Passeri	**Publications – Essays** Forthcoming Stefano Passeri, “Between Extremism and White Noise: Constructing a New Real in Architecture,” in *Proceedings of the 2015 ACSA Fall Conference*. 2015 Stefano Passeri, “Lies Editorial Note,” in Offramp 09, Lies, SCI-Arc. Stefano Passeri and Hernan Diaz Alonso, “Foreword,” in Architectural Design, *The Cooked and the Raw*, John Wiley & Sons, Hernan Diaz Alonso (Ed.), January 2015. 2014 Stefano Passeri and Benjamin Farnsworth,”New Losangelisms Editorial Note,” in Offramp 08, New Losangelisms, SCI-Arc, August 2014. Stefano Passeri and Hernan Diaz Alonso, “Close-up,” in Architectural Design, Future details in Architecture, Joyn Wiley & Sons, Mark Garcia (Ed.), Winter 2014. **Publications Profiling Work**

	2013 "Insitde, Thing," in Graduate Thesis Weekend and Graduation, SCI-Arc magazine, Fall 2013, p.9. "Hybrid & Massive Joints, Nervous Edges," in Onramp, No. 4: Another Fine Mess, SCI-Arc Press, 2013, p.40. Maria Bojovic, "Inside, Thing: Research on How We Perceive Space," in Archinew, 2013. Stefano Passeri: M Arch Thesis, in Super Architects, 2013. "Inside Ting," In *Sucker Punch,* article, 2013. "Stitch Architecture, the In-Between Space," in eVolo, 2012. "Tokyo Onsen & Submerged Forest Visitor Center," in Bartlett School of Architecture Summer Show Catalogue, Bartlett School of Architecture Press, Unit 8 Section, 2010. **Public Speaking** "Between Extremism and White Noise: Constructing a New Real in Architecture," presented at the 2015 ACSA Fall Conference, Fall 2015. "Design of Theory Fellowship Lecture," SCI-Arc Lecture Series, SCI-Arc, Los Angeles, lecture, Fall 2014. "UCLA Jumpstart lecture," UCLA, Los Angeles, Fall 2014. **Exhibitions** "SCI-Arc Gallery Selected Theses," Los Angeles, Project Featured in Exhibition: "Inside, Thing," sinner of the SCI-Arc Gehry Prize for Best Thesis, 2013. "Getty Institute, Pacific Standard Time, Modern Architecture in LA," Los Angeles, Stefano Passeri, assistant curator of Eri Owen Moss Architects contribution, Summer 2012. "Advances in Architectural Geometry," Centre Pompidou, Paris, Project Featured in Exhibition, "Massive Joints: Nervous Edges," SCI-Arc Advanced Studio project, Spring 2012. "Slade Gallery Bartlett Exhibit," Slade School of Art, London. Projects featured in exhibition: "Greenwhich Mirrors," "NYC Blood Bank," and :Tokyo Onsen," UCL Selected Projects Show, Spring 2010. "Cook Robotham Architecture Exhibition," Bournemouth University, UK. Projects Featured in Exhibitions: "Skopje Bridge," "Verbania Theatre," Summer 2010.
Elena Perez-Guembe	**Lectures** 2014 Arkansas University Rome Center, Rome, Italy. *Sensitive Skins.* 2013 Universidad Piloto de Colombia, Bogota, Colombia. *Real Imaginary*. **Residencies and Grants** May - Aug 2014 EKWC Artist In Residence, Awarded grant, 's-Hertogenbosch. The Netherlands. March 2014 Brown Fellowship Travel Grant for a ceramic research in the Netherlands. July 2013 Pratt Institute Visiting Scholar, Ceramics Department. NY, USA. **Individual Presentations** Aug 2014 European Ceramic Workcenter, 's-Hertogenbosch, The Netherlands.

	Group Exhibitions 2012 Rensselaer Polytechnic Institute, Troy, NY. Smart Geometry 2012, Mille-oeuille, a XXI century zoo. 2011 NYC Bring To Light Festival. NY. Locutorium. Instalation. Artist Richard Serra and architects Diller- Scofidio among participants.
Chris Perry	**Published Articles and Conference Papers** 2015 PAJ: A Journal of Art and Performance Cathryn Dwyre and Chris Perry, guest eds., MIT Press "Expanded Fields: Architecture, Landscape, and Performance" Cathryn Dwyre and Chris Perry Visioning Technologies: The Architectures of Sight Graham Cairns, ed., Ashgate "Geofutures: Visioning Architecture in the Anthropocene", book chapter by Chris Perry (forthcoming, 2015) Arpa Journal Janette Kim, ed., Columbia GSAPP "Asymmetric Phase": Architectural Aesthetics and Performance in the Anthropocene", Chris Perry (forthcoming 2015) 2014 Cloud Architecture Carla Leitao, ed., Punctum Books "The Cloud Studio: An Other Architecture," Chris Perry 2013 Phyllis Lambert Annual Conference: Milieu, Environment, Umwelt University of Montreal, School of Architecture "Neo-Picturesque: A Mediated Milieu," Cathryn Dwyre and Chris Perry Bracket Goes Soft: Architecture, Environment, Digital Culture Neeraj Bhatia and Lola Sheppard, ed., Actar "Fast Company: Architecture and the Speed of Technology," Chris Perry Architecture In:Formation Pablo Lorenzo-Eiroa and Aaron Sprecher, ed., Routledge "Architetcure and Mobility," Chris Perry 2012 Architecture Inserted: Louis I. Kahn Visiting Assistant Professorship at the Yale School of Architecture Nina Rappaport, ed., Yale School of Architecture Featured design work, studio design work, and essay "Anticipatory Architecture: CERN 2054," Chris Perry The Digital Turn in Architecture: 1992 - 2012 Mario Carpo, ed., Wiley-Academy "Introduction to *Collective Intelligence*" (reprinted essay), Christopher Hight and Chris Perry 2010 30th Annual ACADIA Conference: Life In:Formation The Cooper Union School of Architecture "Anticipatory Architecture | Extrapolative Design," Chris Perry **Edited or Authored Publications** 2015 PAJ: A Journal of Art and Performance

Cathryn Dwyre and Chris Perry, guest eds., special issue titled Performance and Architecture, MIT Press

ACADIA International Conference Proceedings: Computational Ecologies: Design in the Anthropocene
Chris Perry, co-ed., ACADIA Press

Lectures

2015 ACSA 103rd Annual Meeting
Keynote Event: Mission Statements
Design Research at RSoA Mission Statements Keynote Event - seven "academic leaders from a new generation" selected to present a "mission statement" for architectural education in the twenty-first century, Toronto

2014 Bard College
Department of Art History
Dark Ecology and Geofutures: Architecture in the Anthropocene
Special lecture, Annandale-on-Hudson, New York

2013 The New School
Eugene Lang College
Architecture and Mobility Evening Artist Talk series, New York

2010 Yale University
School of Architecture
Networks + Environments Evening lecture series, New Haven

Conferences

2015 ACADIA International Conference: Computational Ecologies: Design in the Anthropocene
Technical Co-Chair: University of Cincinnati

ACSA 103rd Annual Meeting: The Expanding Periphery and the Migrating Center
Keynote Speaker and Session Chair: University of Toronto, Ryerson University, University of Waterloo

PAJ: Performance and Architecture Co-organizer and presenter, Whitebox Gallery, New York City

2013 Phyllis Lambert Seminar (annual conference): Milieu, Environment, Umwelt
Presenter: University of Montreal, School of Architecture, Montreal

Resiliency and the Built Environment
Presenter: Center for Architecture, Science, and Ecology / Center for Biotechnology and Interdisciplinary Studies, Rensselaer Polytechnic Institute, Troy, New York

Bracket Goes Soft: Architecture, Environment, Digital Culture
Presenter: Studio-X, Columbia University Graduate School of Architecture, Planning, and Preservation, New York City

2012 Architecture and Contemporary Urbanism Now
Presenter: Pratt Institute School of Architecture, Brooklyn

2011 Eco-Redux: Manifesto Series 03 Presenter: The Storefront for Art and Architecture, NYC

Elsewhere Envisioned Presenter: GLOBAL Design / New York University Gallatin School of Individualized Study, New York City

2010 ACADIA 2010 Presenter: The Cooper Union School of Architecture, New York City

Exhibitions

2015 Omi International Arts Center
Dark Ecology Solo exhibition at Omi International Arts Center, Ghent, New York

2014 WT SmartCity Award
Geofutures Selected work of Chris Perry's graduate students in the Geofutures post-professional program at Rensselaer's School of Architecture. Design work featured as part of Milan's Design Week, Milan, Italy

Decad, Berlin
Work in Public Featured work by *servo*, group exhibition, Berlin

2012 Pratt Institute School of Architecture, Brooklyn
Culture Now Selected work of Chris Perry's undergraduate thesis students at Rensselaer's School of Architecture

2011 Design Museum, Barcelona
EcoRedux 2 Commissioned project by pneumastudio, group exhibition curated by Lydia Kallipoliti and Anna Pla Catala, Barcelona
Gallatin Labowitz Gallery, New York University
Elsewhere Envisioned Commissioned project by pneumastudio, group exhibition curated by Peder Anker, Louise Harpman, and Mitchell Joachim, New York

2010 Pratt Manhattan Gallery
Envelopes Commissioned project by *servo*, group exhibition curated by Christopher Hight,
New York

Exhibition Catalogs

2014 Work in Public
Featured project by *servo*, Decad: Press LMP, Berlin

2012 EcoRedux 02: Design Manuals for a Dying Planet
Featured project by pneumastudio, Design Museum, Barcelona

Books

2015 Post-Sustainability: New Directions in Ecological Design
Featured work by pneumastudio, ed. Mitchell Joachim and Mike Silver, Metropolis Books/DAP (forthcoming)

The Atlas of World Housing
Featured work by pneumastudio, DAMDI Publishing Co., Korea

2014 Global Design: Elsewhere Envisioned

Featured work by pneumastudio, ed. Peder Anker, Louise Harpman, Mitchell Joachim, Prestel

2013 Bracket Goes Soft: Architecture, Environment, Digital Culture
Featured work by pneumastudio, ed. Neeraj Bhatia and Lola Sheppard, Actar

2012 Architecture Inserted: The Louis I. Kahn Visiting Assistant Professorship
Nina Rappaport, ed., Yale School of Architecture
Featured interview with and essay by Chris Perry in addition to selected work by pneumastudio, *servo*, and the advanced design studio Perry conducted at the Yale School of Architecture in 2010.

Panel Layout for Competition
Featured work by pneumastudio, DAMDI Publishing Co., Korea
Architectural Theories of the Environment: Posthuman Territory
Featured work by pneumastudio in an introductory essay, ed. Ariane Lourie Harrison, Routledge

2010 The New Mathematics of Architecture
Featured work by *servo*, eds. Mark Burry and Jane Burry, Thames & Hudson

The Architecture of Patterns
Featured design studio work at Cornell University by Chris Perry, eds. Paul Anderson and David Salomon, W.W. Norton & Company

Retrospecta: Yale School of Architecture
Excerpts from an evening lecture by Chris Perry in addition to student work from Perry's advanced design studio conducted in the spring of 2010, ed. Nina Rappaport, Yale School of Architecture

Journals and Magazines

2010 Constructs: Yale Architecture
Interview with Chris Perry, Louis I. Kahn Visiting Assistant Professor, conducted by Nina Rappaport and featuring several projects by *servo*, Spring 2010

Professional Board & Peer Review Committee Involvement

2015 ACADIA International Conference: Computation and Ecological Thought
Technical Co-Chair: University of Cincinnati

ACSA 103rd Annual Meeting: The Expanding Periphery and the Migrating Center
Session Chair: University of Toronto, Ryerson University, University of Waterloo

2014 103rd ACSA Annual Meeting
Member of peer review committee for conference paper submissions

2013 Journal of Architectural Education (JAE)
Member of peer review committee for an issue of JAE entitled Dissipative Architecture: The Informed Nature of Atopia

2012 101st ACSA Annual Meeting
Member of peer review committee for conference paper submissions

2011 100th ACSA Annual Meeting
Member of peer review committee for conference paper submissions

Mark Rea	**Books and Monographs** Rea, M.S. and Figueiro, M.G. 2014. Non-visual effects of colored light. Handbook of Color Psychology, edited by Andrew J Elliot and Mark D. Fairchild. Cambridge University Press. In press. Rea, M. S., 2013. *Value metrics for better lighting.* Bellingham, WA: SPIE Optical Engineering Press. Rea, M.S. and M.G. Figueiro. 2011. What is healthy lighting? Chapter for LEDs for Smart Lighting, published in International *Journal of High Speed Electronics and Systems (IJHSES)*, and Book Series "*Selected Topics in Electronics and Systems*". World Scientific 9 Publishing Company PTE LTD. 20(2):321-342. **Journal Articles in Refereed Journals** Rea, M.S., 2014. Invited. Opinion: 1924 *Lighting Research Technology.* 46(4):244. DOI: 10.1177/1477153514533258. Rea, M.S., J. Bierman. 2014 Comparison of a solid-state luminaire to tungsten-halogen lamps for displaying museum object. *Journal of the American Institute for Conservation.* 53(1)33. DOI: 10.1179/1945233013Y.0000000008. Bullough, J. D., L. C. Radetsky, U. C. Besenecker and M.S. Rea. 2014. Influence of spectral power distribution on scene brightness at different light levels. *Leukos.* 10(1):3-9. Figueiro, M.G. and Rea, M.S. 2014. Office lighting and personal light exposures in two seasons: impact on sleep and mood. *Lighting Research & Technology.* 0:1-13. DOI: 10.1177/1477153514564098. Figueiro, M.G., Plitnick, B.A., and Rea, M.S 2014. Pulsing blue light through closed eyelids: Effects on phase shifting of dim light melatonin onset in older adults living in a home setting *Nature and Science of Sleep* 6:149-156. Figueiro, M.G., Plitnick, B.A., and Rea, M.S. 2014. The effects of chronotype, sleep schedule and light/dark pattern exposures on circadian phase. *Sleep Medicine*. 15(12): 1554-1564. Rea, M.S. and Figueiro, M.G. 2014. Quantifying light-dependent circadian disruption in humans and animal models. *Chronobiology International Special Issue: Shift Work*. 31(10): 1239-1246. Figueiro, M.G., Plitnick, B.A., Lok, A., Jones, G., Higgins, P., Hornick, T., and Rea, M.S. 2014. Tailored lighting intervention improves sleep, depression and agitation in persons with Alzheimer's disease and related dementia living in long-term care facilities. *Clinical Interventions in Aging.* 9:1527-1537. Rea, M.S. and Bierman, A. 2014. Spectral considerations for outdoor lighting: Consequences for sky glow. *Lighting Research and Technology*. 0:1-11. DOI:10.1177/1477153514556127. Rea, M.S., Bullough, J.D. and Brons, J.A. 2014 Spectral considerations for outdoor lighting: Designing for perceived scene brightness. *Lighting Research and Technology*. 0:1-11. DOI:10.1177/1477153514556126. Bullough, J. D., E. T. Donnell, M. S. Rea. 2013. To illuminate or not to illuminate: Roadway lighting as it affects traffic safety at intersections. *Accident Analysis and Prevention* 53(1): 65-77.

Rea, M.S. and J.P. Freyssinier. 2013. White Lighting for residential applications. *Lighting Research and Technology* 45(3):331-344.

Rea, M.S. and J.P. Freyssinier. 2013. White Lighting: A provisional model for predicting perceived tint in "white" illumination. *Color Research & Application.* Article first published online: 9 DEC 2013 | DOI: 10.1002/col.21837.

Rea, M.S, M.G. Figueiro, A.J Bierman, R. Hamner. 2013. Modelling the spectral sensitivity of the human circadian system. *Lighting Research and Technology.* 44(4): 386-396.

Rea, M. S., J.P. Freyssinier. 2013. White lighting. *Color Research & Application. 38(2):82-92;* doi: 10.1002/col.20738.

Freyssinier, J.P. and M.S. Rea. 2013. Class A Color Designation for Light Sources Used in General Illumination. *Journal of Light & Visual Environment*. 37(2&3):10-14.

Rea, M.S., M.G. Figueiro, G. Jones, K. Glander. 2014. Daily activity and light exposure levels for five species of lemurs at the Duke Lemur Center. *American Journal of Physical Anthropology.* 153(1):68-77.

Figueiro, M.G., A. Bierman, M.S. Rea. 2013. A train of blue-light pulses delivered through closed eyelids can suppress melatonin and phase shift the human circadian system. *The Nature and Science of Sleep.* Oct 4:5:133-141.

Rea, M.S. and M.G. Figueiro. 2013. A hypothetical working threshold for acute nocturnal melatonin suppression from "white" light sources used in architectural applications. *Journal of Carcinogenesis & Mutagenesis*. Open Access Journal 4(3) http://dx.doi.org/10.4172/2157-2518.1000150.

Figueiro, M.G., S. Nonaka, M.S. Rea. Daylight exposure has a positive carry-over effect on nighttime performance and subjective sleepiness. *Lighting Research and Technology* (LR&T), 45(4). DOI:10.1177/1477153513494956.

Radetsky, L.C., M.S. Rea, A. Bierman, M.G. Figueiro. 2013. Circadian disruption: Comparing humans to mice. *Chronobiology International.* 30(8):1066-1071.

Rea, M.S. 2013. New Benefit Metrics for More Valuable Lighting. *Journal of Light & Visual Environment. 37(2&3):41-45.*

Rea, M.S., 2013. New benefit metrics for more valuable lighting. *Journal of Light & Visual Environment* 37(2&3): 41-45.

Freyssinier, J.P., M.S. Rea. 2013. Class A color designation for light sources used in general illumination. *Journal of Light & Visual Environment* 37(2&3): 46-50.

Rea, M.S., 2012. The Trotter Paterson Lecture 2012: Whatever happened to visual performance? *Lighting Research Technology*, 44:95-108.

Bullough, J. D., Snyder, J. D., Skinner, N. P., Rea, M.S. 2012. "Development and evaluation of a prototype barricade lighting system." *International Journal for Traffic and Transport Engineering* 2(2): 118-132.

Rea, M.S., M.G. Figueiro, A. Bierman, R. Hamner. 2012 Modeling the spectral sensitivity of the human circadian system. *Lighting Research and Technology*, 41(3):392-395.

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Bullough, J. D., Snyder J. D., N. P. Skinner and M. S. Rea. 2012. Development and evaluation of a prototype barricade lighting system. *International Journal for Traffic and Transport Engineering* 2(2): 118-13.

Figueiro, M.G., Rea, M.S. 2012. Preliminary evidence that light through the eyelids can suppress melatonin and phase shift dim light melatonin onset. *BMC Research Note*, 5:226.

Figueiro, M.G., Hamner, R., Higgins, P.A., Hornick, T., Rea, M.S. 2012. Field Measurements of Light Exposures and Circadian Disruption in Two Populations of Older Adults. *Journal of Alzheimer's Disease*, 31: 711-715.

Figueiro, M.G., Hamner, R., Bierman, A., Rea, M.S. 2012. Comparisons of three practical field devices used to measure personal light exposures and activity levels. *Lighting Research and Technology*. Published online, June 22, 2012.

Figueiro, M.G., Rea, M.S. 2012. The impact of short-wavelength light on cortisol awakening response in sleep-restricted adolescents. *International Journal of Endocrinology*. Volume 2012 (2012), Article ID 301935, 7 pages.

Wood, B., Rea, M.S., Plitnick, B., Figueiro, M.G. 2013. Light level and duration of exposure determine the impact of self-luminous tablets on melatonin suppression. *Applied Ergonomic*, 44(2):237-240.

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Appleman, K., Figueiro, M.G., Rea, M.S. 2013. Controlling light-dark exposure patterns, rather than sleep schedules, determines circadian phase. *Sleep Medicine. 14(5):456-61*.

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Figueiro, M.G., B. Plitnick, M.S. Rea, L. Gras, M.S. Rea. 2011. Lighting and perceptual cues: Effects on gait measures of older adults at high and low risk for falls. *BMC Geriatrics*, 11(49).

Figueiro, M.G., M.S. Rea. 2011. Sustainable Buildings: More than Just Lumens per Watt. Paper presentation at Clean Tech for Sustainable Buildings: From Nano to Urban Scale (CISBAT'11) International Conference Proceedings, Lausanne, Switzerland, September 14-16, 2011.

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Bullough, J. D., X. Zhang, N. P. Skinner and M. S. Rea. 2011. Design and evaluation of effective crosswalk illumination. Accident Reconstruction Journal 21(1): 33-45.

Miller, D., A. Bierman, M.G. Figueiro, E. Schernhammer, M.S. Rea. 2010. Ecological measurements of light exposure, activity, and circadian disruption in real-world environments. *Lighting Research and Technology* 42:271-284.

Rea, M. S., M.G. Figueiro, A. Bierman, J.D. Bullough. 2010. Circadian light. J*ournal of Circadian Rhythms* 8(1): 2.

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Rizzo, P., M.S. Rea, R. White. 2010. Lighting for today's neonatal intensive care unit. *Newborn & Infant Nursing Review* 10(2):107-113.

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Rea, M.S. and J.P. Freyssinier. 2012. The Class A color designation for light sources. *Proceedings of Experiencing Light 2012: International Conference on the Effects of Light on Wellbeing* (Eds. Y.A.W. de Kort, W.A. IJsselsteijn, M. Aarts, A. Haans, D. Lakens, K.C.H.J. Smolders, F. Beute, L. van Rijswijk).

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Abstracts, Letters of Correspondence, Book Reviews, Posters

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Figueiro, M.G., Higgins, P.A., Hornick, T., Epur, A., Rea, M.S. 2012. Field measurements of circadian light exposures, activity levels, and degrees of circadian entrainment in healthy older adults and in persons with Alzheimer's disease. *Abstract presentation at the Alzheimer's Association International Conference*, July 14-19, 2012, Vancouver, BC, Canada.

Figueiro, M.G., Rea, M.S. 2012. Narrowband lights can modulate biomarkers associate with hunger in sleep-deprived individuals. *Abstract presentation at the 21st Congress of the European Sleep Research Society*, September 4-9, 2012, Paris, France.

M. Keller, K. Marvin, C. Steele, M.G. Figueiro, M.S. Rea. 2012. At-sea trial of 24-hour based submarine watchstanding schedules: implications for circadian rhythm management. *Abstract presentation at the 21st Congress of the European Sleep Research Society*, September 4-9, 2012, Paris, France.

Rea, M.S., L.C. Radetsky, J.D. Bullough. 2011. Response to discussion by S. Fotios and P. Bodrogi of "Toward a model of outdoor lighting scene brightness." *Lighting Research and Technology* 43 (1): 27-30.

Figueiro, M.G., M.S. Rea. Exposure to daylight as well as to blue and red lights at night interact to affect nocturnal performance, subjective sleepiness and biomarker production. *Abstract presentation at the Society for Light Treatment and Biological Rhythms*, July 10-13, Montreal, Canada.

Figueiro, M.G., P.A. Higgins, T. Hornick, M.S. Rea. 2011. Field measurements of circadian light exposures, activity levels, melatonin concentrations, and degrees of circadian entrainment in older adults. *Abstract presentation at Gerontological Society of America*, November 18-22, 2011, Boston, MA.

Figueiro, M.G., M.S. Rea. 2012. Preliminary Evidence that Light through the Eyelids Can Suppress Melatonin and Phase Shift Dim Light Melatonin Onset. *Abstract presentation at SLEEP 2012 26th Annual Meeting of the Associated Professional Sleep Societies, LLC*, June 9-13, 2012, Boston, MA.

Rea, M.S., J.A. Brons, M.G. Figueiro. 2012. Response to discussion of C.C.M. Kyba and F. Hölker to "Window Illuminations Should be Expected to Poorly Correlate with Satellite Brightness Measurements." *Chronobiology International* 29(1): 87-90.

Rea, MS, Brons, J.A., Figueiro, M.G. 2011. LAN and breast cancer risk: can we see a forest through the trees?--Response to "Measurements of light at night (LAN) for a sample of female school teachers. *Chronobiol Int.* 2011 Oct;28(8):734-6.

Rea, M.S., M.G. Figueiro. 2010. Daysimeter: Measuring Light and Activity for Assessing Circadian Entrainment in the Field. *Abstract presentation at Society for Prevention Research*, June 1-4, Denver, CO.

Figueiro, M.G., M.S. Rea. 2010. The Roles of Circadian Entrainment and Sleep for Psychosocial Stress. *Abstract presentation at Society for Prevention Research*, June 1-4, Denver, CO.

Rea, M.S., J.D. Bullough, J.A. Brons. 2010. Many facets of light pollution. Letter to the editor. *Physics Today* 63(6): 8-9. June 2010.

Posters

Glander, K.E., Figueiro, M. G., Jones, G.E., Rea, M.S. 2014. Circadian patterns for five species of lemurs at the Duke Lemur Center. *Poster presentation at the 2014 American Academy of Physician Assistants (AAPA), Calgary, Alberta Canada, April 10, 2014.*

Figueiro, M.G., A. Bierman, B.A. Plitnick, M.S. Rea. 2014 Flashing blue light exposure through closed eyelids suppresses melatonin. *Poster presentation at SLEEP 2014 28th Annual Meeting of the Associated Professional Sleep Societies.* Minneapolis, MN, May 31- June 4, 2014.

Figueiro, M.G., B.A. Plitnick, A. Lok, M.S. Rea. Tailored light treatment improves measure of sleep, depression and agitation in person with dementia living in long-term care facilities. *Poster presentation at SLEEP 2014 28th Annual Meeting of the Associated Professional Sleep Societies.* Minneapolis, MN, May 31- June 4, 2014.

Rea, M.S., A. Bierman, G.A. Ward, M.G. Figueiro. Field tests of a model of the human circadian oscillator. *Poster presentation at SLEEP 2014 28th Annual Meeting of the Associated Professional Sleep Societies.* Minneapolis, MN, May 31- June 4, 2014.

Figueiro, M.G., B.A. Plitnick, M.S. Rea. A train of flashing blue light through closed eyelids phase shifts dim light melatonin onset in older adults living in a home setting, *Poster presentation at SRBR 2014 – 14th Biennial Meeting.* Big Sky, MT, June 14-18, 2014.

Figueiro, M.G., Plitnick, B.A., Rea M.S. The Effects of Chronotype, Sleep Schedule and Light/dark Pattern Exposures on Circadian Phase. *Oral poster presentation at Society for Research on Biological Rhythms (SRBR)*, Big Sky, MT, June 14-18, 2014.

Rea, M.S., M.G. Figueiro, G.E. Jones, K.E. Glander. Measuring circadian entrainment in five species of lemurs. *Poster presentation at SRBR 2014 – 14th Biennial Meeting.* Big Sky, MT, June 14-18, 2014.

Figueiro, M.G., A. Bierman, M.S. Rea. A train of blue-light pulses delivered through closed eyelids can suppress melatonin and phase shift the human circadian system. *Poster presentation at Society for Light Treatment and Biological Rhythms 26th Annual Meeting.* Vienna, Austria, June 27-29, 2014.

Rea, M.S. and Figueiro, M.G. Towards a working threshold for acute melatonin uppression. *Oral presentation at Society for Light Treatment and Biological Rhythms (SLTBR),* Vienna, Austria, July 27-29, 2014.

Bullough, J. D. and M. S. Rea. 2014. Applying findings on intelligent warning beacons to rear vehicle lighting for maximizing safety. Societe des Ingenieurs de l'Automobile Vehicle and Infrastructure Safety Improvement in Adverse Conditions and Night Driving Congress

Proceedings (1 p.), Versailles, France, Suresnes, France: Societe des Ingenieurs de l'Automobile. October 14-15, 2014.

Figueiro, M.G. and M.S. Rea. 2013. The impact of self-luminous displays on evening melatonin levels. *Poster presentation at SLEEP 2013 27th Annual Meeting of the Associated Professional Sleep Societies, LLC*, Baltimore, MD, June 1-5, 2013.

Figueiro, M.G. and M.S. Rea. 2013. Spectral opponency in human circadian phototransduction: Implications for lighting practice. *Poster presentation at the International Colour Association (AIC) 2013*, The Sage Gateshead, UK, July 8-12, 2013.

Rea, M.S. and M.G. Figueiro. 2013. Controlling light-dark exposure patterns, rather than sleep schedules, determines circadian phase. *Poster presentation at SLEEP 2013 27th Annual Meeting of the Associated Professional Sleep Societies, LLC*, Baltimore, MD, June 1-5, 2013.

Figueiro, M.G. 2012. Comparisons of three practical field devices used to measure personal light exposures and activity levels. *Poster presentation at SLEEP 2012 26th Annual Meeting of the Associated Professional Sleep Societies, LLC*, June 9-13, 2012, Boston, MA.

Figueiro, M.G., M.S. Rea. 2012. Comparisons of three practical field devices used to measure personal light exposures and activity levels. *Poster presentation at SLEEP 2012 26th Annual Meeting of the Associated Professional Sleep Societies, LLC*, June 9-13, 2012, Boston, MA.

Figueiro, M. G., M.S. Rea. 2012 Short-wavelength light enhances cortisol awakening response in sleep-restricted adolescents. *Poster presentation at Society for Research on Biological Rhythms Research (SRBR)*, May 19-23, 2012, Destin, FL.

Figueiro, M.G., Rea, M.S. 2012 Comparisons of three practical field devices used to measure personal light exposures and activity levels. *Poster presentation at SLEEP 2012 26th Annual Meeting of the Associated Professional Sleep Societies, LLC*, June 9-13, 2012, Boston, MA.

Sahin, L., M.S. Rea, M.G. Figueiro. 2012 The impact of blue and red lights on objective and subjective alertness in the afternoon. *Poster presentation at Society for Research on Biological Rhythms Research (SRBR)*, May 19-23, 2012, Destin, FL.

Radetsky, L.C., A. Bierman, M.S. Rea, M.G. Figueiro. 2012. Linking circadian disruption experienced by night-shift workers to animal models. *Poster presentation at CRCR New Frontiers Symposium 2012: Nanotechnology in Cancer Research and Treatment*, Albany, NY, November 8, 2012.

Rea, M.S., Light Measuring Device for Correcting Circadian Disruption. NIH Genes, Environment and Health Initiative, Exposure Biology Program, 4th Annual Grantee Meeting. Research Triangle Park, NC. April 2011.

Figueiro, M.G., M.S. Rea. New Tools To Measure Light Exposure, Activity, And Circadian Disruption In Older Adults. *Poster presentation at SLEEP 2011 25th Annual Meeting of the Associated Professional Sleep Societies, LLC*, June 11-15, 2011, Minneapolis, Minnesota.

Rea, M.S., M.G. Figueiro. The Impact Of Blue Light On Acute Melatonin Suppression: Irradiance And Duration Relationship. *Poster presentation at SLEEP 2011 25th Annual*

Meeting of the Associated Professional Sleep Societies, LLC, June 11-15, 2011, Minneapolis, Minnesota.

Figueiro, M.G., M.S. Rea. 2010. Both previous sleep and light at night affect the amplitude of cortisol and alpha amylase. *Poster presentation at SLEEP 2010 24th Annual Meeting of the Associated Professional Sleep Societies, LLC*, June 5-9, 2010, San Antonio, Texas.

Sharkey, K., M.A. Carskadon, M.G. Figueiro, Y. Zhu, H. Gordon, M.S. Rea. 2010. The Roles of a Morning Blue-Light Intervention and an Earlier Sleep Schedule in Phase Advancing Dim Light Melatonin Onset (DLMO) of Young Adults. *Poster presentation at SLEEP 2010 24th Annual Meeting of the Associated Professional Sleep Societies, LLC*, June 5-9, 2010, San Antonio, Texas.

Figueiro, M.G., A. Bierman, P.A. Higgins, T. Hornick, M.S. Rea. 2010. The Dimesimeter, a user friendly circadian light meter. *Poster presentation at the 2010MHealth Summit,* Washington DC, November 8-10, 2010.

Appleman, K., M.G. Figueiro, M.S. Rea, A. Bierman. 2010. Measuring, Interpreting, and Fostering Healthy Circadian Rhythms. *Poster presentation at the 2010 MHealth Summit,* Washington DC, November 8-10, 2010.

Other Publications – Reports

Rea, M.S. and Bullough, J.D. 2014. *Automated teller machine lighting: Design Considerations and criteria.* Report submitted to GMR, Inc.

Bullough, J. D. and M. S. Rea. 2013. *Demonstration and evaluation of pedestrian crosswalk bollard lighting.* Report submitted to the City of Aspen. Aspen, CO.

Figueiro, M.G., M.S. Rea, A. Bierman. February 29, 2012. Phase Shifting the Circadian System with a Light Mask. Report submitted to Philips Respironics.

Rea, M.S., Figueiro, M.G., Freyssinier, J.P. June 2012. Literature review of LED systems used for photosynthetic plant lighting in greenhouses. Report submitted to NYSERDA.

Figueiro, M.G., Bierman, A., Plitnick, B., Rea, M.S. December 17, 2012. *Development of a sleep mask for delivery of light at night to synchronize circadian phase with rest-activity patterns – Phase 3*. Report submitted to Philips/Respironics.

Bullough, J. D., J. D. Snyder, N. P. Skinner and M. S. Rea. 2011. *Barricade Lighting System* [report to the Region 2 University Transportation Research Center]. New York, NY: City University of New York.

Rea, M.S. March 2011. *Human factors asse4ssment of modified chevron size and spacing treatments for curves. Task 1 Report (Part 1) Project C-06-36.* Report submitted to The New York State Department of Transportation.

Figueiro, M.G., M.S. Rea, M.W. Keller. March 31, 2011. *Alerting effects of light at different circadian phases in humans – Final Report*. Report submitted to Office of Naval Research (ONR).

Figueiro, M.G., M.S. Rea, B. Stone, C. Turner. July 6, 2011. *The effects of light and caffeine on nighttime alertness: individual differences in response to fatigue countermeasures.* Report submitted to Office of Naval Research (ONR).

Rea, M.S. and J.P. Freyssinier. 2010. *Guide to light and color in retail merchandising.* ASSIST Recommends 8(1):1-16. March 2010.

Rea, M.S. and J.P. Freyssinier. 2010. *Recommendations for specifying color properties of light sources for retail merchandising.* ASSIST Recommends 8(2):1-24. March 2010.

Patents
6 prior to 2010

US Provisional Patent Application serial # 61/300,072 Method And System For Facilitating Adjusting A Circadian Pacemaker Andrew Bierman, Mark Rea and Mariana Figueiro.

Invention Disclosures
October 2012. Circadian phase entrainment by delivery of long-wavelength light through closed eyelids.

August 2014. Luminous roof for NICU incubators for regulating circadian rhythms in infants and for providing high visibility of infant anatomy for healthcare staff.

Research Grants – Proposals Funded
CURRENT - * denotes Co-PI
US General Services Administration; Daylight and Health Study - $250,000*

US General Services Administration; Daylight and Health Study (Indoor Light and Human Health Demonstration Research Project – GSA Headquarters Bldg) - $125,000*

Bonneville Power Administration; Demonstration of outdoor Lighting for Maximizing Perceptions Safety and Security - $62,220

GMR, Inc.; Automated Teller Machine Lighting: Design Considerations and Criteria - $5,000

IIHS; Technical Assistance - $2,500

White Briar Corporation: Light System for Premature Infant Incubators - $49,672

NIH: Warning Beacons for Front Line Service Worker Safety - $2,191,024

Leidos (Science Applications International Corporation); Sleep Deprivation Study Support - $173,346 (Year 2) - Confidential project*

Science Appliactions International Corproation; Lighting Study Research support - $21,800 (Year 2) - Confidential project*

Intelligent Automation Inc.; Circadian Rhythm Monitoring and Regulation Device (CMR) - $45,000*

Respironics; Development of a Sleep Mask for Delivery of Light to Synchronize Circadian Phase with Rest-Activity Patterns - $417,685 (Year 5) – Confidential project*

NYSERDA; Demonstration of an Advanced, Energy-efficient Solid-state Lighting System for Parking Lot Applications (year2) - $150,000

Research Foundation of CUNY; High Visibility Reflective Sign Sheeting Evaluation - $200,000 (Year 3)

Research Foundation of CUNY; Demonstrations of urban outdoor lighting for pedestrian safety and security - $56,695*

	Florida State University; Mitigation - $5,508 NYSERDA; Energy, LEDs, and Enhanced Plant Yield in Controlled Environment Agriculture - $499,239 Year 2) NYSERDA; Educational Seminar - $20,000* NYSERDA; Lighting Technology Greenhouse - $200,000 (Year 8) Research Foundation of CUNY; Nighttime Highway Construction Illumination - $298,665 (Year 4) NIH; Individually Tailored Lighting System to Improve Sleep in Older Adults - $1,177,498 (Year 2)* Office of Naval Research; The Effect of Light on Biomarkers: Implications for diabetes and obesity - $199,736* Office of Naval Research; Measuring Circadian Disruption in the Field - $116,944* Office of Naval Research; Modeling Human Circadian Response to Light for Optimum Performance in the Field - $789,974 (Year 3)* NIA; Methodology Issues in a Tailored Light Treatment for Persons with Dementia - $1,966,689 (Year 4)* **Funded Research Grants – COMPLETED - *denotes Co-PI** **2014-Completed** Science Applications International Corporation; Lighting Study Research support - $21,800 (Year 2) - Confidential project* Research Foundation of CUNY; High Visibility Reflective Sign Sheeting Evaluation - $200,000 (Year 3) NYSERDA; Energy, LEDs, and Enhanced Plant Yield in Controlled Environment Agriculture - $499,239 (Year 2) NYSEDA; Lighting for Dairy Barn Applications - $67,300 (Year 2) City of Aspen; Demonstration and evaluation of pedestrian crosswalk bollard lighting - $23,500 NYSERDA; Lighting Technology Greenhouse - $200,000 (Year 8) Research Foundation of CUNY; Nighttime Highway Construction Illumination - $298,665 (Year 4) Office of Naval Research; The Effect of Light on Biomarkers: Implications for diabetes and obesity - $199,736* NIA; Methodology Issues in a Tailored Light Treatment for Persons with Dementia - $1,966,689 (Year 4)* Margot Marsh; Are We Looking for Activity Patterns in all the Wrong Places? - $20,000 **2013 – COMPLETED - * denotes Co-PI**

	NAS; Analysis of New Highway Lighting Technologies - $75,000 Science Applications International Corporation; Search and Rescue Distress Signal Analysis and Measurement Support - $49,510 - Confidential project* Science Applications International Corporation: Sleep Deprivation Study Support - $52,500 - Confidential project* Science Applications International Corporation; Lighting Study Research support - $14,000 - Confidential project* Respironics; Development of a Sleep Mask for Delivery of Light to Synchronize Circadian Phase with Rest-Activity Patterns - $337,225 – Confidential project* NYSERDA; Demonstration of an Advanced, Energy-efficient Solid-state Lighting System for Parking Lot Applications - $150,000 NYSERDA; Energy, LEDs, and Enhanced Plant Yield in Controlled Environment Agriculture - $499,239 Year 1) NYSEDA; Lighting for Dairy Barn Applications - $49,500 Research Foundation of CUNY; Innovative Roadway Light Source and Dye Combinations to Improve Visibility and Reduce Environmental Impact for Roadway Lighting Applications - $50,000 Research Foundation of CUNY; High Visibility Reflective Sign Sheeting Evaluation - $200,000 (Year 2) Research Foundation of CUNY; Nighttime Highway Construction Illumination - $298,665 (Year3) NIH; Individually Tailored Lighting System to Improve Sleep in Older Adults - $3,526,524 (Year 1)* Office of Naval Research; The Effect of Light on Biomarkers: Implications for diabetes and obesity - $199,736* Office of Naval Research; Modeling Human Circadian Response to Light for Optimum Performance in the Field - $549,975 (Year 2)* NIA; Methodology Issues in a Tailored Light Treatment for Persons with Dementia - $1,019,613 (Year 3)* NYSERDA; Lighting Technology Greenhouse - $200,000 (Year 7) **2012 – COMPLETED - *denotes Co-PI** Jim McClung Lighting Research Foundation; Optimizing Light Source Spectra for Brightness in Outdoor Lighting Applications - $60.000 NI: Issues with use of Airfield LED Light Fixtures - $35,000 Seoul Semiconductor; The Effect of Light Emitting Diodes on Biomarkers - $225,000 (Year 1) Confidential Project

	NYSERDA; Guide for Optimizing the Effectiveness & Efficiency of Roadway Lighting - $15,000 Research Foundation of CUNY; High Visibility Reflective Sign Sheeting Evaluation - $200,000 (Year 1) Research Foundation of CUNY; Nighttime Highway Construction Illumination - $298,665 (Year 2) Research Foundation of CUNY; Using Light to Alter Driver Behavior - $209,863 Office of Naval Research; Modeling Human Circadian Response to Light for Optimum Performance in the Field - $340,000 (Year 1) NIA; Methodology Issues in a Tailored Light Treatment for Person with Dementia - $1,019,613 (Year 2) Office of Naval Research; Color Information for the Circadian System - $170,000 (Year 3) **2011 COMPLETED - *denotes Co-PI** NYSERDA; Lighting Technology Greenhouse - $200,000 (Year 4) NIH; Personal Light Measuring Device for Correcting Circadian Disruption - $1,800,000 (Year 4) Office of Naval Research; Alerting Effects of Light at Different Circadian Phases in Humans - $58,616 (year 3) NIDA; Personal Light Measuring Device for Correcting Circadian Disruption - $63,000 (year 3) NEMA; Quantification of Day/Night Light Exposure - $50,000 Respironics; Development of a Sleep mask for Delivery of Light to Synchronize Circadian Phase with Rest-Activity Patterns - $70,000 – Confidential project NYSERDA; Energy Conservation Standards - $140,000 (year 3) NEMA; Quantification of Day/Night Light Exposure - $50,000 NINR; Using Light to Increase Visual and Perceptual Cues and Decrease Falls Risk - $187,819 Research Foundation of CUNY; Barricade Lighting Systems - $49,983 Genlyte Thomas Group; Effects of LEDs on Light-Sensitive Materials - $28,000 ICF, Inc.; Energy Star Program - $41,210 (year 2) NYSERDA; Energy Efficient and Safe Roadway Travel – phase II Demonstration Project - $299, 698 Research Foundation of CUNY; Nighttime Highway Construction Illumination - $298,665 **2010 COMPLETED - *Denotes Co-PI** NYSERDA; Lighting Technology Greenhouse - $200,000 (Year 3)

	NIH; Personal Light Measuring Device for Correcting Circadian Disruption - $1,800,000 (Year 3) Office of Naval Research; Alerting Effects of Light at Different Circadian Phases in Humans - $58,616 (year 2) NIDA; Personal Light Measuring Device for Correcting Circadian Disruption - $37,352 (year 2) NYSERDA; Energy Conservation Standards - $140,000 (Year 2) NEMA; Quantification of Day/Night Light Exposure - $50,000 NINR; Using Light to Increase Visual and Perceptual Cues and Decrease Falls Risk - $187,819 ICF, Inc.; Energy Star Program - $41,210 (year 1) **Grant Proposals Submitted and Not Funded** **Pending** NIH: Light Exposure and Avoidance System to Facilitate Sleep in College Students - 2,235,839 NIH: Lighting Interventions to Reduce Circadian Disruption in Rotating Shift Workers - $2,226-377 NYSERDA: Using Dynamic Messaging to Increase Energy Conserving Behavior - $98,882 NIH: Combinatorial Environmental Insults on Transgenerational Effects - $907,346 Duke University: Lemur Catta: A diurnal Animal Model to Study the Aging Circadian System - $1,662,716 NIH: Light as a Non-Pharmacological Treatment for Managing Chronic Pain Stress - $2,527,232 Mount Sinai School of Medicine; Light to Prevent/Control Negative Squelae of Cancer and its Treatment - $121,652 White Briar Corporation; Lighting System for Premature Infants Incubators Phase II - $597,932 Lund Institute of Technology; Swedish Healthy Home Metrics Research - $186,351 **Research Interests** Vision, color, psychology, energy, circadian phototransduction. **Editorship of Journals, Reviews of Manuscripts, Books and Research Proposals** Referee for the journal, *Lighting Research and Technology* - 1984 to present. Editorial Board, *Lighting Research and Technology* - 2000 to present
A. Rempel	**Projects** 2006-13 Passive Heating and Cooling in the Pacific Northwest: Field and modeling investigations of sunspaces, thermosiphons, direct-gain systems, natural ventilation, and movable insulation strategies in Oregon and northern California.

	2009-11 High-Performance Building Design Consulting: Energy modeling, field monitoring, Performance evaluation, and LEED documentation of daylighting, passive solar heating, natural ventilation and evaporative cooling, geothermal, photovoltaic, and advanced VAV systems for diverse buildings, including: Vernonia K-12 School (Vernonia, OR); LEED Platinum Cascadia Center for Sustainable Design (Seattle, WA); Living Building Challenge Columbia Wastewater Treatment Support Facility (Portland, OR); LEED Gold Everett Community College (Everett, WA) Lane Community College Downtown Campus (Eugene, OR); LEED Platinum Slocum Medical Center (Eugene, OR); LEED Gold Wheeler Pavilion, Lane County Fairgrounds (Eugene, OR) **Reviewer, etc.** 2013 National Science Foundation, Reviewer, Sustainability: Green Buildings. American Institute of Architects, SW Oregon, Guest speaker, Passive Solar Design. Society of Building Science Educators, Nominee for Secretary/Treasurer 2012-13 American Solar Energy Society, technical reviewer, Passive Buildings Section 2009-10 U.S. Environmental Protection Agency, Reviewer, SBIR Green Buildings Program **Publications Peer-Reviewed** in review Rempel AR, Rempel AW, Gates K, Shaw B. Revising thermal mass design rules for Pacific Northwest sunspaces. Building and Environment, submitted September 2013. 2013 Rempel AR, Rempel AW, Gates K, Shaw B. Oregon sunspace redesign / build: New priorities for thermal mass. Proceedings: American Solar Energy Society Annual Conference, Baltimore MD. 2013* Rempel AR, Rempel AW. Rocks, clays, water, and salts: Highly durable, infinitely rechargeable, eminently controllable thermal batteries for buildings. Geoscience of the Built Environment [Special Issue], Geosciences 3:63-101. 2013* Rempel AR, Rempel AW, Cashman K, Page C, Gates K, Shaw B. Interpretation of passive solar field data with EnergyPlus models: Un-conventional wisdom from four sunspaces in Eugene, Oregon. Building and Environment 60:158-172. 2012 Rempel AR, Rempel AW, Cashman K, Page C, Gates K, Shaw B. Sunspace thermal dynamics in the Pacific Northwest: A field and modeling study. Proc. Am. Solar Energy Soc. Ann. Conf., Denver CO.
Anthony Titus	**Exhibitions** Surface Mining, AAP, Cornell University, Ithaca, NY, 2014 *Marginal Tactics*, University of Wisconsin – Milwaukee, Milwaukee, WI, 2014 *Sleeping Life,* Rensselaer Black Box Gallery, 2012 *Base Illusions,* Museum 52 New York, NY, 2011 *Bare Subversion,* Kidd Yellin Gallery New York, NY, 2010

Selected Group Exhibitions
Accrochage, Friedman Benda, New York, NY, 2015

Vienna for Art's Sake! (Curated by Peter Noever - Traveling Exhibition) 2013-2015

An Armory Show 2013, (Curated by Michael Oatman & Ken Ragsdale), Albany Sage, Albany, NY, 2013

Oblique Strategies (Curated by Emmy Mikelson), Pace University, New York, NY 2013

BAM Benefit, 2013

Free Arts NYC Benefit, 2013

To The Stars On The Wings Of An Eel 2012

And Another Thing, Cuny Graduate Center, James Gallery 2011

Pretty Vacant, Off Site Location, New York, NY, 2010

Bedlam, Off Site Location, New York, NY – 2010

Kings County Biennial, kidd Yellin Gallery, Brookly, NY, 2010

Lectures, Conferences, Symposia, Grants
GRAHAM FOUNDATION GRANT TO INDIVIDUALS 2013: Twisted Siblings Relationships Between Contemporary painting and Digital Architecture (Research Grant)

University of Wisconsin – Milwaukee, Fall 2014, *"Marginal Tactics"* (Lecture)

Bennington College Spring 2014, "*Blank Field"* (Lecture)

30th National Conference on the Beginning Design Student 2014, *Spaces of Three Ecologies* (Conference)

Brooklyn Museum 2014, Twisted Siblings workshop

MAK Center in Los Angeles 2014, *Urban Hopes, Made in China* (Upcoming Symposium)

Harvard Graduate School of Design 2013, *Haters Make Me Famous: Newark's Riverfront & The Post-Great Migration City* (Symposium)

Pioneer Works 2013, *Twisted Siblings, Relationships Between Contemporary Painting & Digital Architecture (Lecture)*

Columbia University 2013, *"In the Line of Sight"* (Lecture)

Arts Letters & Numbers 2013, *"Between a Cloud and a Hard Place"* (Lecture)

Athens Institute for Education and Research 2013, *"Pedagogy in Motion"* (Conference)

Graham Foundation for the Advanced Studies of The Fine Arts 2013, *Twisted Siblings, Relationships Between Contemporary Painting & Digital Architecture* (Lecture)

University of North Carolina at Charlotte 2013 "*Hybridized Pedagogies"* (Conference)

	Tumblr. Art Symposium, New York 2013 (Symposium) University of Maryland 2013 "*Possible Futures - of Art and Architecture" (*Lecture/Symposium) United Nations International School Lecture Series 2012 *"When The Big Ships are Out - Eyes To The Ground"* (Lecture) Arts Letters & Numbers 2012 *"When The Big Ships Are Out"* (Lecture) Arts Letters & Numbers 2012 *"Shine on You Crazy Diamond"* (Lecture) Maysles Institute 2012, "*Street Views"* (Curated Film Series, 6 Symposiums) University of Idaho SoA Lecture Series 2012 *"Shine on You Crazy Diamond 2"* (Lecture) Cooper Union 2010 Feltman Lecture Series *"Shine on You Crazy Diamond"* (Lecture) **Publications** Upcoming Essay, Cloud Architecture Publication, Carla Leitao (ed) 2015 Peter Noever, Vienna for Art's Sake! - Exhibition Catalog, 2014 Anthony Titus, Afterword, The Great White Whale is Black, The Work of Anthony Candido, 2014 *Eyes To The Ground, Visionary Notions Of The Urban Landscape*, Urban Hopes, Made In China By Steven Holl, Christopn a. Kumpusch (ed), 2014 *Hybridized Pedagogies,* The Visibility of Research, 2013 Lebbeus Woods, -- *in Principle*, Lebbeus.wordpress.com, Oct 2010 **Visiting Critic** Art Center Environmental Studies, Pasadena, Ca Arts Letters & Numbers, Averill Park, NY Barnard College, New York, NY Bennington, Bennington, VT City College Undergraduate Architecture, New York, NY Columbia University GSAPP, New York, NY Cornell University AAP, Ithaca, NY Harvard Graduate School of Design, Cambridge, Ma Massachusetts Institute of Technology, Cambridge, Ma Parsons/New School, New York, NY Rhode Island School of Design Sci-Arc, Los Angeles, Ca University of Idaho, Moscow, Id University of Maryland, College Park, MD Yale University, New Haven, CT
Ning Xiang	**Patents** N. Xiang, H. Lu and N. Leventis, "Low-cost light-weight organic aerogel materials for high sound transmission loss applications", utility patent, 2012. **Books, Monographs and Book Chapters**

Xiang, N. and Sessler, G. (2015): *Acoustics, Communication and Information -- Memorial Volume in Honor of Manfred R. Schroeder*, Springer 2015 (ISBN 978-319-05659-3).

Xiang, N. Xie, B.-S. and Cox, Trevor, J.(2015): Recent applications of number-theoretic sequences in audio and acoustics, in *Acoustics, Communication and Information -- Memorial Volume in Honor of Manfred R. Schroeder* , ed. N. Xiang, and G. Sessler, Springer 2015, pp. 93-111.

Xiang, N. (2015): Advanced Room-Acoustics Decay Analysis, in *Acoustics, Communication and Information -- Memorial Volume in Honor of Manfred R. Schroeder* , ed. N. Xiang, and G. Sessler, Springer 2015, pp. 33-56.

Refereed Journal Articles

Xiang, N. (2015): Advances of Acoustics Research in Coupled Spaces, *ACTA ACUSTICA* (in Chinese), 40, (in press).

Xiang, N. , Bush, D. and Summers, J. (2015): Experimental validation of a coprime linear microphone array for high-resolution direction-of-arrival measurements, *J. Acoust. Soc. Am. Express Letters*, 137, (in press).

Escolano, J. Xiang, N., Perez-Lorenzo, J. Cobos, M. and López, J. (2014): A Bayesian Direction-of-Arrival Model for an Undetermined Number of Sources using a Two-Microphone Array, *J. Acoust. Soc. Am.*, 135, 742-753.

Xiang, N., Escolano, J. Navarro, J. and Jing, Y. (2013): Investigation on the effect of aperture sizes and receiver positions in coupled-volume systems, *J. Acoust. Soc. Am.*, 133, pp. 3975-3985.

*Robinson, P. Pätynen, J. Lokki, T. Jang, H.-S. Jeon, J.-Y. and Xiang, N. (2013): Architectural influences on auditory spatial discrimination, *J. Acoust. Soc. Am.*, 132, pp. 3940-3950.

*Robinson, P. and Xiang, N. (2013): A 1:8 scale model binaural manikin to produce auralizations for psychoacoustic testing, *J. Acoust. Soc. Am.*, 133, pp. EL162-EL167.

*Botts, J. Escolano, J. and Xiang, N. (2013): Design of IIR filters with Bayesian model selection and parameter estimation, *IEEE Trans. on ASLP*, 21 pp. 669-674.

*Jasa, T. and Xiang, N. (2012): Nested sampling applied in Bayesian room-acoustics decay analysis, *J. Acoust. Soc. Am.*, 132, pp.3251 -3262.

Escolano J. Perez-Lorenzo, J. M. Xiang, N. Cobos, M. and Lopez, J. L. (2012): A Bayesian inference model for speech localization (L), *J. Acoust. Soc. Am.*, 132, 1257-1260.

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Barach, P. Rockstroh, K. Sykes, D. and Xiang, N. (2014): Redesigning Hospital Alarms for Patient Safety: Alarmed and Potentially Dangerous, *11th International Congress on Noise as a Public Health Problem (ICBEN) 2014*, Nara, JAPAN.

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Non-Refereed Conference Articles and Abstracts

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Jasa, T., Botts, J. and Xiang, N. (2013): Energy based Markov Chain Monte Carlo algorithms for Bayesian model selection, *Proceedings of International Congress on Acoustics, Montreal, Canada*.

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Xiang, N., Robinson Ph. and Jing, Y. (2010): Characterization of non-exponential sound energy decays in multiple coupled volumes, Proc. 20th International Congress on Acoustics, Sydney Aug. 2010.

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Research Grants and Contracts – White Papers
DoD W81XWH-14-DMRDP-JPC1-TPT: Identifying the Processes that Underpin Expertise, Developing Simulation Training Procedures and Reducing Patient Harm in Emergency Medicine, Jan. 25th 2015 $1.5M (3 years).

Proposals – Not Funded
FGI 2010, white paper: Innovative Acoustics Materials for Healthcare Facilities, PI N. Xiang, $350K.

NSF11-1440, Collaborative Research: Novel Use of Synthetic Jet Actuators for Indoor Air Quality Control, co-PI Lupita Montoya, co-PI N. Xiang, $374,9K.

US Army A11a-T006, Interactive Acoustic Simulation in Urban and Complex Environments, $100K, co-PI N. Xiang (for RPI, $35K).

NVIDIA 2011-09, Adaptive hybrid simulation methods for real-time acoustic scene rendering in complex environments, PI, N. Xiang ($30K).

NSF PD 10-1271 (proposal): Efficient high-dimensional inverse analysis of multilayer poroelastic acoustic materials, PI. N. Xiang, ($235K)
DARPA-BAA-11-65: Acoustic Metamaterials Based on Porous Multiscale Networks of Nanoparticles for Broadband Drastic Acoustic Attenuation and Blast Wave Mitigation, PI, Dr. Lu (Univ Texas Dallas), co-PI. N. Xiang, ($1M)

FGI 2013 (proposal): Validations of real implementation according to the Facility Guidelines for Healthcare Facilities, PI N. Xiang, $50K.

NSF-DMS: Efficient high-dimensional inversion employing Lebesgue integration as a mathematical foundation, PI. N. Xiang, $230K (2 years).

NSF-CHS: SMALL : Multimodal immersive, readl-time resynthesis of rooms (MIRROR), J. Braasch (PI), N. Xiang (co-PI), $400K (3 years).

NSF-DMREF: Collaborative research: Ductile aerogels for drastic damping of acoustic waves, H. Lu (PI), N. Xiang (co-PI), $261K (3 years).

ST.GOBAIN: Next generation gypsum wallboard: Two innovative, proprietary materials and assemblies for improving low frequency sound transmission loss, PI. N. Xiang, $150K (1 year).

ARHQ: Using simulation to optimize clinical performance by engineering the acoustic environment, B. Robin (PI) and N. Xiang (co-PI) $750K (3 years)

NSF-MoMS: Collaborative Research: Hierarchically Structured Ductile Aerogels for Broadband Acoustic Wave Attenuation, H. Lu (PI), N. Xiang (co-PI) $400K

NSF-CHS: SMALL: MULTIMODAL, IMMERSIVE, REAL-TIME RESYNTHESIS OF ROOMS (MIRROR), J. BRAASCH (PI), N. XIANG (CO-PI) $482K.

Research Interests
Laser Doppler vibrometry-based miniature acoustic sensors for scale-modeling technique (development of NSF oriented research projects)

Dynamic properties of aerogel materials for high damping and low-cost, low weight (development of NSF and defense oriented research projects)

Application of nonlinear identification technology in detection of burial objects (development of DoD oriented research projects)

Alarm fatigue in healthcare facilities (development of NIH-oriented research projects)

Editorship of Journals, Reviews of Manuscripts, Books, and Research Proposals
Since Dec. 2003: Associate Editor, the *Journal of the Acoustical Society of America,*

Since July 2006: Associate Editor, The Express Letters in the *Journal of the Acoustical Society of America*.

Reviewer for *IEEE*

Reviewer for *J. Acoustical Society of America.*

Reviewer for Express Letters in *J. Acoustical Society of America*.

Reviewer for *J. Computational Acoustics.*

Reviewer for *ACUSTICA – acta Acustica.*

Reviewer for *J. Sound and Vibration.*

Reviewer for *J. Applied Acoustics*.

Reviewer for *Building Simulation: An International Journal.*

Reviewer for *International J. of Environmental Modeling and Software.*

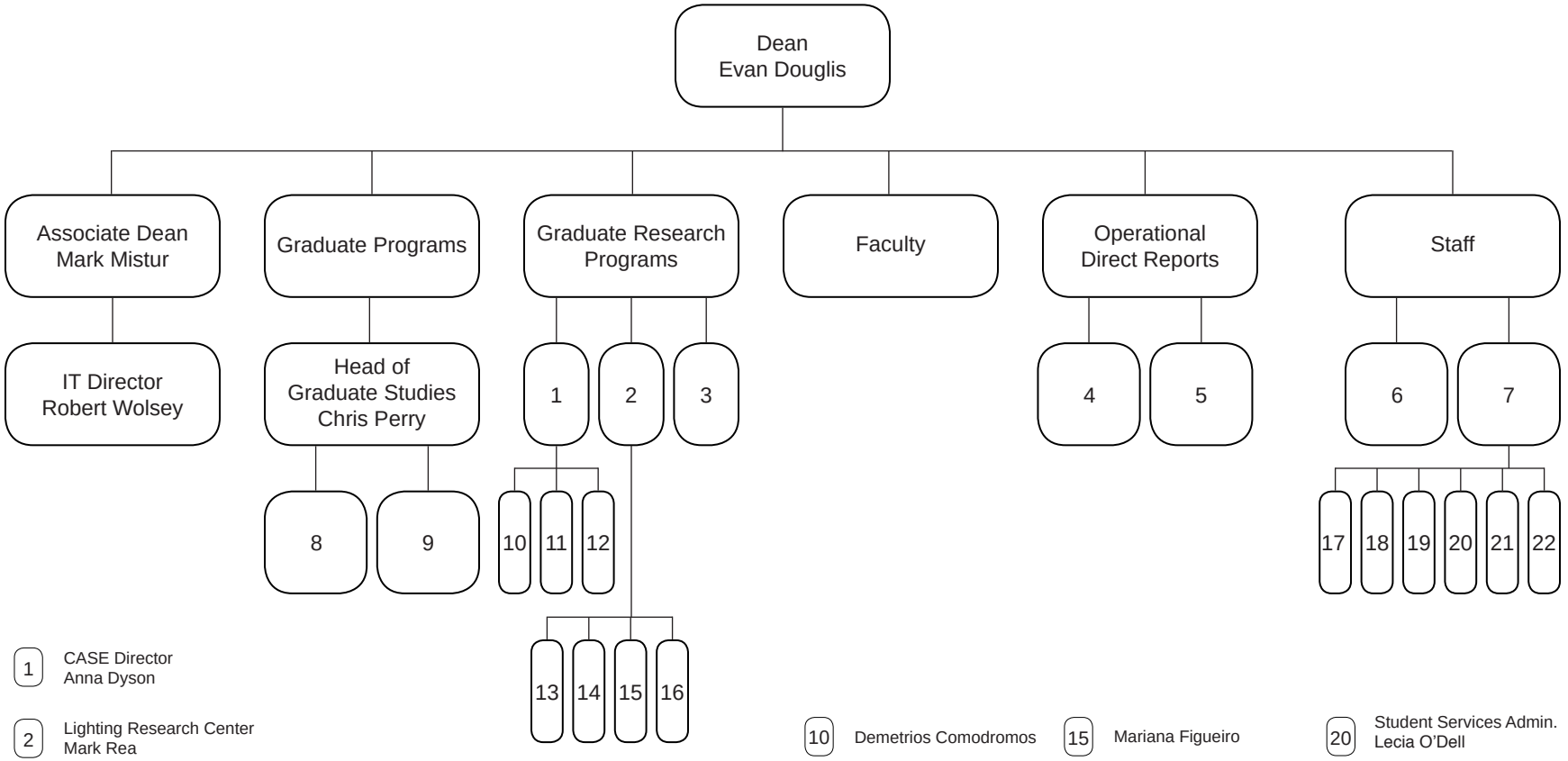
Reviewer for *J. of Signal Image and Video Processing.*

Reviewer for *International J. of Signal and Imaging Systems Engineering*.

Reviewer for *Journal of Signal Processing.*

Reviewer for *Noise Control Engineering Journal.*

Organizational Chart 1: Primary Direct Reports



1 CASE Director
Anna Dyson

2 Lighting Research Center
Mark Rea

3 Architectural Acoustics
Ning Xiang

4 Online Projects Coordinator
Gustavo Crembil

5 Director of Publications
Adam Dayem

6 Dean's Executive Assistant
Pam Zepf

7 Business Manager
Francine Fredette

8 M.Arch Director
Lonn Combs

9 M.Arch II Director
Chris Perry

10 Demetrios Comodromos

11 Nancy Diniz

12 Josh Draper

13 Assoc. Director
Russ Leslie

14 Nadarajah Narendran

15 Mariana Figueiro

16 Research + Admin. Staff

17 Business Coordinator
Carly Brackett

18 Business Administrator
Anna Gandhi

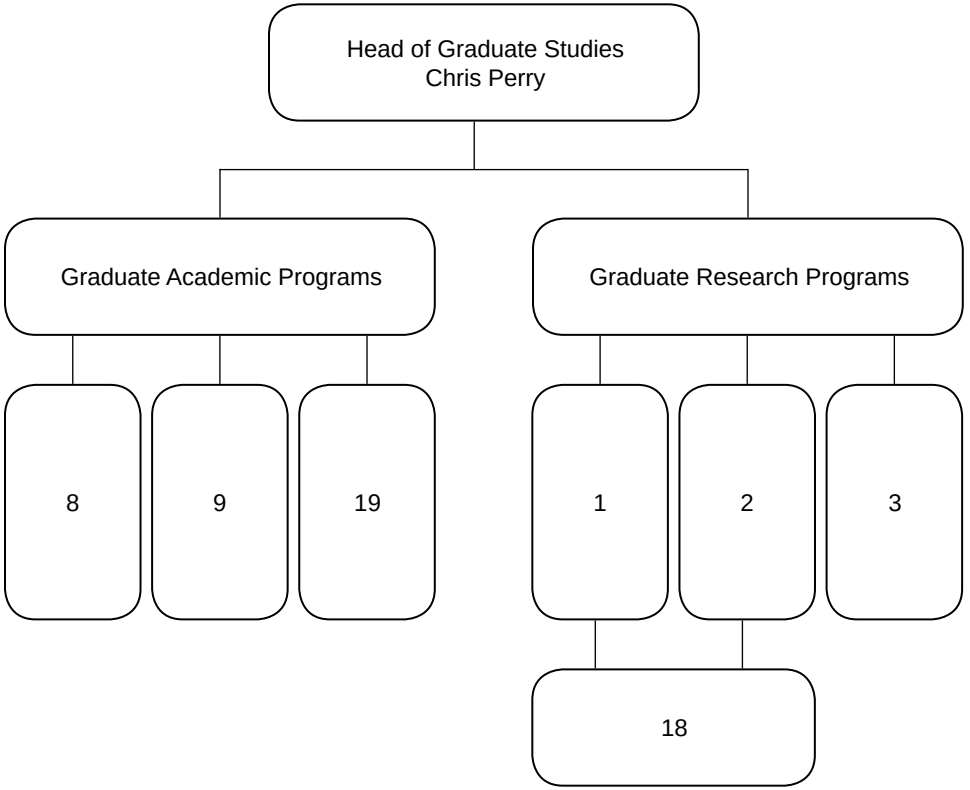
19 Senior Student Services Admin.
Vicki Pocorobba

20 Student Services Admin.
Lecia O'Dell

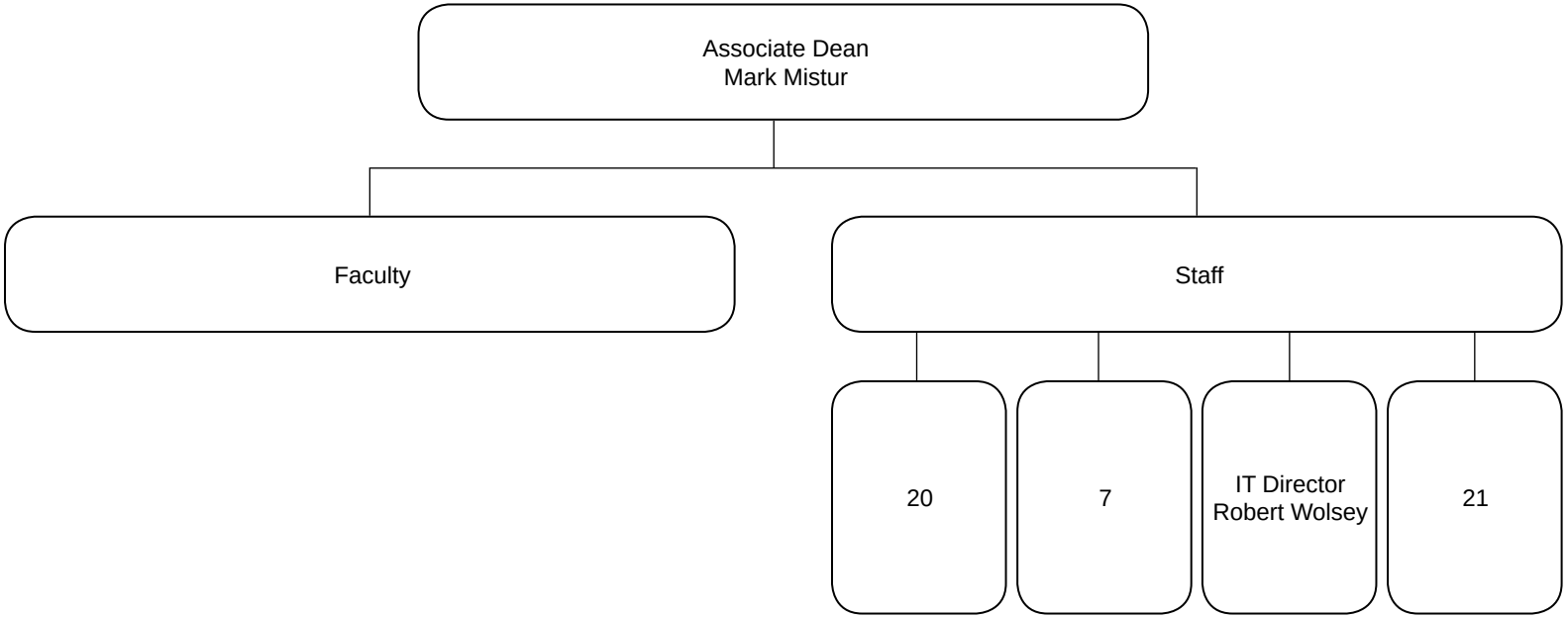
21 Shop Director
Bill Bergman

22 Assistant Shop Director
James Van Duyne

Organizational Chart 2: Secondary Direct Reports

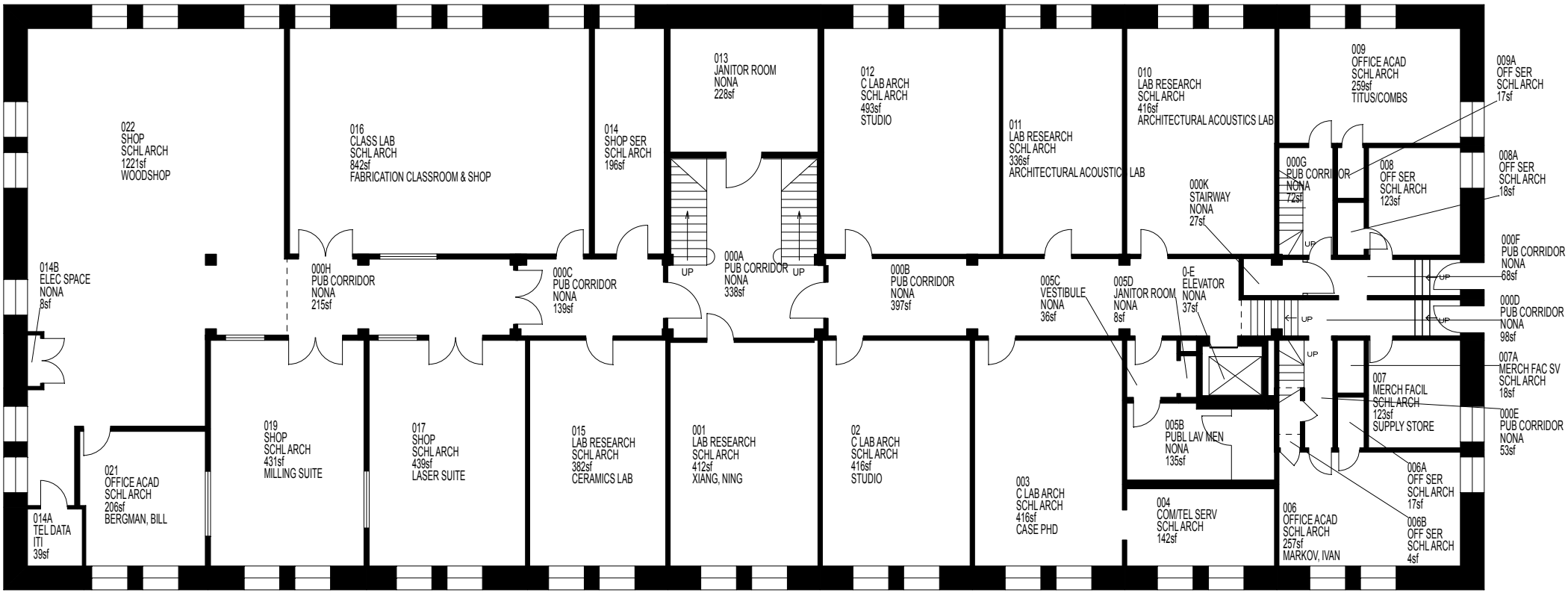


Organizational Chart 3: Secondary Direct Reports



SoA Organizational Charts

Greene Building Floor Plans



GREENE BUILDING BASEMENT 000 LEVEL

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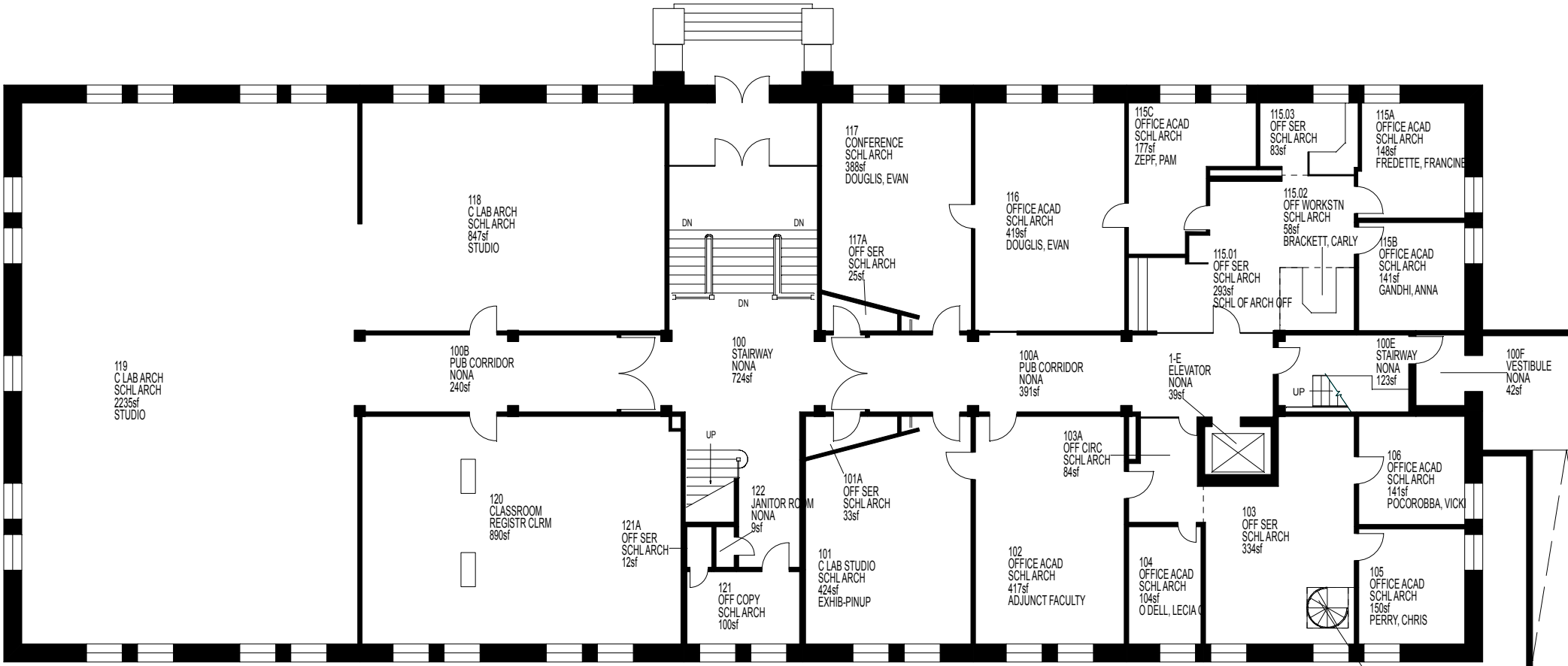

GREENE BUILDING 100 LEVEL

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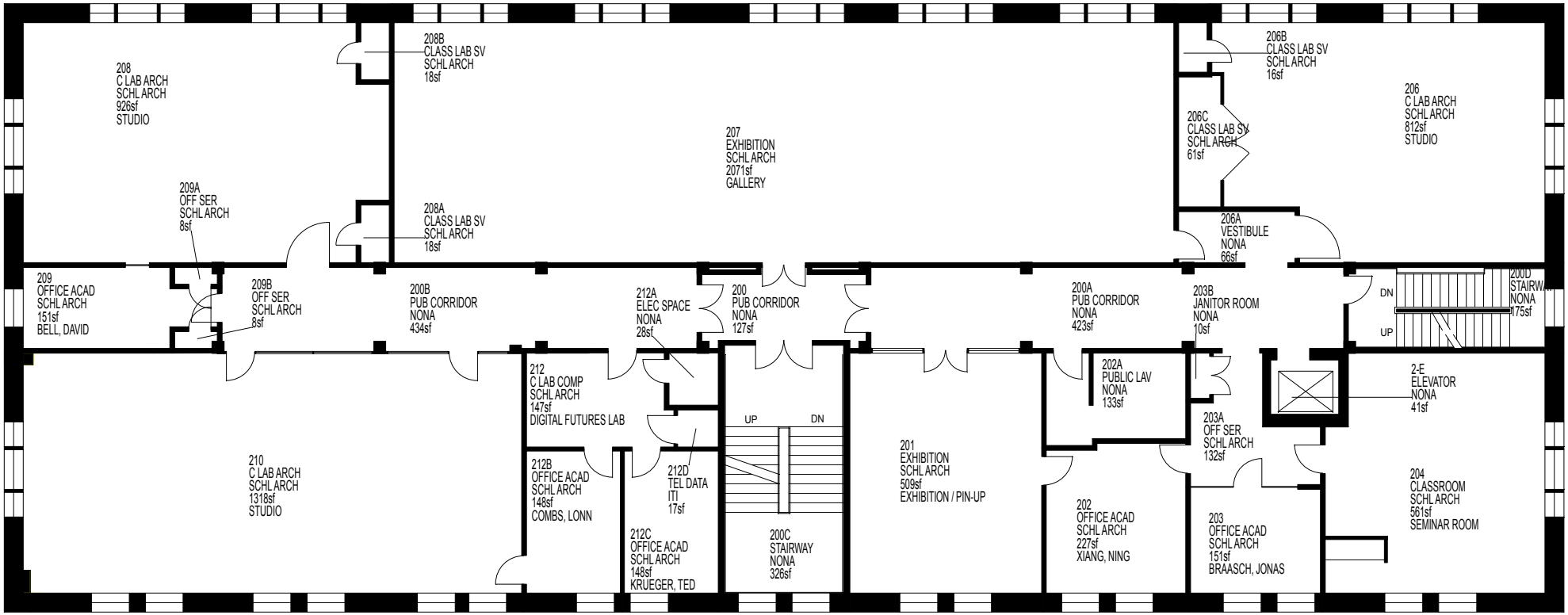
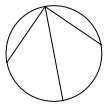
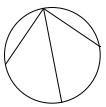


GREENE BUILDING 200 LEVEL



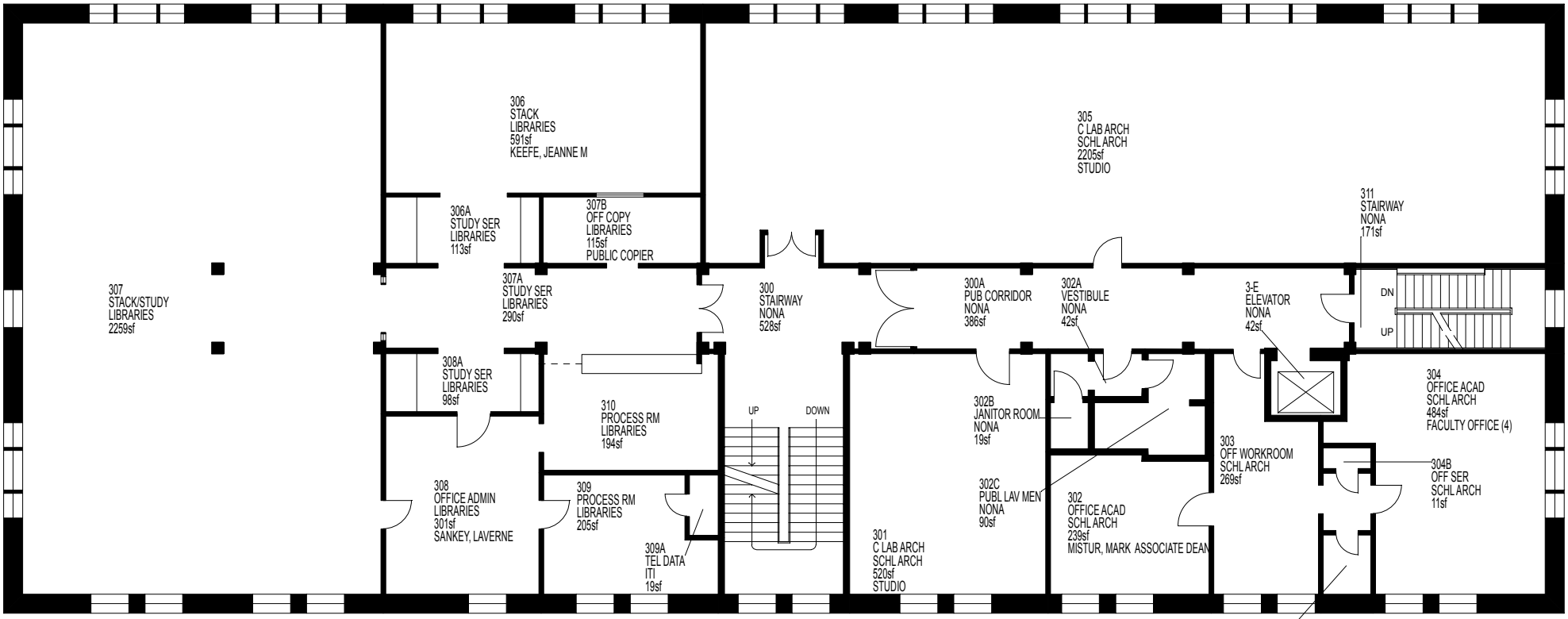
2

GREENE BUILDING MZ LEVEL



N

MZ



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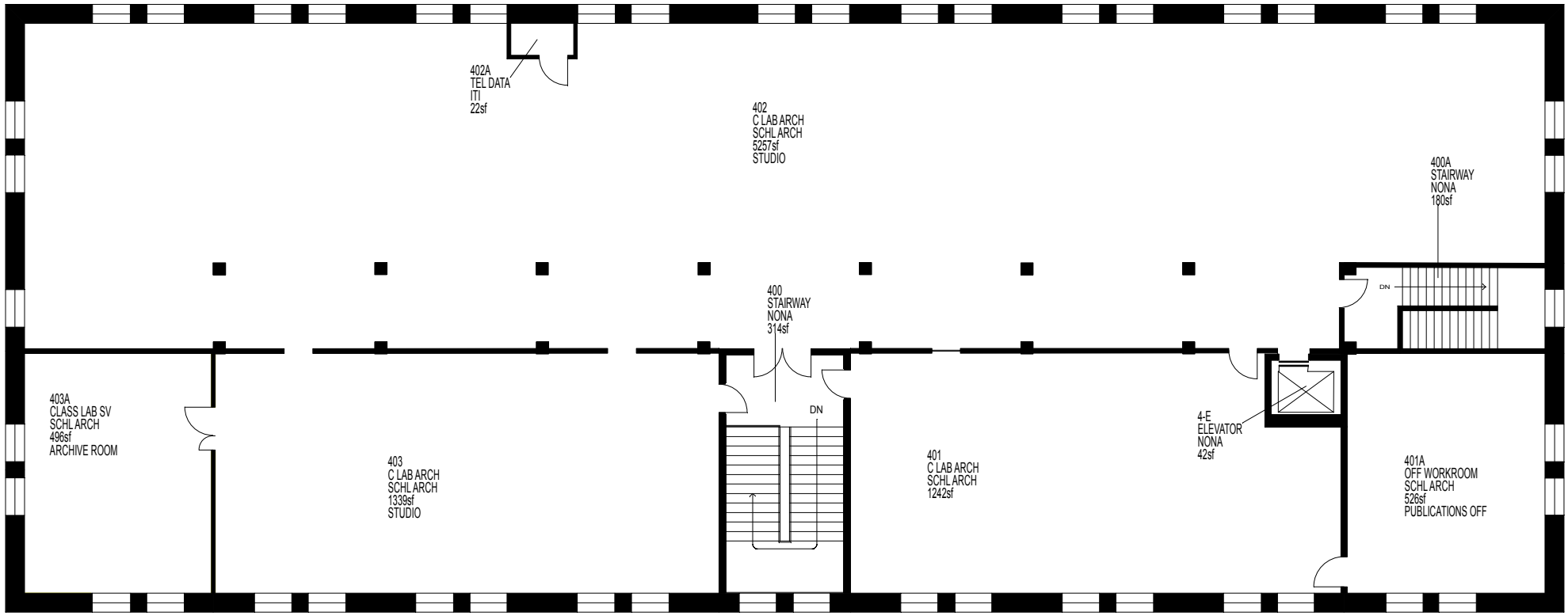
N

3



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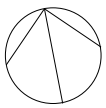

4

B.Arch SPC Matrix

SPCs

A.1: Professional Communication Skills, A.2: Design Thinking Skills, A.3: Investigative Skills, A.4: Architectural Design Skills, A.5: Ordering Systems, A.6: Use of Precedents, A.7: History and Global Culture, A.8: Cultural Diversity & Social Equity, B.1: Pre-Design, B.2: Site Design, B.3: Codes & Regulations, B.4: Technical Documentation, B.5: Structural Systems, B.6: Environmental Systems, B.7: Building Envelope Systems and Assemblies, B.8: Building Materials & Assemblies, B.9: Building Service Systems, B.10: Financial Considerations, C.1: Research, C.2: Integrated Evaluations & Decision-Making Design Process, C.3: Integrative Design, D.1: Stakeholder Roles in Architecture, D.2: Project Management, D.3: Business Practices, D.4: Legal Responsibilities, D.5: Professional Conduct

ARCH-COURSE NO.	COURSE NAME	CREDITS	REALM A								REALM B										REALM C			REALM D				
			A.1	A.2	A.3	A.4	A.5	A.6	A.7	A.8	B.1	B.2	B.3	B.4	B.5	B.6	B.7	B.8	B.9	B.10	C.1	C.2	C.3	D.1	D.2	D.3	D.4	D.5
FIRST YEAR FALL																												
2150	The Ethos of Architecture	2							■																			
2160	Architectural Media	2																										
2510	Materials & Design	2																■										
2520	Digital Constructs 1	2																										
2800	Architectural Design Studio 1	5																										
FIRST YEAR SPRING																												
2370	Energy, Comfort & Ecology	2														■												
2530	Digital Constructs 2	2																										
2810	Architectural Design Studio 2	5																										
4090	Architectural Case Studies	2																										
4120	Modernity in Culture, Civilization & Architecture [1st taught S 2015]	2																										
SECOND YEAR FALL																												
2330	Structures 1	3													■													
2350	Construction Systems	2															■	■										
2540	Digital Constructs 3	2																										
2820	Architectural Design Studio 3 [replaces ARCH-2220, starts F 2015]	5			■	■	■	■		■	■	■																
4100	An Architectural Genealogy 1 [replaces parts of ARCH-2110 & -2120]	2							■	■																		
4130	Modernity in Culture, Civilization & Architecture 2 [1st taught F 2015]	2																										
SECOND YEAR SPRING																												
2230	Architecture Design 3 [final - S 2015, replaced by ARCH-2830 S 2016]	6				■	■	■				■																
2360	Environmental & Ecological Systems	4														■												
2550	Digital Constructs 4	2																										
4110	An Architectural Genealogy 2 [replaces parts of ARCH-2110 & -2120]	2							■	■																		
THIRD YEAR FALL																												
4140	Modernity in Culture & Architecture [final version taught F 2015]	4																										
4240	Architecture Design 4 [replaced in 2016 - 17 by ARCH-4770]	6																										
4330	Structures 2	3													■													
4560	Materials & Enclosure [begins in F 2016 - until then, taught in S	2															■	■										
4963	Integrated Design Schematic [replaced by ARCH-4820 fall 2016]	6		■	■	■	■	■			■	■	■									■	■					
THIRD YEAR SPRING																												
2130	Contemporary Design Approaches [becomes ARCH-4150 in S 17]	2																										
4300	Design Development [replaced by ARCH-4830 in 2016 - 17]	6	■	■							■		■	■	■				■			■	■					
4540	Professional Practice 1	2											■	■										■	■		■	■
4740	Building Systems & Environment	4														■			■	■								
FOURTH YEAR FALL																												
4050	Cities & Their Territories - taught S 2015	2																										
4250	Architecture Design 5 [replaced in 2016 - 17 by ARCH-4780]	6																										
4550	Professional Practice 2	2																		■				■	■	■	■	■
4690	Case Studies [taught final time - F 2016]	4	■																		■							
	Professional Elective 1	2																										
	Professional Elective 2	2																										
FOURTH YEAR SPRING																												
4260	Architecture Design 6 [replaced 2016 - 17 by ARCH-4790]	6																										
	Professional Elective 3	2																										
	Professional Elective 4	2																										
FIFTH YEAR FALL																												
4980	B.Arch. Final Project 1 [replaced fall 2016 by ARCH-4790]	5																										
4981	Methods Seminar [replaced F 2016 by ARCH-4910]	1																			■							
	Professional Elective 5	2																										
FIFTH YEAR SPRING																												
4599	The Economics of Architecture (will not be taught until S 2019)	2																		■						■		
4990	B.Arch. Final Project 2 [replaced by one term ARCH-4990 in F 2016]	6	■	■	■																							
	Professional Elective 6	2																										

M.Arch SPC Matrix

ARCH-COURSE NO.	COURSE NAME	CREDITS	REALM A								REALM B										REALM C			REALM D				
			A.1	A.2	A.3	A.4	A.5	A.6	A.7	A.8	B.1	B.2	B.3	B.4	B.5	B.6	B.7	B.8	B.9	B.10	C.1	C.2	C.3	D.1	D.2	D.3	D.4	D.5
	SPCs: A.1: Professional Communication Skills, A.2: Design Thinking Skills, A.3: Investigative Skills, A.4: Architectural Design Skills, A.5: Ordering Systems, A.6: Use of Precedents, A.7: History and Global Culture, A.8: Cultural Diversity & Social Equity, B.1: Pre-Design, B.2: Site Design, B.3: Codes & Regulations, B.4: Technical Documentation, B.5: Structural Systems, B.6: Environmental Systems, B.7: Building Envelope Systems and Assemblies, B.8: Building Materials & Assemblies, B.9: Building Service Systems, B.10: Financial Considerations, C.1: Research, C.2: Integrated Evaluations & Decision-Making Design Process, C.3: Integrative Design, D.1: Stakeholder Roles in Architecture, D.2: Project Management, D.3: Business Practices, D.4: Legal Responsibilities, D.5: Professional Conduct																											
	FIRST YEAR FALL																											
2150	The Ethos of Architecture [not in M.Arch. after 2014-15]	2																										
2160	Architectural Media [not in M.Arch. after 2014-15]	2																										
5100	History, Theory, Criticism 1 [co-listed with ARCH-4100 & -4130]	4							■	■																		
5140	Structures 1 [co-listed with ARCH-2330]	3													■													
5160	Digital Constructs 1 [co-listed with ARCH-2540]	2																										
5200	Grad. Architecture Design 1 [replaces ARCH-2620 & co-listed with ARCH-2820]	5			■	■	■	■		■	■	■																
5300	Materials & Construction Systems [composite of ARCH-2510 & -2350]	3															■	■										
	FIRST YEAR SPRING																											
2630	Graduate Architecture Design 3 [co-listed with ARCH-2230, replaced by ARCH-5210 S 2016]	6				■	■	■				■																
5110	History, Theory, Criticism 2 [co-listed with ARCH-4110 & -4120]	4							■	■																		
5170	Digital Constructs 2 [co-listed with ARCH-2550]	2																										
5310	Environmental & Ecological Systems [co-listed with ARCH-2360]	4														■												
5330	Economics & Architecture [offered through Mgmnt School until 2019]	2																										
	SECOND YEAR FALL																											
5150	Structures 2 [co-listed with ARCH-4330]	3													■													
6320	Built Ecologies 1 [CASE] [fulfills M.Arch.1 requirement in Built Ecologies]	3																										
6380.8	Environmental Parametrics [CASE] [fulfills M.Arch.1 requirement in Built Ecologies]	2																										
6610.8	Grad. Architecture Design 3 [CASE] [fulfills M.Arch.1 requirement in Built Ecologies]	5		■	■	■	■				■											■	■					
6810.81	Research Design Seminar [CASE] [fulfills M.Arch.1 requirement in Built Ecologies]	3																										
	SECOND YEAR SPRING																											
5360	Building Systems & Environment [co-listed with ARCH-4740]	4														■			■	■								
5380	Professional Practice 1 [co-listed with ARCH-4540 taught in future fall semesters]	4											■	■										■	■		■	■
6680	History, Theory, Criticism 3 [co-listed with ARCH-4090 & -4150]	4																										
4300*	Design Development [becomes ARCH-6630 & moves to F 3rd year. ARCH-6620 replaces it here]*	6	■	■							■		■	■	■				■			■	■					
*The ARCH-4300 number is incorrect, 2015-16 catalog lists it that way. Will be corrected by S 2016.																												
	THIRD YEAR FALL																											
4140	Modernity in Culture & Architecture [final taught in F 2015]	4																										
5340	Materials & Enclosure [co-listed with ARCH-4560]	2															■	■										
6980	Master's Project [replaced by ARCH-6630 in F 2016]	5																										
6981	Methods Seminar [replaced by ARCH-6750 in F 2016]	1																			■							
	Professional Elective	2																										
	General Electives	4																										
	THIRD YEAR SPRING																											
5390	Professional Practice 2 [co-listed with ARCH-4550:]	2																		■				■	■	■	■	■
6980	Master's Project [replaced by ARCH-6948 in S 2017]	6	■	■	■																■							
	Professional Elective	4																										
	General Electives	6																										

Middle States Commission on Higher Education Letter

MIDDLE STATES COMMISSION ON HIGHER EDUCATION
3624 Market Street, Philadelphia, PA 19104-2680. Tel: 267-284-5000. Fax: 215-662-5501
www.msche.org

STATEMENT OF ACCREDITATION STATUS

RENSSELAER POLYTECHNIC INSTITUTE
110 Eighth Street
Troy, NY 12180-3590
Phone: (518) 276-6000; Fax: (518) 276-8702
www.rpi.edu

Chief Executive Officer: Dr. Shirley Ann Jackson, President

INSTITUTIONAL INFORMATION

Fall Enrollment (Headcount): 5557 Undergraduate; 1380 Graduate

Control: Private (Non-Profit)

Affiliation: None

Carnegie Classification: Research - Very High Research Activity

Approved Degree Levels: Bachelor's, Master's, Doctor's - Research/Scholarship;

Distance Education Programs: Fully Approved

Accreditors Recognized by U.S. Secretary of Education: n/a

Other Accreditors: Undergraduate degree programs in chemistry are certified by the American Chemical Society; professional programs in architecture are accredited by the National Architecture Accrediting Board. The Lally School of Management is an accredited member of the Association to Advance Collegiate Schools of Business, an international accreditation. Eleven of the School of Engineering bachelor's programs are individually accredited by the Engineering Accreditation Commission of ABET (Accreditation Board for Engineering and Technology), www.abet.org.

Instructional Locations

Branch Campuses: Rensselaer at Hartford, Hartford, CT

Additional Locations: Pratt and Whitney Aircraft North Berwick Engineerinc Centere, North Berwick, ME (ANYA)

Other Instructional Sites: Center for Architecture Science and Ecology, New York, NY; Darrin Fresh Water Institute, Bolton Landing, NY; Rensselaer at Groton Site, Groton, CT

ACCREDITATION INFORMATION

Status: Member since 1927

Last Reaffirmed: November 17, 2011

Most Recent Commission Action:

October 27, 2014: To acknowledge receipt of the substantive change request and to include the additional location at Pratt and Whitney Aircraft North Berwick Engineering Center, 113 Wells Street, North Berwick, ME 03609 within the scope of the institution's accreditation, pending a site visit within six months of the

commencement of operations at the additional location. The Commission requires written notification within thirty days of the commencement of operations. In the event that operations at the additional location do not commence within one calendar year from the approval of this action, approval will lapse. The next evaluation visit is scheduled for 2015-2016.

Brief History Since Last Comprehensive Evaluation:

November 17, 2011:	To accept the Periodic Review Report and to reaffirm accreditation. To request a progress report, due April 1, 2013, documenting evidence of the implementation of the new faculty governance structure and of assessment of its effectiveness (Standard 4). The next evaluation visit is scheduled for 2015-2016.
June 27, 2013:	To accept the progress report. The next evaluation visit is scheduled for 2015-2016.

Next Self-Study Evaluation: 2015 - 2016

Next Periodic Review Report: 2021

Date Printed: August 4, 2015

DEFINITIONS

Branch Campus - A location of an institution that is geographically apart and independent of the main campus of the institution. The location is independent if the location: offers courses in educational programs leading to a degree, certificate, or other recognized educational credential; has its own faculty and administrative or supervisory organization; and has its own budgetary and hiring authority.

Additional Location - A location, other than a branch campus, that is geographically apart from the main campus and at which the institution offers at least 50 percent of an educational program. ANYA ("Approved but Not Yet Active") indicates that the location is included within the scope of accreditation but has not yet begun to offer courses. This designation is removed after the Commission receives notification that courses have begun at this location.

Other Instructional Sites - A location, other than a branch campus or additional location, at which the institution offers one or more courses for credit.

Distance Education Programs - Fully Approved, Approved (one program approved) or Not Approved indicates whether or not the institution has been approved to offer diploma/certificate/degree programs via distance education (programs for which students could meet 50% or more of the requirements of the program by taking distance education courses). Per the Commission's Substantive Change policy, Commission approval of the first two Distance Education programs is required to be "Fully Approved." If only one program is approved by the Commission, the specific name of the program will be listed in parentheses after "Approved."

EXPLANATION OF COMMISSION ACTIONS

An institution's accreditation continues unless it is explicitly withdrawn or the institution voluntarily allows its accreditation to lapse. In addition to reviewing the institution's accreditation status at least every 5 years, the Commission takes actions to approve substantive changes (such as a new degree or certificate level, opening or closing of a geographical site, or a change of ownership) or when other events occur that require review for continued compliance.

Any type of report or visit required by the Commission is reviewed and voted on by the Commission. Reports submitted for candidacy, self-study evaluation, periodic review or follow-up may be accepted, acknowledged, or rejected.

The Commission "Accepts" a report when its quality, thoroughness, and clarity are sufficient to respond to all of the Commission's concerns, without requiring additional information in order to assess the institution's status.

The Commission "Documents receipt of" a letter or report when it addresses the Commission's concerns only partially because the letter or report had limited institutional responses to requested information, did not present evidence and analysis conducive to Commission review, were of insufficient quality, or necessitated extraordinary effort by the Commission's representatives and staff performing the review. Relevant reasons for not accepting the letter or report are noted in the action. The Commission may or may not require additional information in order to assess the institution's status.

The Commission "Rejects" a letter or report when its quality or substance are insufficient to respond appropriately to the Commission's concerns. The Commission requires the institution to resubmit the report and may request a visit at its discretion. These terms may be used for any action (reaffirm, postpone, warn, etc.).

Types of Follow-Up Reports:

Accreditation Readiness Report (ARR): The institution prepares an initial Accreditation Readiness Report during the application phase and continually updates it throughout the candidacy process. It is for use both by the institution and the Commission to present and summarize documented evidence and analysis of the institution's current or potential compliance with the Commission's accreditation standards.

Progress Report: The Commission needs assurance that the institution is carrying out activities that were planned or were being implemented at the time of a report or on-site visit.

Monitoring Report: There is a potential for the institution to become non-compliant with MSCHE standards; issues are more complex or more numerous; or issues require a substantive, detailed report. A visit may or may not be required. Monitoring reports are required for non-compliance actions.

Supplemental Information Report: This report is intended only to allow the institution to provide further information, not to give the institution time to formulate plans or initiate remedial action. This report is required when a decision is postponed. The Commission may request a supplemental information report at any time during the accreditation cycle.

Commendations:

Periodically, the Commission may include commendations to the institution within the action language. There are three commendations. More than one commendation may be given at the same time:

To commend the institution for the quality of the [Self-Study or PRR] report. The document itself was notably well-written, honest, insightful, and/or useful.

To commend the institution for the quality of its [Self-Study or PRR] process. The Self-Study process was notably inclusive.

To recognize the institution's progress to date. This is recognition for institutions that had serious challenges or problems but have made significant progress.

Affirming Actions

Grant Candidate for Accreditation Status: This is a pre-accreditation status following a specified process for application and institutional self-study. For details about the application process, see the MSCHE publication, Becoming Accredited. The U.S. Department of Education labels Candidacy as "Pre-accreditation" and defines it as the status of public recognition that an accrediting agency grants to an institution or program for a limited period of time that signifies the agency has determined that the institution or program is progressing toward accreditation but is not assured of accreditation) before the expiration of that limited period of time. Upon a grant of candidate for accreditation status, the institution may be asked to submit additional Accreditation Readiness Reports until it is ready to initiate self study.

Grant Accreditation: The Commission has acted to grant accreditation to a Candidate institution and does not require the submission of a written report prior to the next scheduled accreditation review in five years.

Grant Accreditation and request a Progress Report or Monitoring Report: The Commission has acted to grant accreditation to a Candidate institution but requires the submission of a written report prior to the next scheduled accreditation review to ensure that the institution is carrying out activities that were planned or were being implemented at the time of the report or on-site visit.

Reaffirm Accreditation via Self Study or Periodic Review Report: The Commission has acted to reaffirm accreditation and does not require the submission of a written report prior to the next scheduled accreditation review in five years. The action language may include recommendations to be addressed in the next Periodic Review Report or Self Study. Suggestions for improvement are given, but no written follow-up reporting is needed for compliance.

Reaffirm Accreditation via Self Study or Periodic Review Report and request a Progress Report or Monitoring Report: The Commission has acted to reaffirm accreditation but requires the submission of a written report prior to the next scheduled accreditation review to ensure that the institution is carrying out activities that were planned or were being implemented at the time of the report or on-site visit.

Administrative Actions

Continue Accreditation: A delay of up to one year may be granted to ensure a current and accurate representation of the institution or in the event of circumstances beyond the institution's control (natural disaster, U.S. State Department travel warnings, etc.). The institution maintains its status with the Commission during this period.

Procedural Actions

Defer a decision on initial accreditation: The Candidate institution shows promise but the evaluation team has identified issues of concern and recommends that the institution be given a specified time period to address those concerns. Institutions may not stay in candidacy more than 5 years.

Postpone a decision on (reaffirmation of) accreditation: The Commission has determined that there is insufficient information to substantiate institutional compliance with one or more standards. The Commission requests a supplemental information report.

Voluntary Lapse of Accreditation: The institution has allowed its accreditation to lapse by not completing required obligations. The institution is no longer a member of the Commission upon the determined date that accreditation will cease.

Non-Compliance Actions

Warning: A Warning indicates that an institution has been determined by the Commission not to meet one or more standards for accreditation. A follow-up report, called a monitoring report, is required to demonstrate that the institution has made appropriate improvements to bring itself into compliance.

Probation: Probation indicates that an institution has been determined by the Commission not to meet one or more standards for accreditation and is an indication of a serious concern on the part of the Commission regarding the level and/or scope of non-compliance issues related to the standards. The Commission will place an institution on Probation if the Commission is concerned about one or more of the following:

1. the adequacy of the education provided by the institution;
2. the institution's capacity to make appropriate improvements in a timely fashion; or
3. the institution's capacity to sustain itself in the long term.

Probation is often, but need not always be, preceded by an action of Warning or Postponement. If the Commission had previously postponed a decision or placed the institution on Warning, the Commission may place the institution on Probation if it determines that the institution has failed to address satisfactorily the Commission's concerns in the prior action of postponement or warning regarding compliance with Commission standards. This action is accompanied by a request for a monitoring report, and a special visit follows. Probation may, but need not always, precede an action of Show Cause.

By federal regulation, the Commission must take immediate action to withdraw accreditation if an institution is out of compliance with accreditation standards for two years, unless the time is extended for good cause.

Show Cause: An institution is asked to demonstrate why its accreditation should not be withdrawn. A written report from the institution (including a teach out plan) and a follow-up team visit are required. The institution has the opportunity to appear before the Commission when the Commission meets to consider the institution's Show Cause status. Show Cause may occur during or at the end of the two-year Probation period, or at any time the Commission determines that an institution must demonstrate why its accreditation should not be withdrawn (i.e. Probation is not a necessary precursor to Show Cause).

Adverse Actions

Withdrawal of Accreditation: An institution's candidate or accredited status is withdrawn and with it, membership in the association. If the institution appeals this action, its accreditation remains in effect until the appeal is completed.

Denial of Accreditation: An institution is denied initial accreditation because it does not meet the Commission's requirements of affiliation or accreditation standards during the period allowed for candidacy. If the institution appeals this action, its candidacy remains in effect until the appeal is completed.

Appeal: The withdrawal or denial of candidacy or accreditation may be appealed. Institutions remain accredited (or candidates for accreditation) during the period of the appeal.

Other actions are described in the Commission policy, "Range of Commission Actions on Accreditation."

Statistical Reports-Certification Letter

Rensselaer

INSTITUTIONAL RESEARCH AND ASSESSMENT

September 10, 2015

National Architectural Accreditation Board
1101 Connecticut Avenue, NW
Suite 410
Washington, D.C. 20036

To Whom It May Concern:

By my signature below, I certify that to the best of my knowledge all statistical data submitted to NAAB in this report has been verified by the Institute and is consistent with Institutional reports to national and regional agencies, including the Integrated Postsecondary Education Data System of the National Center for Education Statistics.

Sincerely,

Jack Mahoney
Director of Institutional Research

Course Description Forms

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B. ARCH PROGRAM REQUIRED COURSES

PAGE NO.	PREFIX	NUMBER	COURSE NAME	FACULTY	SPCs
			FIRST YEAR FALL SEMESTER		
5	ARCH	2110	The Building & Thinking of Architecture 1 [parts replaced by ARCH-4100 & -4110 in 2015 - 16]	Bell	A.7, A.8
6	ARCH	2150	The Ethos of Architecture	Bell	A.7
7	ARCH	2160	Architectural Media	Titus	
8	ARCH	2510	Materials & Design	Comodromos	B.8
9	ARCH	2520	Digital Constructs 1	Dayem	
10	ARCH	2800	Architectural Design Studio 1	Titus	
			FIRST YEAR SPRING SEMESTER		
12	ARCH	2120	The Building & Thinking of Architecture 2 [parts replaced by ARCH-4100 & -4110 in 2015 - 16]	Bell	A.7, A.8
13	ARCH	2370	Energy, Comfort, & Ecology	Rempel	B.6
14	ARCH	2530	Digital Constructs 2	Dayem	
15	ARCH	2810	Architectural Design Studio 2	Titus	
16	ARCH	4090	Architectural Case Studies	Crembil	
17	ARCH	4120	Modernity in Culture, Civilization, & Architecture 1	Moran	
			SECOND YEAR FALL SEMESTER		
19	ARCH	2220	Architecture Design 2 [replaced by ARCH-2820 in fall 2015]	Combs	A.3, A.4, A.5, A.6, A.8, B.1, B.2
20	ARCH	2330	Structures 1	Markov	B.5
21	ARCH	2350	Construction Systems	Comodromos	B.7, B.8
22	ARCH	2540	Digital Constructs 3	Hower	
23	ARCH	2820	Architectural Design Studio 3 [replaces ARCH-2220 beginning in fall 2015]	Bell	A.3, A.4, A.5, A.6, A.8, B.1, B.2
24	ARCH	4100	An Architectural Genealogy 1 [replaces parts of ARCH-2110 & -2120]	Bell	A.7, A.8
25	ARCH	4130	Modernity in Culture, Civilization, & Architecture 2	Kallipoliti	
			SECOND YEAR SPRING SEMESTER		
27	ARCH	2140	The Building & Thinking of Architecture 3 {taught for the final time in spring 2015]	Moran	
28	ARCH	2230	Architecture Design 3 [will be replaced by ARCH-2830 in spring 2016]	Dayem	A.4, A.5, A.6, B.2
29	ARCH	2360	Environmental & Ecological Systems	Rempel	B.6
30	ARCH	2550	Digital Constructs 4 [will not be taught until spring 2016]	Hower	
31	ARCH	2830	Architectural Design Studio 4 [replaces ARCH-2230 beginning in spring 2016]	Bell	A.4, A.5, A.6, B.2
32	ARCH	4110	An Architectural Genealogy 2 [replaces parts of ARCH-2110 & -2120]	Bell	A.7, A.8
			THIRD YEAR FALL SEMESTER		
34	ARCH	4140	Modernity in Culture & Architecture [taught for the final time in fall 2015]	Kallipoliti	
35	ARCH	4240	Architecture Design 4 [replaced in 2016-17 by ARCH-4770]	multiple options	
36	ARCH	4240	Architecture Design 4 [replaced in 2016-17 by ARCH-4770]	Joachim/Fessel	
37	ARCH	4240	Architecture Design 4 [replaced in 2016-17 by ARCH-4770]	Oatman	
38	ARCH	4240	Architecture Design 4 [replaced in 2016-17 by ARCH-4770]	Oksiuta	
39	ARCH	4240.5	Architecture Design 4 [Rome-2014] [replaced in 2016-17 by ARCH-4770.5]	Perez-Guembe	
40	ARCH	4240.5	Architecture Design 4 [Rome-2015] [replaced in 2016-17 by ARCH-4770.5]	Oksiuta	
41	ARCH	4240.8	Architecture Design 4 [CASE] [replaced in 2016-17 by ARCH-4770.8]	Comodromos	
42	ARCH	4330	Structures 2	Markov	B.5
43	ARCH	4820	Integrated Design Schematic Studio [will replace ARCH-4963 in fall 2016]	Combs	A.2, A.3, A.4, A.5, A.6, B.1, B.2, B.3, C.2, C.3
44	ARCH	4963	Integrated Design Schematic [replaced by ARCH-4820 in fall 2016]	Krueger	A.2, A.3, A.4, A.5, A.6, B.1, B.2, B.3, C.2, C.3
			THIRD YEAR SPRING SEMESTER		
46	ARCH	2130	Contemporary Design Approaches {becomes ARCH-4150 - spring 2017]	Moran	
47	ARCH	4250	Architecture Design 5 [replaced in 2016-17 by ARCH-4780]	multiple options	
48	ARCH	4250	Architecture Design 5 [replaced in 2016-17 by ARCH-4780]	Oatman	
49	ARCH	4250	Architecture Design 5 [replaced in 2016-17 by ARCH-4780]	Oksiuta	
50	ARCH	4250.6	Architecture Design 5 [China] [replaced in 2016-17 by ARCH-4780.6]	Stover	
51	ARCH	4250.7	Architecture Design 5 [India] [replaced in 2016-17 by ARCH-4780.7]	Bell	
52	ARCH	4250.8	Architecture Design 5 [CASE] [replaced in 2016-17 by ARCH-4780.8]	Comodromos	
53	ARCH	4540	Professional Practice 1	Reilly	B.3, B.4, D.1, D.2, D.4, D.5
54	ARCH	4560	Materials & Enclosure [will move to 3rd-year fall semester in 2016]	Comodromos	B.7, B.8
55	ARCH	4740	Building Systems & Environment	Holmes	B.6, B.9, B.10
56	ARCH	4830	Intgrated Design Development Studio [will replace ARCH-4300 beginning 2017]	Mistur	A.1, A.2, B.1, B.3, B.4, B.5, B.9, C.2, C.3
			FOURTH YEAR FALL SEMESTER		
58	ARCH	4050	Cities & Their Territories	Moran	
59	ARCH	4260	Architecture Design 6 [replaced in 2016-17 by ARCH-4790]	multiple options	
60	ARCH	4260	Architecture Design 6 [replaced in 2016-17 by ARCH-4790]	Joachim/Fessel	
61	ARCH	4260	Architecture Design 6 [replaced in 2016-17 by ARCH-4790]	Oatman	
62	ARCH	4260	Architecture Design 6 [replaced in 2016-17 by ARCH-4790]	Oksiuta	
63	ARCH	4260.5	Architecture Design 4 [Rome-2014] [replaced in 2016-17 by ARCH-4770.5]	Perez-Guembe	
64	ARCH	4260.5	Architecture Design 6 [Rome-2015] [replaced in 2016-17 by ARCH-4790.5]	Oksiuta	
65	ARCH	4260.8	Architecture Design 6 [CASE] [replaced in 2016-17 by ARCH-4790.8]	Comodromos	
66	ARCH	4300	Design Development [replaced by ARCH-4830 in 2017]	Mistur	A.1, A.2, B.1, B.3, B.4, B.5, B.9, C.2, C.3
67	ARCH	4540	Professional Practice 1	Reilly	B.3, B.4, D.1, D.2, D.4, D.5
68	ARCH	4690	Case Studies [taught for the final time in fall 2015]	Combs	A.1, C.1
			FOURTH YEAR SPRING SEMESTER		
70	ARCH	4040	Cities/Lands [taught for the final time in spring 2014]	Ghoche	
71	ARCH	4260	Architecture Design 6 [replaced in 2016-17 by ARCH-4790]	multiple options	
72	ARCH	4260	Architecture Design 6 [replaced in 2016-17 by ARCH-4790]	Oatman	
73	ARCH	4260	Architecture Design 6 [replaced in 2016-17 by ARCH-4790]	Oksiuta	
74	ARCH	4260.6	Architecture Design 6 [China] [replaced in 2016-17 by ARCH-4790.6]	Stover	
75	ARCH	4260.7	Architecture Design 6 [India] [replaced in 2016-17 by ARCH-4790.7]	Bell	
76	ARCH	4260.8	Architecture Design 6 [CASE] [replaced in 2016-17 by ARCH-4790.8]	Comodromos	
77	ARCH	4300	Design Development [replaced by ARCH-4830 in 2017]	Mistur	A.1, A.2, B.1, B.3, B.4, B.5, B.9, C.2, C.3
78	ARCH	4540	Professional Practice 1	Reilly	B.3, B.4, D.1, D.2, D.4, D.5
			FIFTH YEAR FALL SEMESTER		
80	ARCH	4550	Professional Practice 2	Peckham	B.10, D,1, D.2, D.3, D.4, D.5
81	ARCH	4790	Architectural Design Studio 7 [replaced ARCH-4980 in fall 2016]	multiple options	
82	ARCH	4910	Final Project Design Research Seminar	Staff	C.1
83	ARCH	4980	B. Arch Final Project 1 [replaced by ARCH-4790 in fall 2016]	Perry	
84	ARCH	4981	Methods Seminar [replaced in fall 2016 by ARCH-4919]	Moran	C.1
			FIFTH YEAR SPRING SEMESTER		
86	ARCH	4590	The Economics of Architecture [will not be taught with ARCH designation until S 2019]	TBA	B.10, D.3
87	ARCH	4990	B. Arch Final Project 2 [replaced by new ARCH-4920 in spring 2017]	Perry	A.1, A.2, A.3
88	ARCH	4920	B. Arch Final Project [replaces existing ARCH-4990 in spring 2017]	Perry	A.1, A.2, A.3

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PROFESSIONAL ELECTIVES

PAGE NO.	PREFIX	NUMBER	COURSE NAME	FACULTY	SPCs
90	ARCH	4010	Sensory Culture	Krueger	
91	ARCH/CIVL	4020	Bedford Seminar - Advanced Building Structures	Laufs	
92	ARCH	4070	Topics: Twisted Siblings -- Relationship btw Contemporary Painting & Architecture	Titus	
93	ARCH	4170.8	Environmental Parametrics	Comodromos	
94	LGHT	4230	Lighting Design	Brons & Rizzo	
95	ARCH	4340	Topics: Structural Morphology	Markov	
96	ARCH	4580.8	Topics: Materials & Systems Production	Diniz	
97	ARCH	4730	Topics: Sustainable Building Design Strategies	Holmes	
98	ARCH	4750	Topics: Sustainable Building Design Metrics	Holmes	
99	LGHT	4770	Lighting Technology & Applications	Freyssinier & Bierman	
100	ARCH	4840	Architectural Acoustics 1	Brooks	
101	LGHT	4840	Human Factors in Lighting	Figueiro	
102	ARCH	4850	Architectural Acoustics 2	Brooks	
103	ARCH	4860	Topics: Applied Psychoacoustics	Braasch	
104	ARCH	4931	Topics: The Man Next Door-A. Hitchcock & the Architecture of Fear	Oatman	
105	ARCH	4936.8	Topics: Research Investigations	Draper	
106	ARCH	4960	Topics: Bioclimatic Design	Rempel	
107	ARCH	4960	Topics:Production, Installation, Performance Planning Seminar	Krueger	
108	ARCH	4960	Topics: Self-Organizing Spaces	Oksiuta	
109	ARCH	4961	Topics: Duchamp Seminar	Oatman	
110	ARCH	4961	Topics: Research Seminar in Universal Design	Krueger	
111	ARCH	4961	Topics: Latin American Architecture	Crembil	
112	ARCH	4964	Topics: Sculpting the Intangible	Perez-Guembe	
113	ARCH	4964	Topics: Line as Technique & Too Many Vectors	De Luna	
114	ARCH	4964.5	Topics: Sculpting the Intangible [Rome]	Perez-Guembe	
115	ARCH	4964.5	Topics: Form & Emptiness - Matter & Information [Rome]	Oksiuta	
116	ARCH	4965.7	India Discovery [India]	Bell	
117	ARCH	4966.6	Chinese Architecture & Urbanism [China]	Stover	
118	ARCH	4967	Tool Theory	Krueger	
119	ARCH	4967	Topics: Robotic Material Assemblies	Ngai	
120	ARCH	4968	Architecture in the Time of Synthetic Biology	Oksiuta	
121	ARCH	4976.7	Topics: The Ineffable Space of Le Corbusier	Bell	
122	ARCH	6310.8	Environmental History & Theory [CASE]	Dyson	
123	ARCH	6330.8	Built Ecologies 2 [CASE]	Dyson	
124	LGHT	6760	Lighting Workshop	Leslie	
125	LGHT	6770	Light & Health	Figueiro	
126	ARCH	6840	Engineering Acoustics	Xiang	
127	ARCH	6860	Topics: Applied Psychoacoustics [grad only]	Braasch	
128	ARCH	6870	Sonics Research Lab 1	Xiang	
129	ARCH	6880	Sonics Rfesearch Lab 2	Xiang	
130	ARCH	6890	Aural Architecture	Braasch	
131	ARCH	6940.8	Interdisciplinary Research Studio [CASE]	Draper & Dyson	
132	ARCH	6962.8	Advanced Int. Systems Prototype Development [CASE]	Draper	

M. ARCH REQUIRED COURSES

PAGE NO.	PREFIX	NUMBER	COURSE NAME	FACULTY	SPCs
			FIRST YEAR FALL SEMESTER		
134	ARCH	2620	Graduate Architecture Design 2 [replaced by ARCH-5200 in fall 2015]	Combs	A.4, A.5, A.6, B.2
135	ARCH	5100	History, Theory, Criticism 1 [co-listed with ARCH-4100 & -4130]	Bell & Kallipoliti	A.7, A.8
136	ARCH	5140	Structures 1 [folded into ARCH-2330]	Markov	B.5
137	ARCH	5160	Digital Constructs 1 [co-listed with ARCH-2540]	Hower	
138	ARCH	5200	Graduate Architecture Design 1 [replaces ARCH-2620 in fall 2015]	Bell	A.3, A.4, A.5, A.6, A.8, B.1, B.2
139	ARCH	5300	Materials & Constuction Systems [a composite of ARCH-2510 & -2350]	Comodromos	B.7, B.8
			FIRST YEAR SPRING SEMESTER		
141	ARCH	2630	Graduate Architecture Design 3 [ARCH-5210 will replace it in spring 2016]	Dayem	A.4, A.5, A.6, B.2
142	ARCH	5110	History, Theory, Criticism 2 [co-listed with ARCH-4110 & -4120]	Bell & Kallipoliti	A.7, A.8
143	ARCH	5170	Digital Constructs 2 [co-listed with ARCH-2550] [taught beginning spring 2016]	Hower	
144	ARCH	5210	Graduate Architecture Design 2 [replaces Arch-2630 in spring 2016]	Bell	A.4, A.5, A.6, B.2
145	ARCH	5310	Environmental & Ecological Systems [co-listed with ARCH-2360]	Rempel	B.6
146	ARCH	5330	Economics & Architecture [begins spring 2019 - course in Mgmnt School TBA until]	TBA	B.10, D.3
			SECOND YEAR FALL SEMESTER		
148	ARCH	4360.8	Graduate Architecture Design 4 [CASE] [replaced by ARCH-6610.8 in fall 2016 & becomes GAD3]	Comodromos	A.2, A.3, A.4, A.5, B.1, C.2, C.3
149	ARCH	5150	Structures 2 [co-listed with ARCH-4330]	Markov	B.5
150	ARCH	6320	Built Ecologies 1	Rempel	
151	ARCH	6370.8	Environmental Parametrics Workshop [CASE] [last taught fall 2014 - replaced by ARCH-6380.8]	Comodromos	
152	ARCH	6380.8	Environmental Parametrics [CASE] [replaces ARCH-6370.8 in fall 2015]	Comodromos	
153	ARCH	6610.8	Graduate Architecture Design 3 [CASE] [replaces ARCH-4360.8 in fall 2016]	Comodromos	A.2, A.3, A.4, A.5, B.1, C.2, C.3
154	ARCH	6810.81	Research Design Seminar [CASE]	Draper/Dyson	
			SECOND YEAR SPRING SEMESTER		
155	ARCH	4300*	Design Development [will become ARCH-6630 in 2017 & co-listed with ARCH-4830]*	Mistur	A.1, A.2, B.1, B.3, B.4, B.5, B.9, C.2, C.3
	NOTE>>>>		* The ARCH-4300 number for this course in the catalog is incorrect; this will be corrected by spring 2016.		
156	ARCH	4560	Materials & Enclosure [will become ARCH-5340 and be taught in fall beginning 2017]	Comodromos	B.7, B.8
157	ARCH	5360	Building Systems & Environment [co-listed with ARCH-4740]	Holmes	B.6, B.9, B.10
158	ARCH	5380	Professional Practice 1 [co-listed with ARCH-4540]	Reilly	B.3, B.4, D.1, D.2, D.4, D.5
159	ARCH	6620	Graduate Architecture Design 4 [co-listed with ARCH-4820 & begins spring 2016]	Krueger	A.2, A.3, A.4, A.5, A.6, B.1, B.2, B.3, C.2, C.3
160	ARCH	6680	History, Theory, Criticism 3 [begins spring 2016] co-listed with ARCH-4090 & -2130]	Crembil & TBA	
			THIRD YEAR FALL SEMESTER		
162	ARCH	4140	Modernity in Culture & Architecture [taught for the last time in fall 2015]	Kallipoliti	
163	ARCH	5340	Materials & Enclosure [co-listed with ARCH-4560] starts in fall 2017	Comodromos	B.7, B.8
164	ARCH	5380	Professional Practice 1 [co-listed with ARCH-4540]	Reilly	B.3, B.4, D.1, D.2, D.4, D.5
165	ARCH	6630	Graduate Architecture Design 5 [former ARCH-4300, replaces ARCH-6980 in fall 2016]	Mistur	A.1, A.2, B.1, B.3, B.4, B.5, B.9, C.2, C.3
166	ARCH	6750	Final Project Research Seminar [replaces ARCH-6981 in fall 2016]	TBA	C.1
167	ARCH	6980	Master's Project [replaced by ARCH-6630 in fall 2016]	Perry	
168	ARCH	6981	Methods Seminar [replaced by ARCH-6750 in fall 2016]	Moran	C.1
			THIRD YEAR SPRING SEMESTER		
170	ARCH	5390	Professional Practice 2 [co-listed with ARCH-4550]	Peckham	B.10, D,1, D.2, D.3, D.4, D.5
171	ARCH	6948	Graduate Final Project [replaces ARCH-6980 beginning in spring 2017]	Perry	A.1, A.2, A.3, C.1
173	ARCH	6980	Masters Project [replaced by ARCH-6948 in spring 2017]	Perry	A.1, A.2, A.3, C.1

B. ARCH REQUIRED COURSES
1ST-YEAR FALL SEMESTER

ARCH-2110: The Building and Thinking of Architecture 1* (4 credits)

Course Description: This course addresses the history and theory of architecture in both western and non-western civilizations [Egypt, Greece, Rome, Late Antiquity, Islam, India].

Course Goals and Objectives: Students who have successfully completed this course will be able to demonstrate:
1. the ability through comparison and contrast to analyze and differentiate between various approaches to building.
2. a rudimentary skill in diagramming diverse formal and spatial characteristics of architecture.
3. an ability to evaluate the relationship between different intellectual perspectives and their architectural consequences .to apply their knowledge to discern the architectural characteristics of differing historical and cultural contexts.
4. a capacity to write about selected architectural phenomena in their own words.
5. a capacity to discern and analyze basic principles of architectural order..

Student Performance Criterion/a addressed (list number and title): A.7: History and Global Culture, A.8: Cultural Diversity and Social Equity [partial]

Topical Outline (include percentage of time in course spent in each subject area):
1. ancient Egypt: 12%
2. ancient Greece: 28%
3. ancient Rome: 20%
4. Late Antiquity: 12%
5. Islam: 16%
6. India: 12%

Prerequisites: none

Textbooks/Learning Resources: The instructor provides 500+ pages of his own illustrated text.

Offered (semester and year): fall semester annually*

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): David Bell

* The final iteration of this course was fall 2013 and in the curriculum revision of 2014, its content was divided between ARCH-4100 & ARCH-4110, An Architectural Genealogy 1 & 2.

ARCH-2150: The Ethos of Architecture (2 credits)

Course Description: This course examines architectural phenomena and ideas without a specific chronology using examples ranging from antiquity to the contemporary world in western and non-western civilizations.

Course Goals and Objectives:
Students who successfully complete this course will be able to:
1. write thoughtfully and coherently on the parallel and divergent histories of architecture and the cultural norms of a variety of indigenous, vernacular, local, and regional settings in terms of their political, economic, social, ecological, and technological factors. [SPC A.7]
2. demonstrate a knowledge of architecture as a phenomenon of individual buildings, urban situations, and the larger landscape.
3. demonstrate a fundamental grasp of both the terminology and essential concepts that underlie the discipline of architecture as a form of thought.
4. demonstrate an ability to represent architectural concepts at a fundamental level.
5. demonstrate through writing and diagramming the relationship of the past to concerns of the present and future with respect to the built environment.

Student Performance Criterion/a addressed (list number and title): A.7: Historical Traditions & Global Culture

Topical Outline (include percentage of time in course spent in each subject area):
1. What Is an Ethos?, 7.7%,
2. Frank Lloyd Wright, 7.7%,
3. What Is Order?, 7.7%,
4. Adolf Loos, 7.7%,
5. Parameters of Architectural Order, 7.7%,
6. Ludwig Mies van der Rohe, 7.7%,
7. Urbanity, 7.7%,
8. Le Corbusier, 7.7%,
9. The Metropolis, 7.7%,
10. Alvar Aalto, 7.7%,
11. Urban Territory, 7.7%
12. Louis Kahn, 7.7%,
13. Rem Koolhaas, 7.7%

Prerequisites: None

Textbooks/Learning Resources:
Instructor's course notes, Paul Valéry's *Eupalinos, or the Architect*, Bell, David: "The Carpenter's Apprentice", Bell, David: "The Irritation of Architecture",,Bell, David: "The Panoptic Garden", Colquhoun, Alan: "Three Kinds of Historicism", Corner, James: "Eidetic Operations and New Landscapes", Duany, Andres and Emily Talen; "Looking Backward", Eisenman, Peter, "The End of the Classical", Eisenman, Peter, "Post-Functionalism", Evans, Robin, "Mies van der Rohe's Paradoxical Symmetries", Frascari, Marco, "The Tell-the-Tale Detail", Koolhaas, Rem, "The Generic City", Pallasmaa, Juhani, "The Geometry of Feeling", Rowe, Colin, "The Mathematics of the Ideal Villa", Rowe, Colin and Fred Koetter, "Collage City", Tschumi, Bernard, "The Pleasure of Architecture", Wall, Alex, "Programming the Urban Surface"

Offered (semester and year): fall semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): David Bell

ARCH-2160: Architectural Media (2 Credits)

Course Description:
This course focuses especially on the implications that various media and means of representation have on the breadth of concerns within the generation of architecture.

Course Goals and Objectives: The intent of this course is:
1. to introduce students to how various media are used in the design and production of architecture.
2. to introduce students to ways of assessing critically in both verbal and graphic means the theories and their implications of various media for both the design and representation of architecture and architectural ideas.
3. to introduce students to writing and discussing knowledgeably the history and theory of media in architecture.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
The topical outline of the course relates to the course goals and objectives listed above. The course divides its time in the following manner:
30% on course objective one
30% on course objective two
40% on course objective three

Prerequisites: ARCH-2150

Textbooks/Learning Resources:
Practice – *Architecture, Technique and Representation*, Stan Allen
Models – *Architecture and the Miniature*, Mark Morris

Offered (semester and year): fall semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Anthony Titus

ARCH-2510 : Materials and Design (2 credits)

Course Description: This course provides a basic understanding of material(ity), form and figuration in basic structural loading, and the synergy of the two through assemblage.

Course Goals and Objectives:
1. Introduce basic structural principles including understanding of forces, structural systems and how they distribute and resist forces, sectional properties and relationship to material properties.
2. Introduce first principles of the physical properties of materials. Learn how nternal composition of materials relates to basic properties.
3. Introduce methodologies for material selection, use and deployment based on performance and fitness for use.
4. Gather actual materials in order to directly engage—compare, + contrast materials
5. Document materials *in-situ* in various states—i.e., natural, processed, ephemeral as we.
6. Introduce the concept of material life-cycle(s)
7. Introduce the concept of *assemblage* as the synergy of material fitness + structural configuration
Outcomes
1. Fundamentals of basic structural properties. Develop “know-how” and intuition developed through active testing + experimentation of various structural loading types + effect on figuration of structural systems.
2. Fundamental, ‘first principles’ approach to materials + materiality. Focus on properties, uses, and implications of common materials, + generating the ”know-how” for design to emerge from a critical engagement of a material.
3. Synthesis of knowledge of materials + structural properties through engagement with performance authorship + assembly. The open questions that arise from the connection + assembly of two different elements/materials, and how this affords design potential + opportunity.

Student Performance Criterion/a addressed (list number and title): B.8: Building Materials & Assemblies

Topical Outline (include percentage of time in course spent in each subject area):
The primary aim of the course will be to develop a “know how” of materiality (33.33% of the course time)
structure (33.33% of the course time)
assemblage (33.34% of the course time)
through a series of “hands-on” interrogations and research presentations. These exercises will identify the tactics we as architects deploy to assess and engage the resistances intrinsic to these three primary subjects, and how they can afford an affective/effective departure for design.

Prerequisites: none

Textbooks/Learning Resources:
Ching, Franics D.K., *Building Construction Illustrated*, Hoboken: John Wiley and Sons, 2008.

Offered (semester and year): fall annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Demetrios Comodromos**,** Ajmal Aqtash

ARCH-2520: Digital Constructs 1 (2 credits)

Course Description (limit 25 words): The primary goal of the course is to give beginning architecture students the skills to generate and communicate sophisticated architectural concepts through drawing.

Course Goals and Objectives: The main course objective is to gain proficiency in two and three-dimensional digital environments. Students acquire expertise in Rhinoceros, Adobe Illustrator, Adobe Photoshop, and V-Ray. A series of weekly exercises cover a range of technical drawing techniques in a digital environment. The final project uses skills learned in the weekly exercises to produce more speculative drawings. The final deliverables for the course are complex, rigorously produced drawings that demonstrate the student's mastery of all drawing tools and techniques introduced during the semester. These drawings must stand alone as a creatively authored work.

Student Performance Criterion/a addressed (list number and title): none assigned to this course.

Topical Outline (include percentage of time in course spent in each subject area):
Week 1 – Week 3: Two-dimensional projection systems, 13.33%
Week 4 – Week 6: Three-dimensional projection systems, transformational systems, 13.33%
Week 7: Midterm review, 6.67%
Week 8 – Week 10: Three-dimensional modeling, 13.33%
Week 11 – Week 14: Visualization and graphics, 26.67%
Week 15: Final review, 6.67%n

Prerequisites: None.

Textbooks/Learning Resources: Digital demonstrations are accompanied by lectures and discussions on the conceptual roles of drawing in architecture. Example files are distributed to the students digitally. Handouts outlining specific techniques and deliverables for each week supplement the course syllabus

Offered (semester and year): fall semesters annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Adam Dayem

ARCH-2800: Architectural Design Studio 1 (5 credits)

Course Description: This course introduces students to design as a way of thinking and making through projects that stress critical and creative thinking, communication, and visualization.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. Demonstrate the ability to create and manipulate fundamental forms and spaces using a variety of materials.
2. Demonstrate a basic knowledge of how various geometric forms and spaces are joined together.
3. Use graphic information to generate form and space.
4. Represent coherently and intelligibly their ideas and the physical results of their ideas through drawing, physical model making, basic digital skills, and other non-verbal means of communication.

Student Performance Criterion/a addressed (list number and title): none assigned to this course.

Topical Outline (include percentage of time in course spent in each subject area):
The topical outline of the course relates to the course goals and objectives listed above. The course divides its time in the following manner:
20% on course objective one
20% on course objective two
30% on course objective three
30% on course objective four

Prerequisites: none

Textbooks/Learning Resources:
Practice – *Architecture, Technique and Representation*, Stan Allen
Models – *Architecture and the Miniature*, Mark Morris

Offered (semester and year): fall semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Anthony Titus (Coordinator)**,** Adam Dayem**,** Yael Erel**,** Serban Ionescu**,** Edwin Liu**,** Sefano Passeri

B. ARCH REQUIRED COURSES
1ST-YEAR SPRING SEMESTER

ARCH-2120: The Building and Thinking of Architecture 2* (2 credits)

Course Description: This course addresses the history and theory of architecture in both western and non-western civilizations [Romanesque, Gothic, Renaissance, and China].

Course Goals and Objectives: Students who have successfully completed this course will be able to demonstrate:
1. the ability through comparison and contrast to analyze and differentiate between various approaches to building.
2. a rudimentary skill in diagramming diverse formal and spatial characteristics of architecture.
3. an ability to evaluate the relationship between different intellectual perspectives and their architectural consequences .to apply their knowledge to discern the architectural characteristics of differing historical and cultural contexts.
4. a capacity to write about selected architectural phenomena in their own words.
5. a capacity to discern and analyze basic principles of architectural order.

Student Performance Criterion/a addressed (list number and title): A.7: History and Global Culture, A.8: Cultural Diversity and Social Equity [partial]

Topical Outline (include percentage of time in course spent in each subject area):
Romanesque: 28%
Gothic: 29%
Renaissance: 28%
China: 15%

Prerequisites: ARCH-2110

Textbooks/Learning Resources: The instructor provides 250+ pages of his own illustrated text.

Offered (semester and year): spring semester annually*

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): David Bell

* The final iteration of this course was spring 2014 and in the curriculum revision of 2014, its content was divided between ARCH-4100 & ARCH-4110, An Architectural Genealogy 1 & 2.

ARCH-2370: Energy, Comfort, & Ecology (2 credits)

Course Description: This course provides pre-requisite material for ARCH 2360, including climate and microclimate analysis, heat transfer, thermal comfort, and principles of ecology.

Course Goals and Objectives: Students who complete this course successfully will be able to:
1. demonstrate a knowledge of fundamental principles of thermodynamics, site design, and psychrometrics by performance on examinations.
2. demonstrate the ability to apply sustainability and ecological principles to design projects.
3. demonstrate a basic capacity to use energy modeling to evaluate design alternatives.

Student Performance Criterion/a addressed (list number and title): B.6: Environmental Systems

Topical Outline (include percentage of time in course spent in each subject area):
1. Vernacular architecture (10%)
2. Fuels (10%)
3. Classical ecology (10%)
4. Architectural ecology (10%)
5. Heat transfer (10%)
6. Thermal comfort (10%)
7. Thermal envelopes (10%)
8. Climates (10%)
9. Solar geometry (10%)
10. Water and design (10%)

Prerequisites: none

Textbooks/Learning Resources: Lechner, *Heating, Cooling, Lighting*, 4th edition (2014)

Offered (semester and year): spring semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Alexandra Rempel

ARCH-2530: Digital Constructs 2 (2 credits)

Course Description (limit 25 words): The primary goal of the course is to give beginning architecture students the skills to generate and communicate sophisticated architectural concepts through drawing.

Course Goals and Objectives: The main course objectives are to build on the two and three-dimensional digital skills introduced in Digital Constructs 1; to explore relationships between digital design and fabrication; to explore and discuss parametric and algorithmic ways of working in design; and to demonstrate the importance of procedural thinking when using digital tools to produce complexity. Skills in Rhino, Grasshopper, V-Ray, Illustrator, and Photoshop are acquired.

Student Performance Criterion/a addressed (list number and title): none assigned to this course.

Topical Outline (include percentage of time in course spent in each subject area):
Week 1 – Week 3: Grasshopper basics, 20%
Week 4 – Week 5: Curvature modeling, 13.33%.
Week 6 – Week 7: Parametric systems, digital fabrication, 13.33%.
Week 8: Midterm review, 6.67%.
Week 9 – Week 12: Algorithmic systems, 13.33%
Week 13 – Week 14: Graphics and visualization, 13.33%
Week 15: Final review, 6.67%

Prerequisites: ARCH-2520

Textbooks/Learning Resources: Digital demonstrations are accompanied by lectures and discussions on the conceptual roles of drawing in architecture. Example files are distributed to the students digitally. Handouts outlining specific techniques and deliverables for each week supplement the course syllabus

Offered (semester and year): spring semesters annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Adam Dayem

ARCH-2810: Architecture Design Studio 2 (5 credits)

Course Description: This course approaches architectural design issues of technology, materiality, abstraction, tectonics, and theory to consider issues of site, context, situation, and simple program.

Course Goals and Objectives: Students who successfully complete this course will be able to:

1. Demonstrate how various geometric forms and spaces are joined together.
2. Use graphic information to generate form and space with respect to contextual and situational concerns.
3. Represent coherently and intelligibly their ideas and the physical results of their ideas through drawing, physical model-making, increased digital skills, and other non-verbal means of communication.

Student Performance Criterion/a addressed (list number and title): none assigned to this course.

Topical Outline (include percentage of time in course spent in each subject area):
The topical outline of the course relates to the course goals and objectives listed above. The course divides its time in the following manner:
30 percent of time on course objective one
30 percent of time on course objective two
40 percent of time on course objective three

Prerequisites: ARCH-2800

Textbooks/Learning Resources:
Practice – Architecture, Technique and Representation, author Stan Allen
Models – Architecture and the Miniature, author Mark Morris PhD.

Offered (semester and year): spring semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit):
Anthony Titus, Yael Erel, Serban Ionescu, Michael Oatman, Farzam Yazdenseta

ARCH-4090: Architectural Case Studies (2 credits)

Course Description: A select number of sophisticated modern and contemporary buildings are analyzed critically to ascertain the significant relationships of the systems of order inherent to them.

Course Goals and Objectives: Upon successful completion of this course the student will have improved his/her critical thinking and representation skills and demonstrate:
1. an ability to write and speak effectively and use representational media appropriate for both within the profession and with the general public.
2. an ability to gather, assess, record, and comparatively evaluate relevant information and performance in order to support conclusions related to a specific project or assignment.
3. an ability to apply the fundamentals of both natural and formal ordering systems and the capacity of each to inform two- and three-dimensional design.
4. an ability to observe and develop a preliminary analysis of an architectural artifact, synthesizing the observations of others, and constructing critical conclusions. He/she will understand how to investigate buildings in their larger physical, social, and professional contexts and be able to articulate the cultural and architectural knowledge embedded within them.
5. an ability to clearly, compellingly, and succinctly document and describe the visible and invisible aspect of an architectural case, graphically, in writing form and oral presentation – with respect to the affect its physical, spatial, and material form has on the experience of its users, the profession and society, as well as their influence(s) on it.
6. an ability to demonstrate a working knowledge of the use of citations and attributions in scholarly writing and presentations

Student Performance Criterion/a addressed (list number and title): none assigned to this course.

Topical Outline (include percentage of time in course spent in each subject area):
Research & Documentation (25%)
Deconstruction & Analysis (35%)
Complementary Research & Presentation Development (40%)

Prerequisites: ARCH-2160

Textbooks/Learning Resources:
1. Drawings, Images and Texts by the project's author(s), as published in monographs, dedicated publications and architects' own websites. Initial list provided by faculty
2. Literature and Text about the building by others (academic journals, professional and industry publications)
3. Selected Online Sources (approved by faculty)

Offered (semester and year): spring semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Gustavo Crembil

ARCH-4120: Modernity in Culture, Civilization, and Architecture 1 (2 credits)

Course Description: This course examines the ideas, theories, and practices that contributed to the rise of modernity in the western world and eventually on a global scale.

Course Goals and Objectives: Upon successful completion of this course, the student will be able to
1. identify, analyze and explain the major architectural movements, theories, and projects of modern civilization as they evolved in relation to their respective cultural and historical frameworks.
2. analyze architecture and architectural theories related to the modern movement through texts and images.
3. demonstrate through writing and test responses how buildings and urban spaces are both informed by but also inform cultural, philosophical, religious, political and economic forces in western, non-western, and global civilizations.
4. communicate coherently both orally and in writing the architectural ideas of the visual and verbal vocabularies of the many manifestations of modern architecture and its historical precursors.
5. develop through research and critical thinking meaningful theses in writing and the course exams with respect to specific architecturally significant buildings and concepts identified in class and the required readings.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
The Origins of Modernity, 14.3%, Industrialization and its Discontents, 14.3%, Metropolis & Modernity, 14.3%, The Garden in the City, 14.3%, Modernism & Manifesto, 14.3%, Modernism and Mass Production, 14.3%, L'Esprit Nouveau, 14.3%

Prerequisites: ARCH-2160

Textbooks/Learning Resources: Kenneth Frampton, *Modern Architecture: A Critical History*, Barry Bergdoll, *European Architecture 1750-1890*, Joseph Rykwert, *The First Moderns*, and numerous primary sources that vary each semester.

Offered (semester and year): spring semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Lydia Kallipoliti (current), Brendan Moran, Ralph Ghoche

B. ARCH REQUIRED COURSES
2nd-YEAR FALL SEMESTER

ARCH-2220 Architecture Design 2* (6 credits)

Course Description (limit 25 words): This fall semester second-year studio focuses on site design, public, and institutional design in the form of exhibition space, artist studios, and residencies.

Course Goals and Objectives: Students who complete this studio will be able to demonstrate
1. the ability to gather, assess, record, and comparatively evaluate relevant information and performance in order to support conclusions related to a specific project or assignment.
2. the ability to effectively use basic formal, organizational, and environmental principles and the capacity of each to inform two- and three-dimensional design.
3. the ability to apply the fundamentals of both natural and formal ordering systems and the capacity of each to inform two- and three-dimensional design.
4. the ability to examine and comprehend the fundamental principles present in relevant precedents and to make informed choices about the incorporation of such principles into architecture and urban design projects.
5. the ability to prepare a comprehensive program for an architectural project that includes an assessment of client and user needs; an inventory of spaces and their requirements; an analysis of site conditions (including existing buildings); and a definition of site selection and design assessment criteria.
6. The ability to respond to site characteristics, including urban context and developmental patterning, historical fabric, soil, topography, ecology, climate, and building orientation, in the development of a project design.

Student Performance Criterion/a addressed (list number and title): A.3: Investigative Skills, A.4: Architectural Design Skills**,** A.5: Ordering Systems, A.6: Use of Precedents, A.8: Cultural Diversity & Social Equity**,** B.1: Pre-Design [partial]**,** B.2: Site Design

Topical Outline (include percentage of time in course spent in each subject area):
1. Analysis (of assigned art and artists residency precedents) and site Research: 25%
2. Preliminary design intervention in landscape (design study: 25%
3. New Residency and art center for OMI International Arts Center: 50%

Prerequisites: ARCH-2210 in the old curriculum

Textbooks/Learning Resources: This course relies on the distribution of assigned readings, assignment of precedent references and proximity to the proposed site of the design studio and access to the client stakeholders at the OMI International Arts Center.

Offered (semester and year): fall 2014*

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Lonn Combs, David Bell, Fleet Hower, Murat Mutlu, Kyle Stover

*This studio is being replaced by ARCH-2820 in fall 2015.

ARCH-2330: Structures 1* (3 credits)

Course Description: This course demonstrates basic principles of statics and mechanics of structural elements such as beams, columns, frames, and trusses, and fundamental selection of structural systems.

Course Goals and Objectives: Students who successfully complete this course will demonstrate the ability to
1. understand the rule-of-thumb dimensions and selections of contemporary structural systems.
2. understand the basic principles of structural stability and behavior in withstanding gravity and lateral forces.
3. understand principles of statics and mechanics and basic structural analyses of beams, columns, frames, and trusses.
4. build and load test architecturally creative and structurally sound physical models to visualize structural behavior and cultivate structural intuition.

Student Performance Criterion/a addressed: B.5: Structural Systems

Topical Outline:

1. Introduction to Structures and Structural Systems	30%
2. Structural Mechanics	15%
3. Analysis of Structural Elements	35%
4. Principles of Structural Design	20%

Prerequisites: ARCH 2510

Textbooks/Learning Resources: Schodek, D., and M. Bechthold, *Structures,* Prentice Hall. (textbook)
Hibbeler R.C.," Structural Analysis," Prentice Hall.
Onouye B.," Statics and Strength of Materials," Prentice Hall.
MacDonald A., " Structure and Architecture" Architectural Press.
Hanaor A.," Principles of Structures," Blackwell Science.
Sandaker, Eggen," The Structural Basis of Architecture," Watson-Guptill.
Zalewski W. and E. Allen.," Shaping Structures - Statics," John Wiley & Sons, Inc.
Gordon, J.," Structures or why things don't fall down," A Da Capo.

Offered: fall semester annually

Faculty assigned: Ivan Markov

ARCH-2350: Construction Systems (2 credits)

Course Description: Provides basic understanding of elements, assemblies, and systems in construction. Emphasizes interrelated performance and situates construction within the relationships of architecture materially and conceptually.

Course Goals and Objectives: The primary objective of this course is to situate construction assembly as an integral part of the architect's design intelligence. As such, students will be familiar with:
1. Key terminology, properties,+ performance criteria of basic construction elements + systems
2. Typological inventory of methods of assembly discussed as logics of assembly
3. How key assemblies (floors, walls, roofs) , can be calibrated and designed as elements of resistance to functional criteria and performance (environmental + social factors)

Outcomes: Students will then be able to critically apply this knowledge through *applied design projects* to:
1. Establish organizational concepts/strategies for part-whole relationships
2. Situate construction in relation to the circumstances of its *application* in particular case studies
3. Situate construction within the context of architectural culture in general
4. Consider how representation of construction methods as documentation affords design and technical opportunities
5. Develop a research 'savvy' for construction-related materials + resources

Student Performance Criterion/a addressed (list number and title): B.7: Building Envelope Systems, and Assemblies**,** B.8: Building Materials & Assemblies

Topical Outline: Topics are: Sitework + Foundations (20%), Construction Logics: Accretion + Framed(20%), Construction Logics: Formed + Tensioned (20%), Envelopes: ExteriorCladding/Interior Finishes (20%), Envelopes: Wall Openings + Glazing(20%).
Prerequisites: ARCH-2510

Textbooks/Learning Resources: Deplazes, Andrea, *Constructing Architecture. Materials, Processes. Structures. A Handbook*. Basel: Birkhauser, 2005.

Offered (semester and year): fall semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Demetrios Comodromos**,** Ajmal Aqtash

ARCH-2540: Digital Constructs 3 (2 credits)

Course Description: Students acquire advanced modeling techniques in Rhino and competence with polygon modeling and become familiar with geospatial mapping and site grading programs.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. demonstrate an understanding of the differences as well as advantages and disadvantages of NURBs based modeling programs and polygon-based programs
2. Demonstrate ability to efficiently create NURB models of complex surfaces with high level of precision
3. Develop a high proficiency of polygon modeling strategies and techniques, and exploit their advantages to leverage the strengths of polygon modeling
4. Produce renderings of both NURBs and polygon based projects that include effective materiality and lighting
5. Become proficient in creating digital models suitable for 3d printing and approved by instructor - models must be watertight and have no non-manifold edges
6. Demonstrate an understanding of GIS and how to use it to extract data sets for use in design projects
7. Demonstrate an understanding of site design fundamentals, with a focus on site grading

Student Performance Criterion/a addressed (list number and title): none assigned for this course.

Topical Outline (include percentage of time in course spent in each subject area):
Grading: Weekly assignments: 30%
Project I review: 35%
Project II review: 35%
Students will complete two sequential projects in Digital Constructs 3, one focused on building competency with complex NURBs modeling, and the second focused on polygon modeling. Time spent on these projects will constitute roughly a 50/50 split of the semester. Students will render and 3D print the outcomes of these projects, with emphasis placed on advanced rendering techniques, lighting, and material application, as well as proper preparation of digital models to be 3d printed.

Prerequisites: ARCH-2530

Textbooks/Learning Resources: No textbooks are required for this course, however students will be provided with pdf's of relevant reading material, as well as access to Rhino, Maya, and any other software necessary to complete the course

Offered (semester and year): fall semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Fleet Hower

ARCH-2820: Architectural Design Studio 3* (5 credits)

Course Description (limit 25 words): This fall semester second-year studio focuses on site design, public, and institutional design in the form of exhibition space, artist studios, and residencies.

Course Goals and Objectives: Students who complete this studio will be able to demonstrate
1. the ability to gather, assess, record, and comparatively evaluate relevant information and performance in order to support conclusions related to a specific project or assignment.
2. the ability to effectively use basic formal, organizational, and environmental principles and the capacity of each to inform two- and three-dimensional design.
3. the ability to apply the fundamentals of both natural and formal ordering systems and the capacity of each to inform two- and three-dimensional design.
4. the ability to examine and comprehend the fundamental principles present in relevant precedents and to make informed choices about the incorporation of such principles into architecture and urban design projects.
5. the ability to prepare a comprehensive program for an architectural project that includes an assessment of client and user needs; an inventory of spaces and their requirements; an analysis of site conditions (including existing buildings); and a definition of site selection and design assessment criteria.
6. The ability to respond to site characteristics, including urban context and developmental patterning, historical fabric, soil, topography, ecology, climate, and building orientation, in the development of a project design.

Student Performance Criterion/a addressed (list number and title): A.3: Investigative Skills, A.4: Architectural Design Skills**,** A.5: Ordering Systems, A.6: Use of Precedents, A.8: Cultural Diversity & Social Equity**,** B.1: Pre-Design [partial]**,** B.2: Site Design

Topical Outline (include percentage of time in course spent in each subject area):
1. Analysis (of assigned art and artists residency precedents) and site Research: 25%
2. Preliminary design intervention in landscape (design study: 25%
3. New Residency and art center for OMI International Arts Center: 50%

Prerequisites: ARCH-2810

Textbooks/Learning Resources: This course relies on the distribution of assigned readings, assignment of precedent references and proximity to the proposed site of the design studio and access to the client stakeholders at the OMI International Arts Center.

Offered (semester and year): fall 2015 and every fall thereafter*

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): David Bell, Fleet Hower, Edwin Liu, Ted Ngai, Kyle Stover

*This studio replaces ARCH-2220.

ARCH-4100: An Architectural Genealogy 1 (2 credits)

Course Description: This course addresses the history of architecture in Western and non-Western civilizations to construct an understanding of its relationships to culture, technology, and thought.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. evaluate the differences and connections between architecture as it was conceived and produced in the past and in the modern and contemporary world.
2. demonstrate the ability through comparison and contrast to analyze and differentiate between various approaches to building throughout history.
3. evaluate the relationship between different intellectual perspectives and their architectural consequences.
4. apply their knowledge to discern the architectural characteristics of differing historical and cultural contexts.
5. analyze and write about selected architectural phenomena and basic principles of architectural order in their own words.

Student Performance Criterion/a addressed (list number and title): A.7: History & Global Culture, A.8: Cultural Diversity & Social Equity

Topical Outline (include percentage of time in course spent in each subject area):
The Enlightenment, 16%, Baroque & Rococo, 16%, Renaissance & Mannerism, 16%, Gothic, 16% Romanesque, 16%, Roman & Late Roman, 20%

Prerequisites: ARCH-4090, ARCH-4130 (co-requisite)

Textbooks/Learning Resources: the instructor's published notes

Offered (semester and year): fall semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): David Bell

ARCH-4130: Modernity in Culture, Civilization, and Architecture 2 (2 credits)

Course Description: This course continues to examine ideas, theories, and practices begun in ARCH-4120 that produced modernity in the western world and eventually on a global scale.

Course Goals and Objectives: Upon successful completion of this course, the student will be able to

1. demonstrate an understanding of the parallel and divergent histories of architecture and the cultural norms of a variety of indigenous, vernacular, local, and regional settings in terms of their political, economic, social, ecological, and technological factors.
2. demonstrate an understanding of the diverse needs, values, behavioral norms, physical abilities, and social and spatial patterns that characterize different cultures and individuals and the responsibility of the architect to ensure equity of access to sites, buildings, and structures.
3. demonstrate an ability to discern the cultural characteristics of differing architectural events, as well as to analyze basic principles entailed in relating architecture to other cultural phenomena.
4. demonstrate an ability to write about selected architectural phenomena (realized buildings, unrealized projects and urban spaces/places/realms) in their own words.
5. demonstrate an ability—through comparing/contrasting—to analyze and differentiate between various approaches to buildings and urban spaces.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
A Review of the Early Modern Movement, 14.3%, Post-War Monumentality and Reform, 14.3%, Post War to Cold War, 14.3%, Utopia and Counter Utopia, 14.3%, Modern / Postmodern, 14.3%, Modernism Reconfigured, 14.3%, Towards a Dematerialized Future, 14.3%

Prerequisites: ARCH-4120

Textbooks/Learning Resources: Kenneth Frampton, *Modern Architecture: A Critical History*, Barry Bergdoll, *European Architecture 1750-1890*, William Curtis, *Modern Architecture Since 1900,* Adrian Forty, *Words & Buildings*, and numerous primary sources that vary each semester.

Offered (semester and year): fall semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Lydia Kallipoliti (current), Brendan Moran, Ralph Ghoche

B. ARCH REQUIRED COURSES
2nd-YEAR SPRING SEMESTER

ARCH-2140: The Building and Thinking of Architecture 3* (2 credits)

Course Description: This course engages in a focused examination of selected architects to understand the impact of their work and ideas on the discipline.

Course Goals and Objectives: Students who have successfully completed this course will be able to demonstrate:
1. Students will encounter ideas the implications of which they will only begin to appreciate fully many years after graduation.
2. skills in critiquing both theories and praxes in architecture through critical reading, writing, and discussion.
3. skills in concisely expressing their ideas in writing.
4. their abilities to think in a critically reflective fashion.
5. the ability to define constraints in the formulation of a theoretical position.
6. their abilities to consider and respond systematically to a specific issue.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
1. Bernini & Borromini: 12.5%
2. Thomas Jefferson's University: 12.5%
3. Frank Lloyd Wright: 12.5%
4. Adolf Loos: 12.5%
5. Mies van der Rohe: 12.5%
6. Le Corbusier: 12.5%
7. Alvar Aaalto: 12.5%
8. Alvaro Siza: 12.5%

Prerequisites: ARCH-2120

Textbooks/Learning Resources:
1. Martin Heidegger, "Building, Dwelling, Thinking"
2. Nana Last, "Transgressions and Inhabitations: Wittgensteinian Spatial Practices Between Architecture and Philosophy"
3. Colin Rowe, "The Mathematics of the Ideal Villa"
4. Martin Jay, "Scopic Regimes of Modernity"
5. Robin Evans, "Figures, Doors, and Passages"
6. Bernard Tschumi, "Violence and Architecture"
7. Adolf Loos, "Architecture"
8. Theodor Adorno, "Functionalism Today"
9. Kenneth Frampton, "Rappel à L'Ordre, The Case for the Tectonic"
10. Walter Benjamin, "The Work of Art in the Age of Mechanical Reproduction"
11. Michel Foucault, "Of Other Spaces: Utopias and Heterotopias"
12. James Corner, "Eidetic Operations and New Landscapes"

Offered (semester and year): spring 2014*, 2015*

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Brendan Moran**,** Ralph Ghoche

*This course was taught for the final time in spring 2015. Its content has been distributed to various courses in the newly revised curriculum.

ARCH-2230: Architecture Design 3* (6 credits)

Course Description (limit 25 words): AD 3 tackles the problem of designing multi-unit collective housing for an urban site. Students work in teams of two.

Course Goals and Objectives: The projects designed in AD 3 must successfully navigate the pragmatics of organizing a complex architectural program into a coherent building that sensitively responds to and shapes its user's needs, while also maintaining high levels of formal, material, and aesthetic experimentation that push the discipline forward. Students must work productively as members of a design partnership.

Student Performance Criterion/a addressed (list number and title): A.4: Architectural Design Skills, A.5: Ordering Systems, A.6: Use of Precedents, B.2: Site Design

Topical Outline (include percentage of time in course spent in each subject area):
Week 1 – Week 3: Documentation and Analysis of a precedent project (A.5, A.6), 20%
Week 4 – Week 6: Schematic Design of building and site (A.4, A.5, B.2), 20%
Week 7 – Week 8: Schematic Design of housing units (A.4, A.5), 13.33%
Week 9: Midterm review; assess the schematic designs at the scale of the entire building and site and at the scale of the housing units. Discuss refinement and integration of the project at both scales, 6.67%
Week 10 – Week 12: Development of large-scale section model (A.4, A.5), 20%
Week 13 – Week 14: Synthesis of all aspects of the project (A.4, A.5, B.2), 13.33%
Week 15: Final review, 6.67%

Prerequisites: ARCH-2220

Textbooks/Learning Resources: Readings were assigned by each individual studio instructor. Lectures given by instructors to the entire class covered the following topics: diagramming, housing typologies, site design and planning, and zoning and code for housing design.

Offered (semester and year): spring 2015

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Ted Krueger, Adam Dayem, Edwin Liu, Zbigniew Oksiuta, Elena Perez-Guembe, Fleet Hower

*This course will be replaced by ARCH-2830 in spring 2016.

ARCH-2360: Environmental & Ecological Systems (4 credits)

Course Description: This course explores climate-responsive design, including passive heating, cooling, ventilation, and daylighting, for thermal and visual comfort, through lectures, weekly laboratories, and a research project.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. gather climate information for a particular location and use it to quantify local solar, wind, and daylighting resources, as well as evaporative cooling potential.
2. use instruments such as weather meters, solar pathfinders, non-contact thermometers, and illuminometers to investigate existing buildings and to characterize microclimate conditions.
3. calculate heat gains and losses through standard building envelope assemblies.
4. design operable shading devices that meet pre-established criteria for performance.
5. evaluate the probable effectiveness of a passive solar heating system.
6. size and locate apertures for schematic-level natural ventilation systems.
7. size and locate glazing for schematic-level daylighting systems.
8. simulate the performance of such systems, and test alternative elements of such systems, in a whole-building energy simulation program that accurately simulates passive systems.

Student Performance Criterion/a addressed (list number and title): B.6: Environmental Systems

Topical Outline (include percentage of time in course spent in each subject area):

2014 version (no prereq)

1. Vernacular architecture (8%)
2. Heat transfer (8%)
3. Thermal comfort (8%)
4. Energy modeling (8%)
5. Climates (8%)
6. Solar geometry (8%)
7. Thermal envelopes (8%)
8. Passive solar heating (8%)
9. Passive cooling (8%)
10. Shading (8%)
11. Daylighting (8%)
12. Rainwater & Site design (8%)
13. Research projects (4%)

2015 version (with prereq)

1. Review of ARCH 2370 (10%)
2. Solar geometry (15%)
3. Passive solar heating (15%)
4. Passive cooling (15%)
5. Shading (15%)
6. Daylighting (15%)
7. Rainwater & Site design (10%)
8. Research projects (5%)

Prerequisites: ARCH-2370

Textbooks/Learning Resources: Lechner, *Heating, Cooling, Lighting*, 4th edition (2014)

Offered (semester and year): spring semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Alexandra Rempel

ARCH-2550: Digital Constructs 2 (2 credits)

Course Description (limit 25 words): This course helps students develop an advanced skill set of computational techniques beyond digital modeling and representation, e.g., parametrics, BIM fundamentals, environmental issues, etc.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. demonstrate an understanding of basic computational concepts as well as their general appearance in code, and how to implement them.
2. demonstrate the ability to code a custom-built tool that can be used in a design studio setting
3. demonstrate the ability to use environmental analysis as an influential component of site and massing design.
4. demonstrate a basic understanding of integrated design.
5. understand the integration of building systems and pricing in the design stages of a project.
6. perform environmental analysis studies on current or past studio projects, and understand the environmental implications of the design.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
1. The course will include one significant project at the beginning of the semester, and then will investigate a series of additional methods of analysis later in the semester. 33.33%
2. The larger project will teach students a basic understanding of computational thinking, as well as the ability to write computer code to manipulate geometry. These exercises will conclude with each student writing a custom tool that can be used in their studio work. 33.33%
3. Subsequent smaller exercises will include introductions to analysis programs that investigate environment, material cost, code restrictions, and geometric design. Many of these exercises will involve the introduction of a new piece of software, which students will learn for a week, and then subsequently perform a relevant analysis. 33.33%

Prerequisites: ARCH-2540

Textbooks/Learning Resources: No textbooks are required for this course, however students will be provided with pdf's of relevant reading material, as well as access to Rhino, and any other software necessary to complete the course

Offered (semester and year): spring semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Fleet Hower

ARCH-2830: Architectural Design Studio 4* (5 credits)

Course Description (limit 25 words): This course tackles the problem of designing multi-unit collective housing for an urban site. Students work in teams of two.

Course Goals and Objectives: The projects designed in AD 3 must successfully navigate the pragmatics of organizing a complex architectural program into a coherent building that sensitively responds to and shapes its user's needs, while also maintaining high levels of formal, material, and aesthetic experimentation that push the discipline forward. Students must work productively as members of a design partnership.

Student Performance Criterion/a addressed (list number and title): A.4: Architectural Design Skills, A.5: Ordering Systems, A.6: Use of Precedents, B.2: Site Design

Topical Outline (include percentage of time in course spent in each subject area):
Week 1 – Week 3: Documentation and Analysis of a precedent project (A.5, A.6), 20%
Week 4 – Week 6: Schematic Design of building and site (A.4, A.5, B.2), 20%
Week 7 – Week 8: Schematic Design of housing units (A.4, A.5), 13.33%
Week 9: Midterm review; assess the schematic designs at the scale of the entire building and site and at the scale of the housing units. Discuss refinement and integration of the project at both scales, 6.67%
Week 10 – Week 12: Development of large-scale section model (A.4, A.5), 20%
Week 13 – Week 14: Synthesis of all aspects of the project (A.4, A.5, B.2), 13.33%
Week 15: Final review, 6.67%

Prerequisites: ARCH-2820

Textbooks/Learning Resources: Readings were assigned by each individual studio instructor. Lectures given by instructors to the entire class covered the following topics: diagramming, housing typologies, site design and planning, and zoning and code for housing design.

Offered (semester and year): spring 2015 annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): David Bell, additional faculty TBA

*This course will replace ARCH-2230 in spring 2016.

ARCH-4110: An Architectural Genealogy 2* (2 credits)

Course Description: This course continues the study of historical architecture in Western and non-Western civilizations to understand its relationships to culture, technology, and thought.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. evaluate the differences and connections between architecture as it was conceived and produced in the past and in the modern and contemporary world.
2. demonstrate the ability through comparison and contrast to analyze and differentiate between various approaches to building throughout history.
3. evaluate the relationship between different intellectual perspectives and their architectural consequences.
4. apply their knowledge to discern the architectural characteristics of differing historical and cultural contexts.
5. analyze and write about selected architectural phenomena and basic principles of architectural order in their own words.

Student Performance Criterion/a addressed (list number and title): A.7: History & Global Culture, A.8: Cultural Diversity &Social Equity

Topical Outline (include percentage of time in course spent in each subject area):
The Islamic World, 20%, The Indian Sub-Continent, 20%, Ancient Greece, 30%, Ancient Egypt, 15%, China, 15%

Prerequisites: ARCH-4100

Textbooks/Learning Resources: the instructor's published course notes

Offered (semester and year): spring semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): David Bell

*In spring 2016, this course replaced part of the content of ARCH-2110 & Arch-2120,

B. ARCH REQUIRED COURSES
3rd-YEAR FALL SEMESTER

PLEASE NOTE

1. ARCH-4240 is typically a fall semester [vertical-option] studio. However, if a student gets out of sequence for any reason, ARCH-4240 could be a spring semester [vertical-option] studio.

2. ARCH-4250 & -4260 are typically spring and fall [vertical-option] studios respectively but both often can occur as [vertical-option] studios in both semesters depending on when a student takes ARCH-4300 or if a student gets out of sequence for any other reason.

ARCH-4140 Modernity in Culture and Architecture* (4 credits)

Course Description: Beginning with the Enlightenment, this course critically examines the phenomenon of modernity and its impact on architectural theory and production.

Course Goals and Objectives:
1. Students will have demonstrated ability—through comparing/contrasting—to analyze and differentiate between various approaches to buildings and urban spaces.
2. Students will be able to evaluate relationships between different intellectual perspectives and their relation to architectural debates.
3. Students will have demonstrated ability to apply their knowledge to discern the cultural characteristics of differing architectural events.
4. Students will have demonstrated ability to write about selected architectural phenomena (realized buildings, unrealized projects and urban spaces/places/realms) in their own words.
5. Students will have demonstrated capacity to discern and analyze basic principles entailed in relating architecture to other cultural phenomena.

Student Performance Criterion/a addressed (list number and title): none assigned to this course.

Topical Outline (include percentage of time in course spent in each subject area):
Origins of Modernity: 7.14%
An Ideal Society, through Architecture: 7.14%
Modernity as Industrialization: 7.14%
Modernity as the Metropolitan Environment: 7.14%
Architecture and City Design: 7.14%
New Architecture(s) : 7.14%
Modern Architecture & the Interwar Moment: 7.14%
Modernity, Again: 7.14%
Second Modernity: Fifties & Sixties: 7.14%
Leaving Modernism Behind: 7.14%
Crises of 2nd Modernity: Environment, Energy & Existence: 7.14%
Architecture (again) in the Spotlight: 7.14%
Parodox in (Contemporary) Architecture: 7.14%
Future Modernities: 7.14%

Prerequisites: ARCH-2120, ARCH-2130

Textbooks/Learning Resources:
Barry Bergdoll, *European Architecture 1750-1890*
Alan Colquhoun, *Modern Architecture*
Jane Jacobs, *The Death and Life of Great American Cities*
In addition to these texts, the instructor assigns a wide variety of readings throughout the semester.

Offered (semester and year): Fall semester 2014, 2015

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Lydia Kallipoliti**.** Brendan Moran**,** Ralph Ghoche

* This course was be taught in its present form for the last time in fall 2015. It is being replaced by ARCH-4120 and -4130, Modernity in Culture, Civilization, and Architecture 1 and 2.

ARCH-4240, -4250, -4260: Architecture Design 4, 5, 6 (6 credits [current])

Course Description: This upper division design studio explores topics of contemporary interest to the discipline that are defined by the faculty member teaching it.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. produce design projects that engage complex issues of interest to the contemporary practice of architecture.
2. develop and represent verbally and graphically architectural research through design.
3. present and represent verbally and graphically complex and challenging design ideas in a comprehensive and coherent argument.
4. present and represent comprehensive design work through models, drawings, prototypes, and demonstrations as appropriate to the nature of the project.

Student Performance Criterion/a addressed (list number and title): none assigned to this course.

Topical Outline (include percentage of time in course spent in each subject area): One of these elective studios (Architectural Design Studios 5, 6, and 7) is required in either semester of the 3rd and 4th years, and in the fall of the 5th year in the undergraduate professional curriculum. These studios are intended to allow students to develop an education consistent with personal goals. Each studio may have upper division students of any year. Students may elect to participate in a foreign and off-campus study options to fulfill this studio requirement. The topics will differ from semester to semester and from faculty member to faculty member.

Prerequisites: ARCH-2230 is/was the prerequisite for students in graduating classes 2016 – 2018, ARCH-2830 is the prerequisite for classes graduating in 2019 and afterwards. Those students will take ARCH-4770, -4780, - 4790.

Textbooks/Learning Resources: This will be determined by the faculty member offering the particular studio.

Offered (semester and year): fall and spring semesters annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit):

ARCH-4240	ARCH-4250	ARCH-4260
Francis Bitonti	David Bell (in India)	Francis Bitonti
Xuedi Chen	Francis Bitonti	Xuedi Chen
Michael Oatman	Xuedi Chen	D. Comodromos (at CASE)
Zbigniew Oksiuta	D. Comodromos (at CASE)	Melanie Fessel
Kyle Stover (in China)	Melanie Fessel	Fleet Hower
	Mitchell Joachim	Mitchell Joachim
	Zbigniew Oksiuta	Michael Oatman
	Andrew Saunders	Zbigniew Oksiuta
	Kyle Stover (in China)	Andrew Saunders
		Kyle Stover (in China)
		David Bell (in India)

*Beginning in the 2016-17 academic year ARCH-4240, -4250, & -4260 will be replaced by ARCH-4770, -4780, & -4790.

ARCH-4240: Architecture Design 4* (6 credits)

Course Description: The studio aims to take a close look at the relationship between the design school as an evolving program and the environment that houses it.

Course Goals and Objectives: The intention of this studio is for the student to develop an understanding of the history and theory that encompass the methods of educating architects. A significant weight will be on the critical analysis of ecological design claims in specific learning contexts. Students will create a descriptive synthesis of one or more significant experimental schools of design and
1. describe how that institute created newly formatted educational spaces, facilities, methods, and cultures that manifested radical shifts for design pedagogy.
2. discuss in detail the seminal interactions between students and teachers that lead to architectural/ design revolutions.
3. focus on key typological and technological changes that allowed for a particular faculty to break away from existing normative models.
4. develop a new pedagogical model and propose how it is physically expressed.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
1. analysis of design school pedagogy, 30%
2. case study of experimental design schools, 30%
3. development of design proposals for a new design school, 40%

Prerequisites: ARCH-2230

Textbooks/Learning Resources:
Education of an Architect by John Hejduk.
Architecture School: Three Centuries of Educating Architects in North America by Joan Ockman.
Programs and Manifestoes on 20th-Century Architecture by Ulrich Conrads.

Offered (semester and year): fall 2014

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Mitchell Joachim, Melanie Fessel

* Beginning in 2016 – 17, this course will become ARCH-4770.

ARCH-4240: Architecture Design 4* (Cinetecture) (6 credits)

Course Description (limit 25 words): Cinetecture explores the language of cinema enabling students to approach design via another critical practice. Special emphasis was placed on the techniques of film.

Course Goals and Objectives: This course encourages students:
1. to develop an awareness and understanding of the basic chronology of cinema historically, and how that history relates to current and evolving practices
2. to critically analyze a particular film (the virtual) and use that analysis as the basis for an architectural design process (the practical) that is iterative, speculative and buildable
3. to develop an awareness and understanding of the basic concepts of design development
4. to explore the conceptual and material premises of various 20th/21st century filmmakers as a way to gain access to the particular challenges of the creation and presentation of their work
5. to understand the implications of cinema's influence on architecture and vice/versa
6. to understand role of the audience as subject and object, material and community
7. to integrate an installation and a site via the mechanisms of display, audience and other programs

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
1) Film theory – German, Soviet influences on Hitchcock, Hitchcock's filmography (15%)
2) Hitchcock's innovations in set building/development of integrated camera work (15%)
3) Team development (10%)
4) Architectural precedents (15%)
5) Innovations/techniques including first British sound picture, sound effects, editing (25%)
6) Social experiments/material testing (20%)

Prerequisites: ARCH-2230

Textbooks/Learning Resources: Bell, David, "The Carpenter's Apprentice," and a variety of relevant cinema articles and essays

Offered (semester and year): fall 2014, spring 2014

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Michael Oatman

* Beginning in 2016 – 17, this course will become ARCH-4770.

ARCH-4240: Architecture Design 4* (Minimal vs Maximal) (6 credits)

Course Description (limit 25 words): Students will be creating island, a mobile New Atlantis, minimal independent society and will assign features and architecture necessary to make it alive

Course Goals and Objectives: This course intends:
1. to introduce students to the exploration of biological systems for architectural purpose
2. to introduce students to a set of unconventional materials in architecture
3. to introduce students to basic experiments of life science
4. to introduce students to the exploration of self-organizational processes in matter
5. to engage students in the exploration of human household as dynamic system in environment

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
Participation in studio disscusion 15%
Presentation of concepts, drawings and models 15%
Presentation of student's final project in progress 25%
Final project 35%
Attendance/Participation 10%

Prerequisites: ARCH-2230

Textbooks/Learning Resources:
1. The Selfish Gene, Richard Dawkins, 1976
2. Climbing Mount Improbable, Chapter 7, The Robot Repeater,
3. The New Atlantis, Francis Bacon, 1624
4. Forms, Processes, Consequences, Zbigniew Oksiuta, 2004
5. Sk-Interfaces, Jens Hauser, 2008
6. Radical Evolution, Joel Garreau, 2005
7. Claudia Hildner, Small Houses, 2011
8. Christian Schittich (Ed), Small Structures, 2010
9. Gunter Nitschke, The Architecture of the Japanese Garden, 1991
10. Metabolism, The City of the Future, Exhibition Catalogue, Mori Art Museum
11. Our Ecological Footprint, Mathis Wackernagel & William Rees, 1998

Offered (semester and year): fall 2014

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Zbigniew Oksiuta

* Beginning in 2016 – 17, this course will become ARCH-4770.

ARCH-4240.50: Architecture Design 4 (ROME) (6 credits)

Course Description (limit 25 words): Presuming a phenomenological premise, this course explores analogies between the human body and the physical expressiveness in the art and architecture of the Roman Baroque**.**

Course Goals and Objectives: With the goal of reinterpreting Baroque membranes, the course seeks to cultivate through architectural design a humanism that could be complementary to a technical side of the profession with deep philosophical concepts and ethics rooted on an understanding of the origins of the European culture promoting discussion and teamwork. To cultivate a multidisciplinary thinking that combines art, architecture, science, philosophy and social research. To cultivate in the students a greater understanding of Mediterranean culture emphasizing its phenomenological approach in architecture (which is a materialization of a specific way of thinking and performing), its art, history, mythology and inventions.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
Design studio unfolds in three parts that will progressively inform a final single project:
1. SKIN IN MOTION: an analysis of Baroque masterpieces where the students analyzed and focused on the representation of three aspects: light, movement, and layering. (33.33%)
2. AUGMENTED BODIES: exploration and representation of their findings through physical modeling and material experimentation (33.33%)
3. MULTIPLE BODIES & SPACE: implementation and integration of a system in a space in which this significant model has been installed; where light, movement and layered material will express perceptual and poetic conditions of the original analyzed piece. This last big model was developed teams of three or four students. Only the most promising projects were developed in this last phase. (33.34%)

Prerequisites: ARCH-2230

Textbooks/Learning Resources: Leonardo da Vinci Drawings reference books, *The Lives of the Artists* by Giorgio Vasari, *Borromini* by Paolo Portoghesi, “Born Under Saturn” by Wittkower, “Itaca” C. Kavafis, “Greek Myths” Robert Graves.

Offered (semester and year): fall 2014 (ROME)

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Elena Perez-Guembe

ARCH-4240.50: Architecture Design 4* (6 credits) (ROME)

Course Description: Using the city of Rome as a context, this studio explores the nature of spiritual and sacred space beyond conventional notions of religion.

Course Goals and Objectives: The intent of this studio is:
1. to introduce students to interdisciplinary thinking and working process
2. to introduce students to the creation of new independent social features
3. to introduce students to understanding of the social and political role of architecture in society
4. to introduce students to understanding of the spiritual role of architecture
5. to familiarize students with the autonomous creation of architectural tasks, and development of innovative programs.
6. to introduce students to understand the architectural messages beyond the historical form and style

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
1. research on the nature of sacred spaces, 20%
2. preliminary design exercises, 30&
3. final design work, 50%

Prerequisites: ARCH-2230

Textbooks/Learning Resources:
1. Mircea Eliade, *The Sacred and the Profane*,
2. Ulrich Connrads, *Programs and manifestos on 20th-century architecture*
3. Lao Tsu, *Tao te Ching*
4. Richard Dawkins ,*The Selfish Gene*
5. Susan Blackmore, *The Meme Machine*, 1999
6. Ray Kurzweil, *The singularity is near*, 2005
7. Zbigniew Oksiuta, *Forms, Processes, Consequences*, 2004

Offered (semester and year): fall 2015 (ROME)

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Zbigniew Oksiuta

* Beginning in 2016 – 17, this course will become ARCH-4770.50

ARCH-4240.80: Architecture Design 4* (6 credits) (CASE)

Course Description: This semester seeks to resolve the realities of design actualization and technological research using a single, speculative project to produce both knowledge and architecture.

Course Goals and Objectives:
Each student will develop ways to approach with equal measure issues of site, environment, context, history, concept, structure, materials, systems, and geometry in order to provoke a tangible and persuasive architecture that:
1. Advances their insights and thesis in response to the program brief
2. Furthers ecological and parametric approaches to the building and thinking of architecture and design
3. Produces architectural knowledge and expands possibility through the act of integration, and ecological thinking
Students will develop a capacity to design at various scales of material realization and assembly in support and development of conceptual intentions/ideas while integrating building, environmental, and programmatic systems and addressing regulatory and technical requirements. Students are expected to iteratively address multiple design considerations and in doing so to develop their awareness and understanding regarding how:
1. One scale informs/impacts another,
2. Criteria established by considerations of environmental building performance inform and positively affect morphology, structure, envelope and the planning and design of buildings
3. Disciplines affecting architectural design (structural, mechanical, acoustic, lighting, etc...) cannot be seen as exclusive, isolated, or compartmentalized practices, and to develop the capacity to integrate that understanding early into the design process.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline:
The 17th Century Salon as program and ground for speculation and the projection of living information and social interaction will be the focus of the studio's attention and the testing bed of our methodology this semester. In particular, the studio will reconsider the existing space of the current faculty office and conference area at CASE, a 450 ft2 space that operates as both the front door and main gathering area for the center. The question we will ask is how the reconsideration of the surfaces that define the room and their constituent and internal modularity and makeup can participate in the making of the room as CASE's Salon—a place of interaction, projection, and performance.
The project will move through issues of existing condition analysis (10%), programming and conceptualization (20%), material design and processing(30%), prototyping (20%), installation (15%), gathering and processing of data (5%)all in the context of reconsidering the actual architecture of the room, and its transformation into the CASE Salon.

Prerequisites: ARCH-2230

Course Texts:
Koolhaas, Rem. *Delirious New York: A Retroactive Manifesto for Manhattan*,. New York: Monacelli Press, 1994.

Offered (semester and year): fall semester annually (CASE)

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Demetrios Comodromos, Nancy Diniz, Josh Draper, Anna Dyson

* Beginning in fall 2016, this course will become ARCH-4770.80.

ARCH-4330: Structures 2 (3 credits)

Course Description: This course demonstrates basic principles and behavior of structural systems under gravity lateral and seismic loads with emphasis on steel and concrete materials.

Course Goals and Objectives: Students who successfully complete this course will demonstrate the ability to:

1. understand the load path of gravity and lateral forces in the basic structural assemblies.
2. understand the concept and load transfer in advanced structural systems.
3. understand the basic principles of steel and concrete systems.
4. understand the basic principles of seismic design.
5. build and load test architecturally creative and structurally sound physical models to visualize structural behavior and cultivate structural intuition.

Student Performance Criterion/a addressed: B.5: Structural Systems

Topical Outline:

1. Review of Structures 1	5%
2. Gravity and Lateral Load Transfer in basic Structural Systems	20%
3. Principles in Steel Design	15%
4. Principles in Concrete Design	15%
5. Concepts in Seismic Design	10%
6. Advanced Structural Systems	15%
7, Structural Design	20%

Prerequisites: ARCH 2510, ARCH 2350, ARCH 2330

Textbooks/Learning Resources: Schodek, D., and M. Bechthold, *Structures,* Prentice Hall. (textbook)
Hibbeler R.C.," Structural Analysis," Prentice Hall.
Onouye B.," Statics and Strength of Materials," Prentice Hall.
Fanella, D,"Steel Design for Engineers and Architects," Van Nostrand Reinhold.
AISC "Manual of Steel Design – ASD/LRFD" (recommended).
Shafer R." Reinforced Concrete – Preliminary Design for Architects and Builders,"
McGraw-Hill, Inc. (recommended).
Zalewski W. and E. Allen.,"Shaping Structures - Statics," John Wiley & Sons, Inc.

Offered: fall semester annually

Faculty assigned: Ivan Markov

ARCH-4820: Integrated Design Schematic* (5 credits)

Course Description: This design-based studio focuses on integrating structural, technical, detail, zoning, and code-related issues with respect to a moderate to large-scale building of civic importance.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. demonstrate competence in developing a complex architectural program.
2. demonstrate an ability to design in response to site conditions, climate, and urban context
3. produce an integrated and effective presentation of verbal, graphic and modeling materials
4. produce a schematic solution to a building type integrating responses to physical, cultural, and regulatory considerations.

Student Performance Criterion/a addressed: A.2: Design Thinking Skills, A.3: Investigative Skills, A.4: Architectural Design Skills, A.5: Ordering Systems, A.6: Use of Precedents, B.1: Pre-Design, B.2: Site Design, B.3: Codes & Regulations**,**
C.2: Integrated Evaluations & Decision-Making Design Process, C.3: Integrative Design

Topical Outline:
Integrative Evaluations and Decision Making – Integrated throughout
Integrative Design – Integrated throughout
Project Notebook, background research - integrated throughout
Programming Document - distributed – 20%
Case Studies Building types – One week – 10%
Analysis of Context – One week – 10%
Massing in response to urban, site and climatic conditions – One week – 10%
Site Design – One Week – 10%
Accessibility and Egress Standards – One week – 10%

Prerequisites: ARCH-2830

Textbooks/Learning Resources:
Architectural Graphic Standards, AIA
The Architect's Studio Companion, Edward Allen and Joseph Iano
Time-Saver Standards for Building Types, De Chiara and Callender

Offered (semester and year): fall semester annually beginning in fall 2016

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): N/A

* This course will replace ARCH-4963 and will be taught for the first time in spring 2016

ARCH-4963: Integrated Design Schematic* (6 credits)

Course Description: This design-based studio focuses on integrating structural, technical, detail, zoning, and code-related issues with respect to a moderate to large-scale building of civic importance.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. Demonstrate competence in developing a complex architectural program.
2. Demonstrate an ability to design in response to site conditions, climate, and urban context
5. Produce an integrated and effective presentation of verbal, graphic and modeling materials
6. Produce a schematic solution to a building type integrating responses to physical, cultural, and regulatory considerations.

Student Performance Criterion/a addressed: A.2: Design Thinking Skills, A.3: Investigative Skills, A.4: Architectural Design Skills, A.5: Ordering Systems, A.6: Use of Precedents, B.1: Pre-Design, B.2: Site Design, B.3: Codes & Regulations, C.2: Integrated Evaluations & Decision-Making Design Process, C.3: Integrative Design

Topical Outline:
Integrative Evaluations and Decision Making – Integrated throughout
Integrative Design – Integrated throughout
Project Notebook, background research - integrated throughout
Programming Document - distributed – 20%
Case Studies Building types – One week – 10%
Analysis of Context – One week – 10%
Massing in response to urban, site and climatic conditions – One week – 10%
Site Design – One Week – 10%
Accessibility and Egress Standards – One week – 10%

Prerequisites: ARCH-2230

Textbooks/Learning Resources:
Architectural Graphic Standards, AIA
The Architect's Studio Companion, Edward Allen and Joseph Iano
Time-Saver Standards for Building Types, De Chiara and Callender
Building tours: Experimental Media and Performing Arts Center and Center for Biotechnology and Interdisciplinary Studies and with their selected architectural drawings

Offered (semester and year): fall semester annually beginning in fall 2016

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Ted Krueger, Lonn Combs, Kyle Stover, Kouray Duman

* This course was taught in the fall & spring semesters of 2015 as part of the transition to the new curriculum. It will be replaced by ARCH-4820 in 2016.

B. ARCH REQUIRED COURSES
3rd-YEAR SPRING SEMESTER

PLEASE NOTE

1. ARCH-4240 is typically a fall semester [vertical-option] studio. However, if a student gets out of sequence for any reason, ARCH-4240 could be a spring semester [vertical-option] studio.

2. ARCH-4250 & -4260 are typically spring and fall [vertical-option] studios respectively but both often can occur as [vertical-option] studios in both semesters depending on when a student takes ARCH-4300 or if a student gets out of sequence for any other reason.

ARCH-2130: Contemporary Design Approaches (2 credits)*

Course Description: This course is a critical inquiry into the principal ideologies and premises of the most substantive architectural practices in the contemporary world.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. demonstrate an ability to discuss and critically compare and contrast the theoretical merits and their consequences of contemporary design practices.
2. identify and critique key aspects of contemporary architectural design projects and trends.
3. compare critically current design theories to previous theories and their design manifestations.
4. identify, discuss, and evaluate the thesis of a particular architectural project and/or its designer.
5. formulate in a rudimentary way and express their own perspective on the design and practice of architecture.

Student Performance Criterion/a addressed (list number and title): none assigned to this course.

Topical Outline (include percentage of time in course spent in each subject area):
What is Critical?, 16.6%, Difference: Theories and History, 16.6%, Deterritorialization: Methods and Practice, 16.6%, The Imaginary: Form Making, 16.6%, Immanence: Programming, The Sensible; Materiality, 16.6%, The Digital, 16.6%

Prerequisites: ARCH-4130

Textbooks/Learning Resources: The instructor will determine the most appropriate contemporary texts with each distinct iteration of the course.

Offered (semester and year): spring semester annually beginning in 2017; until fall 2014, it was offered each fall semester

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Brendan Moran, Ralph Ghoche

*This course was last taught in fall 2014 as a 2nd-year course. It will resume in spring 2017 with the number ARCH-4150 as a 3rd-year course.

ARCH-4240, -4250, -4260: Architecture Design 4, 5, 6* (6 credits [current])

Course Description: This upper division design studio explores topics of contemporary interest to the discipline that are defined by the faculty member teaching it.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. produce design projects that engage complex issues of interest to the contemporary practice of architecture.
2. develop and represent verbally and graphically architectural research through design.
3. present and represent verbally and graphically complex and challenging design ideas in a comprehensive and coherent argument.
4. present and represent comprehensive design work through models, drawings, prototypes, and demonstrations as appropriate to the nature of the project.

Student Performance Criterion/a addressed (list number and title): none assigned to this course.

Topical Outline (include percentage of time in course spent in each subject area): One of these elective studios (Architectural Design Studios 5, 6, and 7) is required in either semester of the 3rd and 4th years, and in the fall of the 5th year in the undergraduate professional curriculum. These studios are intended to allow students to develop an education consistent with personal goals. Each studio may have upper division students of any year. Students may elect to participate in a foreign and off-campus study options to fulfill this studio requirement. The topics will differ from semester to semester and from faculty member to faculty member.

Prerequisites: ARCH-2230 is/was the prerequisite for students in graduating classes 2016 – 2018, ARCH-2830 is the prerequisite for classes graduating in 2019 and afterwards. Those students will take ARCH-4770, -4780, - 4790.

Textbooks/Learning Resources: This will be determined by the faculty member offering the particular studio.

Offered (semester and year): fall and spring semesters annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit):

ARCH-4240	ARCH-4250	ARCH-4260
Francis Bitonti	David Bell (in India)	Francis Bitonti
Xuedi Chen	Francis Bitonti	Xuedi Chen
Michael Oatman	Xuedi Chen	D. Comodromos (at CASE)
Zbigniew Oksiuta	D. Comodromos (at CASE)	Melanie Fessel
Kyle Stover (in China)	Melanie Fessel	Fleet Hower
	Mitchell Joachim	Mitchell Joachim
	Zbigniew Oksiuta	Michael Oatman
	Andrew Saunders	Zbigniew Oksiuta
	Kyle Stover (in China)	Andrew Saunders
		Kyle Stover (in China)
		David Bell (in India)

*Beginning in the 2016-17 academic year ARCH-4240, -4250, & -4260 will be replaced by ARCH-4770, -4780, & -4790.

ARCH-4250: Architecture Design 5* (Cinetecture) (6 credits)

Course Description (limit 25 words): Cinetecture explores the language of cinema enabling students to approach design via another critical practice. Special emphasis was placed on the techniques of film.

Course Goals and Objectives: This course encourages students:
1. to develop an awareness and understanding of the basic chronology of cinema historically, and how that history relates to current and evolving practices
2. to critically analyze a particular film (the virtual) and use that analysis as the basis for an architectural design process (the practical) that is iterative, speculative and buildable
3. to develop an awareness and understanding of the basic concepts of design development
4. to explore the conceptual and material premises of various 20th/21st century filmmakers as a way to gain access to the particular challenges of the creation and presentation of their work
5. to understand the implications of cinema's influence on architecture and vice/versa
6. to understand role of the audience as subject and object, material and community
7. to integrate an installation and a site via the mechanisms of display, audience and other programs

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
1) Film theory – German, Soviet influences on Hitchcock, Hitchcock's filmography (15%)
2) Hitchcock's innovations in set building/development of integrated camera work (15%)
3) Team development (10%)
4) Architectural precedents (15%)
5) Innovations/techniques including first British sound picture, sound effects, editing (25%)
6) Social experiments/material testing (20%)

Prerequisites: ARCH-4240

Textbooks/Learning Resources: Bell, David, "The Carpenter's Apprentice," and a variety of relevant cinema articles and essays

Offered (semester and year): fall 2014, spring 2014

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Michael Oatman

* Beginning in 2016 – 17, this course will become ARCH-4780.

ARCH-4250: Architecture Design 5* (Minimal vs Maximal) (6 credits)

Course Description (limit 25 words): Students will be creating island, a mobile New Atlantis, minimal independent society and will assign features and architecture necessary to make it alive

Course Goals and Objectives: This course intends:
1. to introduce students to the exploration of biological systems for architectural purpose
2. to introduce students to a set of unconventional materials in architecture
3. to introduce students to basic experiments of life science
4. to introduce students to the exploration of self-organizational processes in matter
5. to engage students in the exploration of human household as dynamic system in environment

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
Participation in studio disscusion 15%
Presentation of concepts, drawings and models 15%
Presentation of student's final project in progress 25%
Final project 35%
Attendance/Participation 10%

Prerequisites: ARCH-4240

Textbooks/Learning Resources:
1. The Selfish Gene, Richard Dawkins, 1976
2. Climbing Mount Improbable, Chapter 7, The Robot Repeater,
3. The New Atlantis, Francis Bacon, 1624
4. Forms, Processes, Consequences, Zbigniew Oksiuta, 2004
5. Sk-Interfaces, Jens Hauser, 2008
6. Radical Evolution, Joel Garreau, 2005
7. Claudia Hildner, Small Houses, 2011
8. Christian Schittich (Ed), Small Structures, 2010
9. Gunter Nitschke, The Architecture of the Japanese Garden, 1991
10. Metabolism, The City of the Future, Exhibition Catalogue, Mori Art Museum
11. Our Ecological Footprint, Mathis Wackernagel & William Rees, 1998

Offered (semester and year): spring 2014

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Zbigniew Oksiuta

* Beginning in 2016 – 17, this course will become ARCH-4780.

ARCH-4250.60: Architecture Design 5* (6 credits) (CHINA)

Course Description (limit 25 words): This was an upper level design studio and cultural immersion into the architecture and urban issues of China taught in collaboration with TCAUP, Shanghai, China.

Course Goals and Objectives: To provide students with critical insight into the ecological nature of architecture by assessing the conditions through which specific urban environments and architectural projects are manifest. To expand students technical expertise with digital technology/ and to equip students with a fluid digital work flow linked to a multiplicity of methods. To equip students with techniques of visual analysis to engage, assess, and communicate issues concerning the urban environment.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
attendance and participation, 10%
research cluster assignment, 20%
project team midterm, 25%
project team final, 45%
extracredittravel assignment, 5%

Prerequisites: ARCH-4240

Textbooks/Learning Resources:
"Architectural Mimicry in Contemporary China",Bosker, Bianca
"TheWork of Art in the Age of Mechanical Reproduction, Benjamin, Walter

Offered (semester and year): spring 2014 (CHINA)

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Kyle Stover, Wei Wei (Tongji CAUP –China), Hong Wei Lu (Tongji CAUP –China)

* This course will be replaced with ARCH-4780.60 in 2016 – 17.

ARCH-4250.70: Architecture Design 5* (6 credits) (INDIA)

Course Description: This studio focused on the design of two structures, a gatehouse and a library, associated with the Millowner's Building in Ahmedabad India.

Course Goals and Objectives: When students complete this studio they will be able to:
1. design sensitively within a context having great spatial diversity.
2. demonstrate an advanced skill of connecting form, space, and temporality through controlled human movement.
3. demonstrate the ability to consider the elements as aesthetic factors in architectural design.
4. calibrate the poetics of architecture with site and program.
5. extract productively higher dimensional propositions from two-dimensional artifacts

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
Visual & experiential analyses of Le Corbusier's Millowner's Building and its site: 15%
Design of a gatehouse to the Millowner's Building from Ashram Road: 25%
Design of a research library and public spaces adjacent the Millowner's Building and along the Sabarmati Riverfront: 60%

Prerequisites: ARCH-4240

Textbooks/Learning Resources: This studio was given with a companion course, ARCH-4976.70 that included numerous readings on the ideas and work of Le Corbusier.
In addition, students had the opportunity to visit and study several other works by Le Corbusier in India

Offered (semester and year): spring 2015 (INDIA)

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): David Bell

*This studio will be replaced with ARCH-4780.70 in 2016 - 17.

ARCH-4250.80: Architecture Design 5* (6 credits) (CASE)

Course Description: This semester seeks to resolve the realities of design actualization and technological research using a single, speculative project to produce both knowledge and architecture.

Course Goals and Objectives:
Each student will develop ways to approach with equal measure issues of site, environment, context, history, concept, structure, materials, systems, and geometry in order to provoke a tangible and persuasive architecture that:
1. Advances their insights and thesis in response to the program brief
2. Furthers ecological and parametric approaches to the building and thinking of architecture and design
3. Produces architectural knowledge and expands possibility through the act of integration, and ecological thinking
Students will develop a capacity to design at various scales of material realization and assembly in support and development of conceptual intentions/ideas while integrating building, environmental, and programmatic systems and addressing regulatory and technical requirements. Students are expected to iteratively address multiple design considerations and in doing so to develop their awareness and understanding regarding how:
1. One scale informs/impacts another,
2. Criteria established by considerations of environmental building performance inform and positively affect morphology, structure, envelope and the planning and design of buildings
3. Disciplines affecting architectural design (structural, mechanical, acoustic, lighting, etc...) cannot be seen as exclusive, isolated, or compartmentalized practices, and to develop the capacity to integrate that understanding early into the design process.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline:
The 17th Century Salon as program and ground for speculation and the projection of living information and social interaction will be the focus of the studio's attention and the testing bed of our methodology this semester. In particular, the studio will reconsider the existing space of the current faculty office and conference area at CASE, a 450 ft2 space that operates as both the front door and main gathering area for the center. The question we will ask is how the reconsideration of the surfaces that define the room and their constituent and internal modularity and makeup can participate in the making of the room as CASE's Salon—a place of interaction, projection, and performance.
The project will move through issues of existing condition analysis (10%), programming and conceptualization (20%), material design and processing(30%), prototyping (20%), installation (15%), gathering and processing of data (5%)all in the context of reconsidering the actual architecture of the room, and its transformation into the CASE Salon.

Prerequisites: ARCH-4240

Course Texts:
Koolhaas, Rem. *Delirious New York: A Retroactive Manifesto for Manhattan*,. New York: Monacelli Press, 1994.

Offered (semester and year): spring semester annually (CASE)

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Demetrios Comodromos, Nancy Diniz, Josh Draper, Anna Dyson

* Beginning in 2016 - 17, this course will become ARCH-4780.80.

ARCH-4540: Professional Practice 1 (2 credits)

Course Description (limit 25 words): This course analyzes assemblies and occupancies of construction, building codes & regulations, sustainability, cost estimating, project management, legal responsibilities and professional conduct.

Course Goals and Objectives: ProPractice 1 explores how architects realize design projects—taking them from conception through development, documentation, and construction and the collateral efforts beyond pure design essential for successful projects. This requires investigation and proving understanding of/ability within legal, code/regulatory, professional, contractual, and stakeholder and marketplace environments, within which designs become buildings.

Student Performance Criterion/a addressed (list number and title): B.3: Codes & Regulations, B.4: Technical Documentation, D.1: Stakeholder Roles in Architecture, D.2: Project Management, D.4: Legal Responsibilities, D.5: Professional Conduct

Topical Outline (include percentage of time in course spent in each subject area)*:
1. Building Codes & Regulations & Technical Documentation – 50%
2. Sustainability Constructs in Professional Practice – 15%
3. Construction Cost Estimating – 20%
4. Professional Conduct, Legal Responsibilities and Project Management – 15%

*Items 1.-3. are intended to be comprehensively addressed, Item 4. fundamentals are intended to be introduced in ProPractice I; all correspond to the following categories: SPC B.3 - Codes and Regulations; SPC B.4 - Technical Documentation; SPC D.1 - Stakeholder Roles in Architecture; SPC D.2 - Project Management; SPC D.4 - Legal Responsibilities; SPC D.5 - Professional Conduct

Prerequisites: ARCH-4540 co-requisite for ARCH-4300*

Textbooks/Learning Resources:
Required:
Building Codes Illustrated, Fourth Edition, A Guide to Understanding the International Building Code, by Ching and Winkel;
Access to:
current online version of the *2010 International Building Code for New York State*
Library reference:
1. *The Architect's Studio Companion*, by Allen and Iano
2. *Architectural Building Codes*, by James G. Scott
3. *Construction Materials; Types, Uses and Applications*, by Caleb Hornbostel

Offered (semester and year): fall and spring semesters annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Stephen F. Reilly

* ARCH-4300 and its relevant content will become ARCH-4830 beginning in fall 2016. ARCH-5380 is co-listed with ARCH-4540.

ARCH-4560: Materials and Enclosures (2 credits)

Course Description: This course aims to synthesize building enclosures with the social, historical, and technical aspects of contemporary practice via in-depth explorations of applied and conceptual logics.

Course Goals + Objectives:
In addition to fostering a deep understanding of the meaning, materials and systems that are combined in complex ways to create the basis of enclosures, this class aims to:
1. Build a foundation of scientific knowledge in the use of materials and the detailing of enclosures.
2. Utilize a foundation of knowledge to explore new systems and innovative opportunities.
3. Develop documentation and representational techniques appropriate to the communication of complex enclosure systems.

Student Performance Criterion/a addressed (list number and title): B.7: Building Envelope Systems & Assemblies, B.8: Building Materials & Assemblies

Topical Outline (include percentage of time in course spent in each subject area):
1. The course begins with two surveys: the first situates enclosures in a Historical/Social Survey and the second in a Technical Survey of Enclosure types (20% combined),
2. The criteria for enclosure design is developed to define the material logic of wrapping enclosures (20%)
3. Layered Enclosures (20%)
4. Technical Operations + Altering (20%)
5. Design Synthesis (20%).

Prerequisites: ARCH-2510

Textbooks/Learning Resources:
Herzog, Thomas et.al., *Façade Construction Manual*, Basel: Birkhauser, 2004.

Offered (semester and year): spring semesters annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Demetrios Comodromos, Ajmal Aqtash

ARCH-4740: Building Systems & Environment (4 credits)

Course Description: Design analysis and performance characteristics of building environmental systems, emphasizing heating, cooling, ventilation, and lighting systems, electrical systems, acoustics, water, waste, and drainage systems.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. develop systems that provides human comfort in buildings for specific climatic zones.
2. analyze the spatial requirements necessary for the building systems to support the various and unique programs that is encountered in modern buildings.
3. examine the requirements of a studio conceptual design project and develop a human comfort system appropriate to the program and climatic conditions while insuring that the architecture and engineering design are integrated and developed with sustainable principles.
4. Perform energy audits on buildings, calculate acoustical and lighting requirements for buildings

Student Performance Criterion/a addressed (list number and title): B.6: Environmental Systems, B.9: Building Service Systems, B.10: Financial Considerations

Topical Outline (include percentage of time in course spent in each subject area):
Thermal Comfort, 15%, Water, Waste, and Drainage, 25%, Lighting, 20%, Electrical Design and Distribution, 25%, Acoustics, 15%

Prerequisites: ARCH-2360

Textbooks/Learning Resources:
Allen, Edward, *The Architect's Studio Companion*
Lechner, Norbert, *Heating, Cooling, Lighting, Sustainable Design Methods for Architects*

Offered (semester and year): spring semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Oliver Holmes

ARCH-4830: Integrated Design Development Studio* (5 credits)

Course Description: A collaborative integrative technology-based design studio emphasizing materialization and making architectural design projects concerning program, environment,, structure, life-safety, building envelope, materials and integrated building systems.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. evaluate, select creatively, and employ materials and construction means to realize an architectural project in support of well conceived and articulated design intentions.
2. integrate program, life safety, structure, building envelope, materials, building systems and technologies into an architectural design including, but not limited to the International Building Code (IBC), (ADA), environmental awareness and response, enclosure, lighting and HVAC.
3. produce and organize an effective set of technical drawings utilizing a combination of analog and digital two and three-dimensional tools.

Student Performance Criterion/a addressed: A.1: Professional Communication Skills, A.2: Design Thinking Skills, B.1: Pre-Design (focus on code and standards), B.3: Codes and Regulations, B.4: Technical Documentation, B.5: Structural Systems, B.9: Building Service Systems, C.2: Integrated Evaluations and Design-Making Decision Process, C.3: Integrative Design

Topical Outline (include percentage of time in course spent in each subject area):
Diagramming and Conceptual Framing – 1 week (10%)
Bulk and Mass – 1 week (10%)
Principles of Life Safety, Universal Access and Code Analysis – 1 week (10%)
Programming – 1 week (10%)
Structural Systems – 1 week (10%)
Energy, Environment and Comfort – 1 week (10%)
Building Envelope – 1 week (10%)
Site Design and Development – 1 week (10%)
Materials and Systems – 1 week (10%)
Professional Practice(s) and Building Visits (NYC) – 3 days (10%)
Building Information Modeling – Integrated throughout
Technical Documentation and Outline Specification – Integrated throughout
Integrative Evaluations and Decision Making – Integrated throughout
Integrative Design – Integrated throughout

Prerequisites: ARCH-4820, ARCH-4330, ARCH-4740; ARCH-4540 is co-requisite

Textbooks/Learning Resources:
The Architect's Studio Companion, Edward Allen and Joseph Iano
The Fundamentals of Building Construction-Materials and Methods, Edward Allen
Façade Construction Manual, Birkhauser
The International Building Code / 2010; A course reader – see full syllabus

Offered (semester and year): fall and spring semesters annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit):
S'14: Lonn Combs, Alexander Pincus; F'14: Ted Krueger, Ashmal Aqtash, Lauren Thomsen (BIM); S'15:Mark Mistur, Erik Churchill, Lauren Thomsen (BIM): F'15: Mark Mistur, Erik Churchill, Lauren Thomsen (BIM); Michael Stein, P.E., and Will Laufs, P.E. (Bedford Engineering Professors)

* Comparable to and replaces ARCH-4300, Design Development [6cr], the final iteration of which is to be in spring 2016. ARCH-4830 will be co-listed with ARCH-6630.

B. ARCH REQUIRED COURSES
4th-YEAR FALL SEMESTER

PLEASE NOTE

1. ARCH-4240 is typically a fall semester [vertical-option] studio. However, if a student gets out of sequence for any reason, ARCH-4240 could be a spring semester [vertical-option] studio.

2. ARCH-4250 & -4260 are typically spring and fall [vertical-option] studios respectively but both often can occur as [vertical-option] studios in both semesters depending on when a student takes ARCH-4300 or if a student gets out of sequence for any other reason.

ARCH-4050: Cities & Their Territories (2 credits)

Course Description (limit 25 words): This course examines architecture as a fundamental part of the forces of urbanization and humanity's interventions into the landscape and environment historically and contemporarily.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. identify, analyze and explain the important theories, technologies, and polemics underwriting urban growth and its relation to geographical territory change over the past two centuries.
2. present written summaries of canonical works and historically significant urban patterns and projects and their relationship to urban theory and design.
3. analyze, discuss, and draw conclusions orally and in writing regarding the historical evolution of urban morphology and landscape phenomena.
4. demonstrate a working knowledge of the forces that philosophy, literature, art, economics, climate, building technology, and history have on the aggregate development of cities and lands in western and non-western civilizations.
5. express and evaluate verbally and graphically the vocabularies of urbanism and landscape.
6. explain the ideological shifts in history that have shaped our notions of nature, the land, human settlements and actions in relation to these conditions.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
Utopia, Dystopia, and Urbanization, 15%, The Garden in the City, 14%, Speed City, Nomadic City/City of Exile, 14%, Network City, 14%, Anarchic and Non-Plan Cities, 14%, Global Cities, Post-Functional Cities,and Edge Cities, 15%, Event Cities, 14%

Prerequisites: Arch-4150 {currently ARCH-2130, which will change in spring 2017]

Textbooks/Learning Resources: David Harvey, "The Figure of the City," Françoise Choay, "Utopia and the Philosophical Status of Constructed Space," Anthony Vidler, "The Scenes of the Street: Transformation in Ideal and Reality, 1750-1871," Georg Simmel, "The Metropolis and Mental Life," Charles Waldheim, "Landscape Urbanism: a Genealogy," Sanford Kwinter, "Le Città Nuova: Modernity and Continuity," David Bell, "The Panoptic Garden", Leo Marx, *The Machine in the Garden*

Offered (semester and year): fall semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Brendan Moran

ARCH-4240, -4250, -4260: Architecture Design 4, 5, 6* (6 credits [current])

Course Description: This upper division design studio explores topics of contemporary interest to the discipline that are defined by the faculty member teaching it.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. produce design projects that engage complex issues of interest to the contemporary practice of architecture.
2. develop and represent verbally and graphically architectural research through design.
3. present and represent verbally and graphically complex and challenging design ideas in a comprehensive and coherent argument.
4. present and represent comprehensive design work through models, drawings, prototypes, and demonstrations as appropriate to the nature of the project.

Student Performance Criterion/a addressed (list number and title): none assigned to this course.

Topical Outline (include percentage of time in course spent in each subject area): One of these elective studios (Architectural Design Studios 5, 6, and 7) is required in either semester of the 3rd and 4th years, and in the fall of the 5th year in the undergraduate professional curriculum. These studios are intended to allow students to develop an education consistent with personal goals. Each studio may have upper division students of any year. Students may elect to participate in a foreign and off-campus study options to fulfill this studio requirement. The topics will differ from semester to semester and from faculty member to faculty member.

Prerequisites: ARCH-2230 is/was the prerequisite for students in graduating classes 2016 – 2018, ARCH-2830 is the prerequisite for classes graduating in 2019 and afterwards. Those students will take ARCH-4770, -4780, - 4790.

Textbooks/Learning Resources: This will be determined by the faculty member offering the particular studio.

Offered (semester and year): fall and spring semesters annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit):

ARCH-4240	ARCH-4250	ARCH-4260
Francis Bitonti	David Bell (in India)	Francis Bitonti
Xuedi Chen	Francis Bitonti	Xuedi Chen
Michael Oatman	Xuedi Chen	D. Comodromos (at CASE)
Zbigniew Oksiuta	D. Comodromos (at CASE)	Melanie Fessel
Kyle Stover (in China)	Melanie Fessel	Fleet Hower
	Mitchell Joachim	Mitchell Joachim
	Zbigniew Oksiuta	Michael Oatman
	Andrew Saunders	Zbigniew Oksiuta
	Kyle Stover (in China)	Andrew Saunders
		Kyle Stover (in China)
		David Bell (in India)

*Beginning in the 2016-17 academic year ARCH-4240, -4250, & -4260 will be replaced by ARCH-4770, -4780, & -4790.

ARCH-4260: Architecture Design 6* (6 credits)

Course Description: The studio aims to take a close look at the relationship between the design school as an evolving program and the environment that houses it.

Course Goals and Objectives: The intention of this studio is for the student to develop an understanding of the history and theory that encompass the methods of educating architects. A significant weight will be on the critical analysis of ecological design claims in specific learning contexts. Students will create a descriptive synthesis of one or more significant experimental schools of design and
1. describe how that institute created newly formatted educational spaces, facilities, methods, and cultures that manifested radical shifts for design pedagogy.
2. discuss in detail the seminal interactions between students and teachers that lead to architectural/ design revolutions.
3. focus on key typological and technological changes that allowed for a particular faculty to break away from existing normative models.
4. develop a new pedagogical model and propose how it is physically expressed.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
1. analysis of design school pedagogy, 30%
2. case study of experimental design schools, 30%
3. development of design proposals for a new design school, 40%

Prerequisites: ARCH-4250

Textbooks/Learning Resources:
Education of an Architect by John Hejduk.
Architecture School: Three Centuries of Educating Architects in North America by Joan Ockman.
Programs and Manifestoes on 20th-Century Architecture by Ulrich Conrads.

Offered (semester and year): fall 2014

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Mitchel Joachim, Melanie Fessel

* Beginning in 2016 – 17, this course will become ARCH-4790.

ARCH-4260: Architecture Design 6* (Cinetecture) (6 credits)

Course Description (limit 25 words): Cinetecture explores the language of cinema enabling students to approach design via another critical practice. Special emphasis was placed on the techniques of film.

Course Goals and Objectives: This course encourages students:
1. to develop an awareness and understanding of the basic chronology of cinema historically, and how that history relates to current and evolving practices
2. to critically analyze a particular film (the virtual) and use that analysis as the basis for an architectural design process (the practical) that is iterative, speculative and buildable
3. to develop an awareness and understanding of the basic concepts of design development
4. to explore the conceptual and material premises of various 20th/21st century filmmakers as a way to gain access to the particular challenges of the creation and presentation of their work
5. to understand the implications of cinema's influence on architecture and vice/versa
6. to understand role of the audience as subject and object, material and community
7. to integrate an installation and a site via the mechanisms of display, audience and other programs

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
1) Film theory – German, Soviet influences on Hitchcock, Hitchcock's filmography (15%)
2) Hitchcock's innovations in set building/development of integrated camera work (15%)
3) Team development (10%)
4) Architectural precedents (15%)
5) Innovations/techniques including first British sound picture, sound effects, editing (25%)
6) Social experiments/material testing (20%)

Prerequisites: ARCH-4250

Textbooks/Learning Resources: Bell, David, "The Carpenter's Apprentice," and a variety of relevant cinema articles and essays

Offered (semester and year): fall 2014, spring 2014

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Michael Oatman

* Beginning in 2016 – 17, this course will become ARCH-4790.

ARCH-4260: Architecture Design 6* (Minimal vs Maximal) (6 credits)

Course Description (limit 25 words): Students will be creating island, a mobile New Atlantis, minimal independent society and will assign features and architecture necessary to make it alive

Course Goals and Objectives: This course intends:
1. to introduce students to the exploration of biological systems for architectural purpose
2. to introduce students to a set of unconventional materials in architecture
3. to introduce students to basic experiments of life science
4. to introduce students to the exploration of self-organizational processes in matter
5. to engage students in the exploration of human household as dynamic system in environment

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
Participation in studio disscusion 15%
Presentation of concepts, drawings and models 15%
Presentation of student's final project in progress 25%
Final project 35%
Attendance/Participation 10%

Prerequisites: ARCH-4250

Textbooks/Learning Resources:
1. The Selfish Gene, Richard Dawkins, 1976
2. Climbing Mount Improbable, Chapter 7, The Robot Repeater,
3. The New Atlantis, Francis Bacon, 1624
4. Forms, Processes, Consequences, Zbigniew Oksiuta, 2004
5. Sk-Interfaces, Jens Hauser, 2008
6. Radical Evolution, Joel Garreau, 2005
7. Claudia Hildner, Small Houses, 2011
8. Christian Schittich (Ed), Small Structures, 2010
9. Gunter Nitschke, The Architecture of the Japanese Garden, 1991
10. Metabolism, The City of the Future, Exhibition Catalogue, Mori Art Museum
11. Our Ecological Footprint, Mathis Wackernagel & William Rees, 1998

Offered (semester and year): fall 2014

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Zbigniew Oksiuta

* Beginning in 2016 – 17, this course will become ARCH-4790.

ARCH-4260.50: Architecture Design 6 (ROME) (6 credits)

Course Description (limit 25 words): Presuming a phenomenological premise, this course explores analogies between the human body and the physical expressiveness in the art and architecture of the Roman Baroque**.**

Course Goals and Objectives: With the goal of reinterpreting Baroque membranes, the course seeks to cultivate through architectural design a humanism that could be complementary to a technical side of the profession with deep philosophical concepts and ethics rooted on an understanding of the origins of the European culture promoting discussion and teamwork. To cultivate a multidisciplinary thinking that combines art, architecture, science, philosophy and social research. To cultivate in the students a greater understanding of Mediterranean culture emphasizing its phenomenological approach in architecture (which is a materialization of a specific way of thinking and performing), its art, history, mythology and inventions.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
Design studio unfolds in three parts that will progressively inform a final single project:
1. SKIN IN MOTION: an analysis of Baroque masterpieces where the students analyzed and focused on the representation of three aspects: light, movement, and layering. (33.33%)
2. AUGMENTED BODIES: exploration and representation of their findings through physical modeling and material experimentation (33.33%)
3. MULTIPLE BODIES & SPACE: implementation and integration of a system in a space in which this significant model has been installed; where light, movement and layered material will express perceptual and poetic conditions of the original analyzed piece. This last big model was developed teams of three or four students. Only the most promising projects were developed in this last phase. (33.34%)

Prerequisites: ARCH-4250

Textbooks/Learning Resources: Leonardo da Vinci Drawings reference books, *The Lives of the Artists* by Giorgio Vasari, *Borromini* by Paolo Portoghesi, “Born Under Saturn” by Wittkower, “Itaca” C. Kavafis, “Greek Myths” Robert Graves.

Offered (semester and year): fall 2014 (ROME)

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Elena Perez-Guembe

ARCH-4260.50: Architecture Design 6* (6 credits) (ROME)

Course Description: Using the city of Rome as a context, this studio explores the nature of spiritual and sacred space beyond conventional notions of religion.

Course Goals and Objectives: The intent of this studio is:
1. to introduce students to interdisciplinary thinking and working process
2. to introduce students to the creation of new independent social features
3. to introduce students to understanding of the social and political role of architecture in society
4. to introduce students to understanding of the spiritual role of architecture
5. to familiarize students with the autonomous creation of architectural tasks, and development of innovative programs.
6. to introduce students to understand the architectural messages beyond the historical form and style

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
1. research on the nature of sacred spaces, 20%
2. preliminary design exercises, 30&
3. final design work, 50%

Prerequisites: ARCH-4250

Textbooks/Learning Resources:
1. Mircea Eliade, *The Sacred and the Profane*,
2. Ulrich Connrads, *Programs and manifestos on 20th-century architecture*
3. Lao Tsu, *Tao te Ching*
4. Richard Dawkins ,*The Selfish Gene*
5. Susan Blackmore, *The Meme Machine*, 1999
6. Ray Kurzweil, *The singularity is near*, 2005
7. Zbigniew Oksiuta, *Forms, Processes, Consequences*, 2004

Offered (semester and year): fall 2015 (ROME)

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Zbigniew Oksiuta

* Beginning in 2016 – 17, this course will become ARCH-4790.50

ARCH-4260.80: Architecture Design 6* (6 credits) (CASE)

Course Description: This semester seeks to resolve the realities of design actualization and technological research using a single, speculative project to produce both knowledge and architecture.

Course Goals and Objectives:
Each student will develop ways to approach with equal measure issues of site, environment, context, history, concept, structure, materials, systems, and geometry in order to provoke a tangible and persuasive architecture that:
1. Advances their insights and thesis in response to the program brief
2. Furthers ecological and parametric approaches to the building and thinking of architecture and design
3. Produces architectural knowledge and expands possibility through the act of integration, and ecological thinking
Students will develop a capacity to design at various scales of material realization and assembly in support and development of conceptual intentions/ideas while integrating building, environmental, and programmatic systems and addressing regulatory and technical requirements. Students are expected to iteratively address multiple design considerations and in doing so to develop their awareness and understanding regarding how:
1. One scale informs/impacts another,
2. Criteria established by considerations of environmental building performance inform and positively affect morphology, structure, envelope and the planning and design of buildings
3. Disciplines affecting architectural design (structural, mechanical, acoustic, lighting, etc...) cannot be seen as exclusive, isolated, or compartmentalized practices, and to develop the capacity to integrate that understanding early into the design process.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline:
The 17th Century Salon as program and ground for speculation and the projection of living information and social interaction will be the focus of the studio's attention and the testing bed of our methodology this semester. In particular, the studio will reconsider the existing space of the current faculty office and conference area at CASE, a 450 ft2 space that operates as both the front door and main gathering area for the center. The question we will ask is how the reconsideration of the surfaces that define the room and their constituent and internal modularity and makeup can participate in the making of the room as CASE's Salon—a place of interaction, projection, and performance.
The project will move through issues of existing condition analysis (10%), programming and conceptualization (20%), material design and processing(30%), prototyping (20%), installation (15%), gathering and processing of data (5%)all in the context of reconsidering the actual architecture of the room, and its transformation into the CASE Salon.

Prerequisites: ARCH-4250

Course Texts:
Koolhaas, Rem. *Delirious New York: A Retroactive Manifesto for Manhattan*,. New York: Monacelli Press, 1994.

Offered (semester and year): fall semester annually (CASE)

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Demetrios Comodromos, Nancy Diniz, Josh Draper, Anna Dyson

* Beginning in fall 2016, this course will become ARCH-4790.80.

ARCH-4300: Design Development* (6 credits)

Course Description: A collaborative integrative technology-based design studio emphasizing materialization and making architectural design projects concerning program, environment,, structure, life-safety, building envelope, materials and integrated building systems.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. Evaluate, select creatively, and employ materials and construction means to realize an architectural project in support of well conceived and articulated design intentions.
2. Integrate program, life safety, structure, building envelope, materials, building systems and technologies into an architectural design including, but not limited to the International Building Code (IBC), (ADA), environmental awareness and response, enclosure, lighting and HVAC.
3. Produce and organize an effective set of technical drawings utilizing a combination of analog and digital two and three-dimensional tools.

Student Performance Criterion/a addressed: A.1: Professional Communication Skills, A.2: Design Thinking Skills, B.1: Pre-Design (focus on code and standards), B.3: Codes and Regulations, B.4: Technical Documentation, B.5: Structural Systems, B.9: Building Service Systems, C.2: Integrated Evaluations and Design-Making Decision Process, C.3: Integrative Design

Topical Outline (include percentage of time in course spent in each subject area):
Diagramming and Conceptual Framing – 1 week (10%)
Bulk and Mass – 1 week (10%)
Principles of Life Safety, Universal Access and Code Analysis – 1 week (10%)
Programming – 1 week (10%)
Structural Systems – 1 week (10%)
Energy, Environment and Comfort – 1 week (10%)
Building Envelope – 1 week (10%)
Site Design and Development – 1 week (10%)
Materials and Systems – 1 week (10%)
Professional Practice(s) and Building Visits (NYC) – 3 days (10%)
Building Information Modeling – Integrated throughout
Technical Documentation and Outline Specification – Integrated throughout
Integrative Evaluations and Decision Making – Integrated throughout
Integrative Design – Integrated throughout

Prerequisites: ARCH-4820, ARCH-4330, ARCH-4740; ARCH-4540 is co-requisite

Textbooks/Learning Resources:
The Architect's Studio Companion, Edward Allen and Joseph Iano
The Fundamentals of Building Construction-Materials and Methods, Edward Allen
Façade Construction Manual, Birkhauser
The International Building Code / 2010; A course reader – see full syllabus

Offered (semester and year): Fall and Spring semesters annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit):
S'14: Lonn Combs, Alexander Pincus; F'14: Ted Krueger, Ashmal Aqtash, Lauren Thomsen (BIM); S'15:Mark Mistur, Erik Churchill, Lauren Thomsen (BIM): F'15: Mark Mistur, Erik Churchill, Lauren Thomsen (BIM); Michael Stein, P.E., and Will Laufs, P.E. (Bedford Engineering Professors)

* This studio will be taught for the last time in spring 2016. Afterwards, it is replaced by ARCH-4830.

ARCH-4540: Professional Practice 1 (2 credits)

Course Description (limit 25 words): This course analyzes assemblies and occupancies of construction, building codes & regulations, sustainability, cost estimating, project management, legal responsibilities and professional conduct.

Course Goals and Objectives: ProPractice 1 explores how architects realize design projects—taking them from conception through development, documentation, and construction and the collateral efforts beyond pure design essential for successful projects. This requires investigation and proving understanding of/ability within legal, code/regulatory, professional, contractual, and stakeholder and marketplace environments, within which designs become buildings.

Student Performance Criterion/a addressed (list number and title): B.3: Codes & Regulations, B.4: Technical Documentation, D.1: Stakeholder Roles in Architecture, D.2: Project Management, D.4: Legal Responsibilities, D.5: Professional Conduct

Topical Outline (include percentage of time in course spent in each subject area)*:
1. Building Codes & Regulations & Technical Documentation – 50%
2. Sustainability Constructs in Professional Practice – 15%
3. Construction Cost Estimating – 20%
4. Professional Conduct, Legal Responsibilities and Project Management – 15%

*Items 1.-3. are intended to be comprehensively addressed, Item 4. fundamentals are intended to be introduced in ProPractice I; all correspond to the following categories: SPC B.3 - Codes and Regulations; SPC B.4 - Technical Documentation; SPC D.1 - Stakeholder Roles in Architecture; SPC D.2 - Project Management; SPC D.4 - Legal Responsibilities; SPC D.5 - Professional Conduct

Prerequisites: ARCH-4540 co-requisite for ARCH-4300*

Textbooks/Learning Resources:
Required:
Building Codes Illustrated, Fourth Edition, A Guide to Understanding the International Building Code, by Ching and Winkel;
Access to:
current online version of the *2010 International Building Code for New York State*
Library reference:
1. *The Architect's Studio Companion*, by Allen and Iano
2. *Architectural Building Codes*, by James G. Scott
3. *Construction Materials; Types, Uses and Applications*, by Caleb Hornbostel

Offered (semester and year): fall and spring semesters annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Stephen F. Reilly

* ARCH-4300 and its relevant content will become ARCH-4830 beginning in fall 2016. ARCH-5380 is co-listed with ARCH-4540.

ARCH-4690: Case Studies* (4 credits)

Course Description: In this course, students develop an investigative analysis of a contemporary built work through research, visitation, interviews leading to the authoring of a publishable book.

Course Goals and Objectives:
This seminar focuses on teaching students how to investigate and research the built environment and it's larger cultural, social, economic and professional dimensions. The goal of this research and the documentation of collected and original investigative work is to expand the larger understanding of architecture as a cultural practice. The course and requisite assignments is intended to contribute to students' ability to critically observe and analyze, to raise awareness regarding the state of the profession at its most progressive frontier and your relation to it, and to improve architectural knowledge and scholarship with respect to innovation and progress in contemporary practice in order to
1. to gain substantive [deep] knowledge of a significant contemporary building
2. to expand awareness of contemporary influences on architecture
3. to develop an awareness of design as a mode of inquiry and/or research
4. to improve architectural knowledge and scholarship

Student Performance Criterion/a addressed (list number and title): A.1: Professional Communication Skills**,** C.1: Research

Topical Outline (include percentage of time in course spent in each subject area):
1. Preliminary Project Selections and General Research: 10%
2. Research Topic Areas: 50%
a. The Practice of the Architect, Engineers and Key Consultants
b. Physical, Geographical, Environmental Contexts
c. Program(s) and Performance(s)
d. Technologies and Techniques
e. Influences and Innovations
3. Final Project - Documentation, development of Case Study book**:** 40%

Prerequisites: ARCH-2120

Textbooks/Learning Resources:
The primary "text" for the course is the project of study. In addition, there will be a variety of readings assigned, particularly in relation to the professional and intellectual context(s). Some will be class wide, but in most instances, they will be project-based, identified by the instructor and/or team.
Francis, Mark. *A Case Study Method for Landscape Architecture*, Landscape Architecture Foundation, Sept. 1999.
Friedman, Daniel S., *In Any Case: Ten Questions for the Large Firm Roundtable*, University of Illinois at Chicago, Keynote Remarks 2004 Cranbrook Teachers Seminar.
Soy, Susan K. *The Case Study as a Research Method*, University of Texas at Austin, 1997.

Offered (semester and year): fall semester annually*

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Lonn Combs

*This course will be taught for the last time in fall 2015.

B. ARCH REQUIRED COURSES
4th-YEAR SPRING SEMESTER

PLEASE NOTE

1. ARCH-4240 is typically a fall semester [vertical-option] studio. However, if a student gets out of sequence for any reason, ARCH-4240 could be a spring semester [vertical-option] studio.

2. ARCH-4250 & -4260 are typically spring and fall [vertical-option] studios respectively but both often can occur as [vertical-option] studios in both semesters depending on when a student takes ARCH-4300 or if a student gets out of sequence for any other reason.

ARCH-4040: Cities/Lands* (4 credits)

Course Description: This course examines issues and polemics related to urbanization and land settlement over the past two centuries.

Course Goals and Objectives: The purpose of this course is to understand better the role spatial and territorial organization plays in the construction of social practices, human subjectivities, and technologies of power. Upon completion, students will demonstrate the ability:
1. to gain an understanding of the urban elements AND the historical evolution of urban morphology [evaluated in seminar presentations, discussions and final exam or paper]
2. to think and look analytically into urbanism, through texts and images, both known and unknown [evaluated in discussions and final exam/paper]
3. to gain an awareness of the forces that philosophy, literature, art, economics, climate, building technology, and architectural history have on the aggregate development of cities and lands [evaluated in seminar presentations, discussions and final exam or paper]
4. to become familiar with visual and verbal vocabularies of urbanism, and coherently communicate these ideas in written and oral forms [evaluated in seminar presentations, discussions and final exam or paper]
5. to develop an awareness and understanding of the development of European, U.S. and Non-Western urbanism, and to learn the differences through comparative analysis of texts and images of urban design [evaluated in seminar presentations, discussions and final exam or paper]
6. to understand the ideological shifts in history that have shaped our notions of nature, the land, our settlements, and human actions in relation to these conditions [evaluated in seminar presentations, discussions and final exam or paper]

Student Performance Criterion/a addressed: none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
Each of the following categories constitutes approximately 7.7% of the course: 1. Introduction, 2. Utopia, 3. Speed, 4. Infrastructure, 5. Surveillance & Exile, 6. Private / Public, 7. Globalization, 8. Wilderness, 9. Territory & Power, 10. Land Art & Environmental Sculpture, 11. The Rise of Ecological Consciousness, 12. Contemporary Ecologies, 13. Wastelands

Prerequisites: ARCH-4140

Textbooks/Learning Resources: Among the numerous texts used in the course, were the following:
1. David Harvey, "The Figure of the City," in *Spaces of Hope* (Berkeley: University of California Press, 2000).
2. Anthony Vidler, "Cities of Tomorrow," *Artforum International* (Sep 2012).
3. Wolfgang Schivelbusch, “Railway Space and Railway Time,” in *The Railway Journey: The Industrialization of Time and Space in the 19th Century* (Berkeley: University of California Press, 1986), 33-44.
4. Manuel Castells, “The Space of Flows,” in *The Rise of the Network Society*. Malden, MA: Wiley-Blackwell, 1996, 407-459.
5. Paul Virilio, “The Overexposed City,” in *Lost Dimension*, trans. Daniel Moshenberg. New York: Semiotext(e), 1991, 9–27.
6. Peter Hall, “The City of Perpetual Public Works,” in *Cities in Civilization*. London: Weidenfelt & Nicolson, 1998, 706-745.

Offered (semester and year): spring annually*

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Ralph Ghoche

*This course was taught for the final time in spring 2014.

ARCH-4240, -4250, -4260: Architecture Design 4, 5, 6 * (6 credits [current])

Course Description: This upper division design studio explores topics of contemporary interest to the discipline that are defined by the faculty member teaching it.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. produce design projects that engage complex issues of interest to the contemporary practice of architecture.
2. develop and represent verbally and graphically architectural research through design.
3. present and represent verbally and graphically complex and challenging design ideas in a comprehensive and coherent argument.
4. present and represent comprehensive design work through models, drawings, prototypes, and demonstrations as appropriate to the nature of the project.

Student Performance Criterion/a addressed (list number and title): none assigned to this course.

Topical Outline (include percentage of time in course spent in each subject area): One of these elective studios (Architectural Design Studios 5, 6, and 7) is required in either semester of the 3rd and 4th years, and in the fall of the 5th year in the undergraduate professional curriculum. These studios are intended to allow students to develop an education consistent with personal goals. Each studio may have upper division students of any year. Students may elect to participate in a foreign and off-campus study options to fulfill this studio requirement. The topics will differ from semester to semester and from faculty member to faculty member.

Prerequisites: ARCH-2230 is/was the prerequisite for students in graduating classes 2016 – 2018, ARCH-2830 is the prerequisite for classes graduating in 2019 and afterwards. Those students will take ARCH-4770, -4780, - 4790.

Textbooks/Learning Resources: This will be determined by the faculty member offering the particular studio.

Offered (semester and year): fall and spring semesters annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit):

ARCH-4240	ARCH-4250	ARCH-4260
Francis Bitonti	David Bell (in India)	Francis Bitonti
Xuedi Chen	Francis Bitonti	Xuedi Chen
Michael Oatman	Xuedi Chen	D. Comodromos (at CASE)
Zbigniew Oksiuta	D. Comodromos (at CASE)	Melanie Fessel
Kyle Stover (in China)	Melanie Fessel	Fleet Hower
	Mitchell Joachim	Mitchell Joachim
	Zbigniew Oksiuta	Michael Oatman
	Andrew Saunders	Zbigniew Oksiuta
	Kyle Stover (in China)	Andrew Saunders
		Kyle Stover (in China)
		David Bell (in India)

*Beginning in the 2016-17 academic year ARCH-4240, -4250, & -4260 will be replaced by ARCH-4770, -4780, & -4790.

ARCH-4260: Architecture Design 6* (Cinetecture) (6 credits)

Course Description (limit 25 words): Cinetecture explores the language of cinema enabling students to approach design via another critical practice. Special emphasis was placed on the techniques of film.

Course Goals and Objectives: This course encourages students:
1. to develop an awareness and understanding of the basic chronology of cinema historically, and how that history relates to current and evolving practices
2. to critically analyze a particular film (the virtual) and use that analysis as the basis for an architectural design process (the practical) that is iterative, speculative and buildable
3. to develop an awareness and understanding of the basic concepts of design development
4. to explore the conceptual and material premises of various 20th/21st century filmmakers as a way to gain access to the particular challenges of the creation and presentation of their work
5. to understand the implications of cinema's influence on architecture and vice/versa
6. to understand role of the audience as subject and object, material and community
7. to integrate an installation and a site via the mechanisms of display, audience and other programs

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
1) Film theory – German, Soviet influences on Hitchcock, Hitchcock's filmography (15%)
2) Hitchcock's innovations in set building/development of integrated camera work (15%)
3) Team development (10%)
4) Architectural precedents (15%)
5) Innovations/techniques including first British sound picture, sound effects, editing (25%)
6) Social experiments/material testing (20%)

Prerequisites: ARCH-4250

Textbooks/Learning Resources: Bell, David, "The Carpenter's Apprentice," and a variety of relevant cinema articles and essays

Offered (semester and year): fall 2014, spring 2014

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Michael Oatman

* Beginning in 2016 – 17, this course will become ARCH-4790.

ARCH-4260: Architecture Design 6* (Minimal vs Maximal) (6 credits)

Course Description (limit 25 words): Students will be creating island, a mobile New Atlantis, minimal independent society and will assign features and architecture necessary to make it alive

Course Goals and Objectives: This course intends:
1. to introduce students to the exploration of biological systems for architectural purpose
2. to introduce students to a set of unconventional materials in architecture
3. to introduce students to basic experiments of life science
4. to introduce students to the exploration of self-organizational processes in matter
5. to engage students in the exploration of human household as dynamic system in environment

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
Participation in studio disscusion 15%
Presentation of concepts, drawings and models 15%
Presentation of student's final project in progress 25%
Final project 35%
Attendance/Participation 10%

Prerequisites: ARCH-4250

Textbooks/Learning Resources:
1. The Selfish Gene, Richard Dawkins, 1976
2. Climbing Mount Improbable, Chapter 7, The Robot Repeater,
3. The New Atlantis, Francis Bacon, 1624
4. Forms, Processes, Consequences, Zbigniew Oksiuta, 2004
5. Sk-Interfaces, Jens Hauser, 2008
6. Radical Evolution, Joel Garreau, 2005
7. Claudia Hildner, Small Houses, 2011
8. Christian Schittich (Ed), Small Structures, 2010
9. Gunter Nitschke, The Architecture of the Japanese Garden, 1991
10. Metabolism, The City of the Future, Exhibition Catalogue, Mori Art Museum
11. Our Ecological Footprint, Mathis Wackernagel & William Rees, 1998

Offered (semester and year): spring 2014

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Zbigniew Oksiuta

* Beginning in 2016 – 17, this course will become ARCH-4790.

ARCH-4260.60: Architecture Design 6* (6 credits) (CHINA)

Course Description (limit 25 words): This was an upper level design studio and cultural immersion into the architecture and urban issues of China taught in collaboration with TCAUP, Shanghai, China.

Course Goals and Objectives: To provide students with critical insight into the ecological nature of architecture by assessing the conditions through which specific urban environments and architectural projects are manifest. To expand students technical expertise with digital technology/ and to equip students with a fluid digital work flow linked to a multiplicity of methods. To equip students with techniques of visual analysis to engage, assess, and communicate issues concerning the urban environment.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
attendance and participation, 10%
research cluster assignment, 20%
project team midterm, 25%
project team final, 45%
extracredittravel assignment, 5%

Prerequisites: ARCH-4250

Textbooks/Learning Resources:
"Architectural Mimicry in Contemporary China",Bosker, Bianca
"TheWork of Art in the Age of Mechanical Reproduction, Benjamin, Walter

Offered (semester and year): spring 2014 (CHINA)

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Kyle Stover, Wei Wei (Tongji CAUP –China), Hong Wei Lu (Tongji CAUP –China)

* This course will be replaced with ARCH-4790.60 in 2016 – 17.

ARCH-4260.70: Architecture Design 6* (6 credits) (INDIA)

Course Description: This studio focused on the design of two structures, a gatehouse and a library, associated with the Millowner's Building in Ahmedabad India.

Course Goals and Objectives: When students complete this studio they will be able to:
1. design sensitively within a context having great spatial diversity.
2. demonstrate an advanced skill of connecting form, space, and temporality through controlled human movement.
3. demonstrate the ability to consider the elements as aesthetic factors in architectural design.
4. calibrate the poetics of architecture with site and program.
5. extract productively higher dimensional propositions from two-dimensional artifacts

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
Visual & experiential analyses of Le Corbusier's Millowner's Building and its site: 15%
Design of a gatehouse to the Millowner's Building from Ashram Road: 25%
Design of a research library and public spaces adjacent the Millowner's Building and along the Sabarmati Riverfront: 60%

Prerequisites: ARCH-4250

Textbooks/Learning Resources: This studio was given with a companion course, ARCH-4976.70 that included numerous readings on the ideas and work of Le Corbusier.
In addition, students had the opportunity to visit and study several other works by Le Corbusier in India

Offered (semester and year): spring 2015 (INDIA)

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): David Bell

*This studio was part of RPI's program in India.

ARCH-4260.80: Architecture Design 6* (6 credits) (CASE)

Course Description: This semester seeks to resolve the realities of design actualization and technological research using a single, speculative project to produce both knowledge and architecture.

Course Goals and Objectives:
Each student will develop ways to approach with equal measure issues of site, environment, context, history, concept, structure, materials, systems, and geometry in order to provoke a tangible and persuasive architecture that:
1. Advances their insights and thesis in response to the program brief
2. Furthers ecological and parametric approaches to the building and thinking of architecture and design
3. Produces architectural knowledge and expands possibility through the act of integration, and ecological thinking
Students will develop a capacity to design at various scales of material realization and assembly in support and development of conceptual intentions/ideas while integrating building, environmental, and programmatic systems and addressing regulatory and technical requirements. Students are expected to iteratively address multiple design considerations and in doing so to develop their awareness and understanding regarding how:
1. One scale informs/impacts another,
2. Criteria established by considerations of environmental building performance inform and positively affect morphology, structure, envelope and the planning and design of buildings
3. Disciplines affecting architectural design (structural, mechanical, acoustic, lighting, etc...) cannot be seen as exclusive, isolated, or compartmentalized practices, and to develop the capacity to integrate that understanding early into the design process.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline:
The 17th Century Salon as program and ground for speculation and the projection of living information and social interaction will be the focus of the studio's attention and the testing bed of our methodology this semester. In particular, the studio will reconsider the existing space of the current faculty office and conference area at CASE, a 450 ft2 space that operates as both the front door and main gathering area for the center. The question we will ask is how the reconsideration of the surfaces that define the room and their constituent and internal modularity and makeup can participate in the making of the room as CASE's Salon—a place of interaction, projection, and performance.
The project will move through issues of existing condition analysis (10%), programming and conceptualization (20%), material design and processing(30%), prototyping (20%), installation (15%), gathering and processing of data (5%)all in the context of reconsidering the actual architecture of the room, and its transformation into the CASE Salon.

Prerequisites: ARCH-4250

Course Texts:
Koolhaas, Rem. *Delirious New York: A Retroactive Manifesto for Manhattan*,. New York: Monacelli Press, 1994.

Offered (semester and year): fall semester annually (CASE)

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Demetrios Comodromos, Nancy Diniz, Josh Draper, Anna Dyson

* Beginning in fall 2016, this course will become ARCH-4790.80.

ARCH-4300: Design Development* (6 credits)

Course Description: A collaborative integrative technology-based design studio emphasizing materialization and making architectural design projects concerning program, environment,, structure, life-safety, building envelope, materials and integrated building systems.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. Evaluate, select creatively, and employ materials and construction means to realize an architectural project in support of well conceived and articulated design intentions.
2. Integrate program, life safety, structure, building envelope, materials, building systems and technologies into an architectural design including, but not limited to the International Building Code (IBC), (ADA), environmental awareness and response, enclosure, lighting and HVAC.
3. Produce and organize an effective set of technical drawings utilizing a combination of analog and digital two and three-dimensional tools.

Student Performance Criterion/a addressed: A.1: Professional Communication Skills, A.2: Design Thinking Skills, B.1: Pre-Design (focus on code and standards), B.3: Codes and Regulations, B.4: Technical Documentation, B.5: Structural Systems, B.9: Building Service Systems, C.2: Integrated Evaluations and Design-Making Decision Process, C.3: Integrative Design

Topical Outline (include percentage of time in course spent in each subject area):
Diagramming and Conceptual Framing – 1 week (10%)
Bulk and Mass – 1 week (10%)
Principles of Life Safety, Universal Access and Code Analysis – 1 week (10%)
Programming – 1 week (10%)
Structural Systems – 1 week (10%)
Energy, Environment and Comfort – 1 week (10%)
Building Envelope – 1 week (10%)
Site Design and Development – 1 week (10%)
Materials and Systems – 1 week (10%)
Professional Practice(s) and Building Visits (NYC) – 3 days (10%)
Building Information Modeling – Integrated throughout
Technical Documentation and Outline Specification – Integrated throughout
Integrative Evaluations and Decision Making – Integrated throughout
Integrative Design – Integrated throughout

Prerequisites: ARCH-4820, ARCH-4330, ARCH-4740; ARCH-4540 is co-requisite

Textbooks/Learning Resources:
The Architect's Studio Companion, Edward Allen and Joseph Iano
The Fundamentals of Building Construction-Materials and Methods, Edward Allen
Façade Construction Manual, Birkhauser
The International Building Code / 2010; A course reader – see full syllabus

Offered (semester and year): Fall and Spring semesters annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit):
S'14: Lonn Combs, Alexander Pincus; F'14: Ted Krueger, Ashmal Aqtash, Lauren Thomsen (BIM); S'15:Mark Mistur, Erik Churchill, Lauren Thomsen (BIM): F'15: Mark Mistur, Erik Churchill, Lauren Thomsen (BIM); Michael Stein, P.E., and Will Laufs, P.E. (Bedford Engineering Professors)

* This studio will be taught for the last time in spring 2016. Afterwards, it is replaced by ARCH-4830.

ARCH-4540: Professional Practice 1 (2 credits)

Course Description (limit 25 words): This course analyzes assemblies and occupancies of construction, building codes & regulations, sustainability, cost estimating, project management, legal responsibilities and professional conduct.

Course Goals and Objectives: ProPractice 1 explores how architects realize design projects—taking them from conception through development, documentation, and construction and the collateral efforts beyond pure design essential for successful projects. This requires investigation and proving understanding of/ability within legal, code/regulatory, professional, contractual, and stakeholder and marketplace environments, within which designs become buildings.

Student Performance Criterion/a addressed (list number and title): B.3: Codes & Regulations, B.4: Technical Documentation, D.1: Stakeholder Roles in Architecture, D.2: Project Management, D.4: Legal Responsibilities, D.5: Professional Conduct

Topical Outline (include percentage of time in course spent in each subject area)*:
1. Building Codes & Regulations & Technical Documentation – 50%
2. Sustainability Constructs in Professional Practice – 15%
3. Construction Cost Estimating – 20%
4. Professional Conduct, Legal Responsibilities and Project Management – 15%

*Items 1.-3. are intended to be comprehensively addressed, Item 4. fundamentals are intended to be introduced in ProPractice I; all correspond to the following categories: SPC B.3 - Codes and Regulations; SPC B.4 - Technical Documentation; SPC D.1 - Stakeholder Roles in Architecture; SPC D.2 - Project Management; SPC D.4 - Legal Responsibilities; SPC D.5 - Professional Conduct

Prerequisites: ARCH-4540 co-requisite for ARCH-4300*

Textbooks/Learning Resources:
Required:
Building Codes Illustrated, Fourth Edition, A Guide to Understanding the International Building Code, by Ching and Winkel;
Access to:
current online version of the *2010 International Building Code for New York State*
Library reference:
1. *The Architect's Studio Companion*, by Allen and Iano
2. *Architectural Building Codes*, by James G. Scott
3. *Construction Materials; Types, Uses and Applications*, by Caleb Hornbostel

Offered (semester and year): fall and spring semesters annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Stephen F. Reilly

* ARCH-4300 and its relevant content will become ARCH-4830 beginning in fall 2016. ARCH-5380 is co-listed with ARCH-4540.

B. ARCH REQUIRED COURSES
5th-YEAR FALL SEMESTER

ARCH-4550: Professional Practice 2 (2 credits)

Course Description: This course includes practice topics required by: NAAB, Architectural Practice /Registration, Contracts, Collaboration, Ethics, Project Delivery, Architect's Construction Role, Business Practices, Construction Scheduling and Costs

Course Goals and Objectives: Students who have completed this course successfully will be able to:
1. demonstrate a knowledge of the responsibilities of the architect to elicit, understand and reconcile the needs of the Client, Owner, User Groups and the public and community domains.
2. demonstrate a knowledge of the methods for competing for commissions, selecting consultants, assembling teams and recommending contractual project delivery methods.
3. demonstrate the ability to work effectively in teams through successful completion of class projects.
4. apply knowledge of the architects' responsibility to the public and the client as determined by registration law, professional service contracts to specific situations.

Student Performance Criterion/a addressed (list number and title): B.10: Financial Considerations, D.1: Stakeholder Roles in Architecture, D.2: Project Management, D.3: Business Practices, D.4: Legal Responsibilities, D.5: Professional Conduct

Topical Outline (include percentage of time in course spent in each subject area):
1. Overview of the profession – 5%
2. Stakeholders roles in architecture –10%
3. Legal aspects of the profession – 10%
4. Project management – 15%
5. Ethics and Professional Conduct – 10%
6. Business Models – 5%
7. Business Practices – 10%
8. Architect's Role During Construction – 10%
9. Construction Scheduling and Financing – 5%
10. Marketing and Business Development – 10%
11. Project Delivery Methods – 5%
12. Alternative Careers in Architecture – 5%

Prerequisites: ARCH-4540

Textbooks/Learning Resources: Paul Segal, *Professional Practice, A Guide to Turning Designs into Buildings*

Offered (semester and year): fall semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Richard Peckham**,** John Pocorobba

ARCH-4790 [future replacements for ARCH-4980]: Architectural Design Studio 7 (5 credits)*

Course Description: This upper division design studio explores topics of contemporary interest to the discipline that are defined by the faculty member teaching it.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. produce design projects that engage complex issues of interest to the contemporary practice of architecture.
2. develop and represent verbally and graphically architectural research through design.
3. present and represent verbally and graphically complex and challenging design ideas in a comprehensive and coherent argument.
4. present and represent comprehensive design work through models, drawings, prototypes, and demonstrations as appropriate to the nature of the project.

Student Performance Criterion/a addressed (list number and title): none assigned to this course.

Topical Outline (include percentage of time in course spent in each subject area): One of these elective studios (Architectural Design Studios 5, 6, and 7) is required in either semester of the 3rd and 4th years, and in the fall of the 5th year in the undergraduate professional curriculum. These studios are intended to allow students to develop an education consistent with personal goals. Each studio may have upper division students of any year. Students may elect to participate in a foreign and off-campus study options to fulfill this studio requirement. The topics will differ from semester to semester and from faculty member to faculty member.

Prerequisites: The current ARCH-4260 is or the new ARCH-4780 will become the prerequisite for this course.

Textbooks/Learning Resources: This will be determined by the faculty member offering the particular studio.

Offered (semester and year): fall semesters annually beginning in fall 2016

Faculty assigned (list all faculty assigned during the four semesters prior to the visit):

*This is a new option studio that will begin in fall 2016 and replace ARCH-4980

ARCH-4910: Final Project Design Research Seminar* (3 credits)

Course Description: This course provides students with an understanding of the theoretical and applied research methodologies and practices used during the architectural design process.

Course Goals and Objectives:
Students who successfully complete this course will be able to:
1. demonstrate the capacity to obtain and evaluate content from readings on a variety of topics related to architectural history, theory, and design.
2. demonstrate effective research skills, including the ability to explore sources of knowledge external to the discipline of architecture.
3. demonstrate a working knowledge of the use of citations and attributions in scholarly writing and presentations.
4. demonstrate analytic ability through writing and diagramming.
5. demonstrate an ability to communicate arguments in lucid written prose.

Student Performance Criterion/a addressed (list number and title): C.1: Research

Topical Outline (include percentage of time in course spent in each subject area):
Readings: 35%
Topic/Formal Research: 45%
Final Presentation and Documentation of Topic/Formal Research: 20%

Prerequisites: Completion of first four years of undergraduate study in the B.Arch program or equivalent.

Textbooks/Learning Resources: no textbooks. Readings will vary per individual seminar section / individual instructor.

Offered (semester and year): fall semesters annually beginning in 2016

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): N/A

*This course will first be offered in fall 2016 and will replace the current ARCH-4981.

ARCH-4980: B. Arch Final Project 1* (5 credits)

Course Description: This course enables fifth-year undergraduate students in the B. Arch program to develop a semi-independent design research project within two consecutive semesters.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. demonstrate the ability to independently propose, refine, and develop a comprehensive design project.
2. demonstrate the capacity to engage in both research and design work in such a way that each are beneficial to the other.
3. demonstrate knowledge and mastery of the various issues, problems, and themes that inform the design project.
4. demonstrate analytic ability through writing, diagramming, and drawing.
5. demonstrate creative ability in the design and development of the project as well as a capacity to document and present their work in a clear and effective way.
6. demonstrate an ability to communicate arguments in lucid written prose.
7. demonstrate a working knowledge of the use of citations and attributions in scholarly writing and presentations.
8. demonstrate effective research skills, including the ability to explore sources of knowledge external to the discipline of architecture.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
Topic Research: 20%
Material / Formal Research: 20%
Site Analysis: 30%
Schematic Design: 30%

Prerequisites: ARCH-4260 or -4300, ARCH-4981 co-requisite

Textbooks/Learning Resources: No textbooks. Readings vary per individual studio section.

Offered (semester and year): fall semester annually*

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Gustavo Crembil, Brian DeLuna, Carla Leitao, Ted Ngai, Stefano Passeri, Chris Perry

* This course will discontinue after the fall 2015 semester and be replaced in fall 2016 by ARCH-4790.

ARCH-4981: Methods Seminar* (1 credit)

Course Description: This course provides students with an understanding of the theoretical and applied research methodologies and practices used during the architectural design process.

Course Goals and Objectives:
Students who successfully complete this course will be able to:
1. demonstrate the capacity to obtain and evaluate content from readings on a variety of topics related to architectural history, theory, and design.
2. demonstrate effective research skills, including the ability to explore sources of knowledge external to the discipline of architecture.
3. demonstrate a working knowledge of the use of citations and attributions in scholarly writing and presentations.
4. demonstrate analytic ability through writing and diagramming.
5. demonstrate an ability to communicate arguments in lucid written prose.

Student Performance Criterion/a addressed (list number and title): C.1: Research

Topical Outline (include percentage of time in course spent in each subject area):
Readings: 50%
Case Study(s) Analysis: 25%
Writing Assignment: 25%

Prerequisites: ARCH-4260, ARCH-4980 co-requisite

Textbooks/Learning Resources: No textbooks. Assigned readings vary per year but have included the following:
Denise Scott Brown, "On Formal Analysis as Design Research," *JAE* 32:4 Search/Research (May, 1979): 8-11.
Case Studies 1: Architectural "Theses" 1940-1978
Harvard's GSD; Mies at IIT; Robert Venturi & Charles Moore at Princeton; Archigram/London County Council Architects' Department; Wachsmann's Universal Jig; Superstudio's Continuous Monument; Koolhaas' "Exodus"; Libeskind's *Micromegas*.
Stanford Anderson, "Architectural Design as a System of Research Programs," *Design Studies* 5:3 (July 1984): 146-150.
Case Studies 2: Design "Theses" 1978-Present
Tschumi's *The Manhattan Transcripts*; Daniel Libeskind, Chamber Works; Parc de la Villette (Tschumi, Koolhaas, et al.); Diller Scofidio, Blur Building.
K. Michael Hays, *Architecture |Theory| since 1968* (Cambridge: MIT Press, 1997), project selection: No-Stop City, 56-59; Wall House, 86-87; Neue Staatsgalerie, Stuttgart, 318-19; Gehry House, Santa Monica CA, 378-81; *The Manhattan Transcripts*, 408-11; Chamber Works, 476-79; Moving Arrows, Eros and Other Errors, 582-85; Bibliotheque de France, Paris, 704-07.
Stephen Kieran, "Research in Design: Planning Doing Monitoring Learning," *JAE* (September 2007): 27-31.
Jeremy Till, "What is Architectural Research? Three Myths and One Model," *RIBA* R+D paper, 2004

Offered (semester and year): fall semester annually*

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Brendan Moran, Chris Perry, Lydia Xynogala,

* This course will be discontinued after fall 2015 and will be replaced by ARCH-4910 in fall 2016. The Final Project will become only a one-semester studio experience instead of the current two-semester studio.

B. ARCH REQUIRED COURSES
5th-YEAR SPRING SEMESTER

ARCH-4590: The Economics of Architecture* (2 credits)

Course Description: This course addresses economic issues related to architectural practice within national and global economics as well as those issues specific to practice and the profession.

Course Goals and Objectives: Students who have successfully completed this course will be able to:
1. demonstrate a knowledge of the responsibilities of the architect to elicit, understand and reconcile the needs of the Client, Owner, User Groups and the public and community domains
2. demonstrate a knowledge of the methods for competing for commissions, selecting consultants, assembling teams and recommending contractual project delivery methods
3. demonstrate the ability to work effectively in teams through successful completion of class projects.
4. apply knowledge of the architects' responsibility to the public and the client as determined by registration law, professional service contracts to specific situations.

Student Performance Criterion/a addressed (list number and title): B.10: Financial Considerations, D.3: Business Practices

Topical Outline (include percentage of time in course spent in each subject area):
Architecture and the Building Industry in the Larger Economy, 12.5%
Domestic and global economies, 12.5%
Organization of Architectural Practice, 12.5%
Globalization of Practice, 12.5%
Cost Estimation, Fees, Services and Consultants, 12.5%
Design-Build and Alternative Practice Models, 12.5%
Case Studies Presentations and Discussions, 12.5%
The Design of Design Practices, Architect's Role During Construction, 12.5%

Prerequisites: ARCH-4980

Textbooks/Learning Resources:
Rosalie Ruegg & Harold Marshall, *Building Economics: Theory and Practice*

Offered (semester and year): spring semester annually*

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): N/A

*This course will not be offered with an ARCH prefix until spring 2019. Prior to that date, it will be taught in RPI's Lally School of Management.

ARCH-4920: B. Arch Final Project* (5 credits)

Course Description: This course enables fifth-year undergraduate students in the Bachelor of Architecture (BArch) program to develop a semi-independent design research project over the course of two consecutive semesters.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. demonstrate the ability to independently propose, refine, and develop a comprehensive design project.
2. demonstrate the capacity to engage in both research and design work in such a way that each are beneficial to the other.
3. demonstrate knowledge and mastery of the various issues, problems, and themes that inform the design project.
4. demonstrate analytic ability through writing, diagramming, and drawing.
5. demonstrate creative ability in the design and development of the project as well as a capacity to document and present their work in a clear and effective way.
6. demonstrate an ability to communicate arguments in lucid written prose.
7. demonstrate a working knowledge of the use of citations and attributions in scholarly writing and presentations.
8. demonstrate effective research skills, including the ability to explore sources of knowledge external to the discipline of architecture.

Student Performance Criterion/a addressed (list number and title): A.1: Professional Communication Skills, A.2: Design Thinking Skills, A.3: Investigative Skills

Topical Outline (include percentage of time in course spent in each subject area):
Schematic Design Development: 40%
Representation (physical models and prototypes): 25%
Representation (drawings, diagrams, and renderings): 25%
Book formatting and printing: 10%

Prerequisites: ARCH-4790 & ARCH-4910

Textbooks/Learning Resources: No textbooks. Readings vary per individual studio section.

Offered (semester and year): spring semester annually*

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Gustavo Crembil, Brian DeLuna, Carla Leitao, Ted Ngai, Stefano Passeri, Chris Perry

* In spring 2017, this course will replace the current ARCH-4990, which is now the 2nd semester of a 2-semester sequence, ARCH-4920 will become a single semester final project studio.

ARCH-4990: B. Arch Final Project 2* (6 credits)

Course Description: This course enables fifth-year undergraduate students in the Bachelor of Architecture (BArch) program to develop a semi-independent design research project over the course of two consecutive semesters.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. demonstrate the ability to independently propose, refine, and develop a comprehensive design project.
2. demonstrate the capacity to engage in both research and design work in such a way that each are beneficial to the other.
3. demonstrate knowledge and mastery of the various issues, problems, and themes that inform the design project.
4. demonstrate analytic ability through writing, diagramming, and drawing.
5. demonstrate creative ability in the design and development of the project as well as a capacity to document and present their work in a clear and effective way.
6. demonstrate an ability to communicate arguments in lucid written prose.
7. demonstrate a working knowledge of the use of citations and attributions in scholarly writing and presentations.
8. demonstrate effective research skills, including the ability to explore sources of knowledge external to the discipline of architecture.

Student Performance Criterion/a addressed (list number and title): A.1: Professional Communication Skills, A.2: Design Thinking Skills, A.3: Investigative Skills

Topical Outline (include percentage of time in course spent in each subject area):
Schematic Design Development: 40%
Representation (physical models and prototypes): 25%
Representation (drawings, diagrams, and renderings): 25%
Book formatting and printing: 10%

Prerequisites: ARCH-4980

Textbooks/Learning Resources: No textbooks. Readings vary per individual studio section.

Offered (semester and year): spring semester annually*

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Gustavo Crembil, Brian DeLuna, Carla Leitao, Ted Ngai, Stefano Passeri, Chris Perry

*This course will be discontinued after spring 2016 and will be replaced by ARCH-4920, which is a single semester of Final Project instead of the 2-semester system that is currently in place.

PROFESSIONAL ELECTIVES

ARCH-4010: Seminar in Sensory Culture (2 credits)

Course Description: The study of human perception for designers using multi-disciplinary source material in diverse formats challenging conventional understandings of perception from the first person perspective.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. critically evaluate perspectives in a variety of disciplines and make connections between them as evidenced in the written commentaries in response to readings, presentations, installations, and performances.
2. demonstrate the ability to synthesize interdisciplinary understandings in their discussions of the readings each week.
3. demonstrate factual knowledge of the course content in their in-class presentations.
4. demonstrate the ability to use their understanding of the course materials in design practice by designing presentation to the seminar.

Student Performance Criterion addressed: none assigned to this course

Topical Outline:
Language and Embodiment - Two weeks 16%, Perception and Cognition - Two weeks16%, Body Image/Schemata – Two Weeks 16%, Blindness, Deafness, Loss of Limbs – Three Weeks 24% Synaesthesia – One weeek 8%, Color Perception– One weeek 8%, Flavors and Culture– One weeek 8%

Prerequisites: None

Textbooks/Learning Resources: The bibliography for the seminar includes over 60 items. Some written, some in video, sound recordings, performances at the EMPAC, field trips, even food tasting. Not all students read all texts, but present their texts to the others. Bibliograpgy includes:
Abram, D. (1996). 'Animism and the Alphabet'. in *The Spell of the Sensuous*. New York: Pantheon, pp. 93-136
Auster, P. (1986). 'Ghosts' (excerpt). from the *New York Trilogy*. Middlesex, England: Penguin Books, pp 161-163
Azzopardi, P. and Cowey, A. (1997).' Is Blindsight like normal, near-threshold Vision?' Proceedings of the NatAcadSci,
Bateson, G (1972) *Steps to an Ecology of Mind*, New York: Ballentine Books, selections
Beaurieux, Dr (1905) `Execution de Languille: observation prise immediatement après decapitation',
Beer, R.D. (2000). Dynamical approaches to cognitive science. Trends in Cognitive Sciences 4(3):91-99
Benassi, L. et al. (2004). 'Psychobiology of the Amniotic Environment', Acta Biomedica Ateneo Parmense 2004; 75; Suppl. 1: 18-22
Change Blindness Demonstration. D J Simmons videos available at:
http://viscog.beckman.uiuc.edu/djs_lab/demos.html
Connor, S. (1999). Michael Serres' Five Senses. Available at:
http://www.bbk.ac.uk/english/skc/5senses.htm
Cooperider, K and Núñez, R. (2007) 'Doing time: speech, gesture and the conceptualization of time'. UCSD Technical Report
Craig, J and Rollman G (1999) 'Somathesis' Annual Review of Psychology 1999 50: 305-331
Cytowic, R.(2005). 'Visual Music'. Lecture at the Hirshorn Musuem Washington, DC.

Offered (semester and year): fall semesters annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Ted Krueger

ARCH-4020: Bedford Seminar: Advanced Building Structures* (3 credits)

Course Description: An interdisciplinary course between Architecture and Engineering students focusing on principles of structures, advanced material systems/facades and collaborative research/design problem solving.

Course Goals and Objectives:
1. Teach students to view design and construction as a common goal shared by multiple disciplines and bring them to an awareness of issues outside of their respective fields.
2. Provide information and examples about complex and advanced structural and façade systems.
3. Provide examples of instructor's real-life work and, possibly, take class trip to his professional offices.
4. Encourage students to consider a variety of innovative/emerging systems to solve design problems.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
1. Lecture 01: Introduction to Advanced Structures; class meeting 1 / 14 (7% of class time)
2. Lecture 02: Loading & Force Flow; class meeting 2 / 14 (7% of class time)
3. Lecture 03: Lateral Systems; class meeting 3 / 14 (7% of class time)
4. Lecture 04: Materials, Stresses & Deflections; class meeting 4 / 14 (7% of class time)
5. Lecture 05: Beams, Slabs, Columns, Cantilevers; class meeting 5 / 14 (7% of class time)
6. Lecture 06: Membrane Structures & Formfinding; class meeting 6-7 / 14 (14% of class time)
7. Lecture 07: Shell Structures, Arches, Domes; class meeting 8-9 / 14 (14% of class time)
8. Lecture 08: Folded Structures; class meeting 10 / 14 (7% of class time)
9. Lecture 09: Pneumatic Bubbles; class meeting 11 / 14 (7% of class time)
10. Lecture 10: Cables & Cable Structures; class meeting 12-13 / 14 (14% of class time)

Prerequisites: none

Textbooks/Learning Resources: Required readings will be assigned in class on an as-needed basis. Below is a partial selection of readings which may be helpful at various points during the semester: *An Engineer Imagines*; Peter Rice*,* Artemis; *Seven Structural Engineers – The Felix Candela Lectures***,** Guy Nordensen; *Intelligent Glass Facades***,** Andrea Compagno, Birkhaeuser; *Conceptual Structural Design: Bridging the Gap between Architects and Engineers***,** Olga Popovic, Larsen and Andy Tyas, Thomas Telford*; Membrane Structures in Japan***,** Kazuo Ishii, SPS Publishing Company; *Guidelines for the design of footbridges***,** fib Bulletin 32; - *Structure Systems*; Heino Engel, Hatje Cantz; *Structural Design of Retractable Roof Structures*, Kazuo Ishii, WIT Press; *Light, Wind, and Structure The Mystery of the Master Builders*; Mark, MIT Press; *Perspecta 31 Reading Structures*; Foug and Joyce, MIT Press; *Atlas of Novel Tectonics*, Jesse Reiser, Princeton Architectural Press; *Membrane Structures***,** Klaus-Michael Koch, Prestel; *Structural Concepts and Systems for Architects and Engineers*, T.Y. Lin and Sidney D. Stotesbury, Van Nostrand Reinhold; *Horizontal Building Structure*; Schueller, Van Nostrand Reinhold; *The Vertical Building Structure*; Schueller, Van Nostrand Reinhold; *Structure in Architecture: The Building of Buildings*, Salvadori and Heller, Prentice-Hall; *Why Buildings Stand Up* and *Why Buildings Fall Down*; Salvadori, Norton, and Levy

Offered (semester and year): spring semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Will Laufs, Michael Stein

* This course is co-listed with CIVL-4020.

ARCH-4070: Twisted Siblings: Relationships between Contemporary Painting and Digital Architecture (2 credits)

Course Description: The course seeks to study the relationship between contemporary painting and digital architecture, with an emphasis on their recent histories and future possibilities.

Course Goals and Objectives: This course seeks:
1. to introduce students to strategies of critical inquiry, as it relates to ideas in contemporary painting & architecture.
2. to introduce students to the historical relationships between painting and architecture.
3. to Introduce students to the contemporary relationships between painting and architecture.
4. to introduce students to the fundamental lessons of structural, spatial, and conceptual dimensions of painting and architecture.
5. to Introduce students to strategies of translating painting to architecture.

Student Performance Criterion/a addressed (list number and title): none assigned to this course.

Topical Outline (include percentage of time in course spent in each subject area):
The topical outline of the course relates to the course goals and objectives listed above. The course divides its time in the following manner:
20% on course objective one
20% on course objective two
20% on course objective three
20% on course objective four
20% on course objective five

Prerequisites: none

Textbooks/Learning Resources: *Transparency: Phenomenal and Literal*, authors Robert Slutzky and Colin Rowe.

Offered (semester and year): spring semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Anthony Titus

ARCH-4170.80: Environmental Parametrics (2 credits)

Course Description: This course describes the meaning, values and methods of deploying parametric techniques to achieve comprehensive performance design as an analytical tool and a generative device.

Course Goals and Objectives:
1. Students will become fluent in the platforms and software necessary to setup models and simulations of a range of environmental conditions and their effects on buildings and their contexts.
2. Students will be able to create parametrically-based models and simulations that establish complex feedback loops between building morphology and system optimization in relationship to environmental performance.
3. Students will gain a direct understanding of the disciplines complicit with architecture and sustainability, and their roles and potentials in creating ecologies of design for the production of architecture by engaging with those professionals through office visits and invited lectures and weekly reading-based discussions.
4. Students will gain a fluency in the discourse of built ecologies and sustainability in urban contexts by directly observing complex urban systems in New York City by direct observation during bi-weekly group walks and site visits.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline:
TECHNIQUE: PARAMETRICS (60%)
workshops to orient the participants in the software platforms, reservoirs of knowledge and resource, and working methods to create comprehensive existing/as-built models and simulations, parametrically-driven geometry and morphology feedback tools.
TACTICS: PERFORMANCE DESIGN (20%)
students will continue to consider and situate the flows of knowledge as created and manipulated in an effort to produce architecture, and how they can be further positioned with the aim of performance-design.
STRATEGIES: DESIGNED ECOLOGIES (20%)
students will consider and gain an awareness of design ecology as the framework with which we 'see' and as such understand performance design and parametrics as a means to reinforce a considered approach to architectural intervention that emphasizes open systems and flows of energy and information as the basic 'material' afforded to the architect.

Prerequisites: none

Textbooks/Learning Resources:
Berman, Marshal. *All That Is Solid Melts into Air: The Experience of Modernity*. New York: Penguin Books, 1982.
De Certeau, Michel. *The Practice of Every Day Life*. Berkeley: University of California Press, 1984.
Lost in Translation. Dir. Sofia Coppola. Perf. Bill Murray, Scarlett Johansson, Giovanni Ribisi. Universal Studios, 2003
New York: A Documentary Film, Dir Ric Burns. PBS,

Offered (semester and year): fall and spring annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Demetrios Comodromos

LGHT-4230: Lighting Design (4 credits)

Course Description: A design studio that explores the role of light in architecture and its application by design. Students conceive, evaluate, and synthesize solutions that contribute to successful lighting design.

Course Goals and Objectives: At the completion of the course, students will:
1. "learn to see," becoming acquainted with the process and importance of visual observation and creative visualization.
2. understand the process and importance of client interviews, understanding client needs, and be able to conduct a client interview and needs assessment, effectively.
3. establish project goals, objectives, and design intent based upon client needs.
4. understand the information needed to convey the concept of a project.
5. plan and prepare the appropriate verbal, written, and visual presentations required to convey the design concept for conceptual and comprehensive lighting design projects.
6. understand and make use of design philosophies, processes, and approaches to lighting design and develop their own personal philosophy of design.
7. create and develop their own unique lighting designs.
8. understand the role of daylight in lighting designs and be able to analyze daylight contribution to lighting in interior building spaces.
9. experience light as a visual medium.

Student Performance Criterion/a addressed: none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
1. understanding the lighting requirements of interior and exterior spaces, including appropriate siting of lighting equipment and daylight availability analysis (25%)
2. establishing appropriate lighting criteria for efficient space utilization, task performance, and energy utilization (25%)
3. developing designed illumination and lighting control systems, including fixture selection and design, and light source selection (25%)
4. conducting lighting evaluations and calculations (25%)

Prerequisites: None

Textbooks/Learning Resources:
1. Lam, W. 1977. *Perception and lighting as formgivers for architecture*, pp. 10-99. (New York, NY: McGraw-Hill)
2. Flynn, J. E. 1977. *Lighting Design and Application (LD+A)*. February, pp. 6-15.
3. Cuttle, C. 2003. *Lighting By Design* (Textbook, call number: NK2115.5), pp. 67-68, 71-77.
4. Brandston, H. (2008) Learning to See: A Matter of Light, chapter 1, pp 19-36 and pp.77-87; IESNA
5. Brandston, H. 2005. Bringing Humanities to Lighting. *Lighting Design and Application (LD+A)*, September, pp. 78-81.
6. Paulin, D. 2006. Lighting Mockups…Or Just Showing Off? *Lighting Design and Application (LD+A)*, April, pp. 17-19.
7. Moyer, J. 2005. *The landscape lighting book,* Chapter 3, pp. 21-33.

Offered (semester and year): fall semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Jennifer Brons

ARCH-4340: Structural Morphology (2 credits)

Course Description: This course examines behavior of advanced structural systems and complex forms. Innovative and emerging structural topologies are of special interest.

Course Goals and Objectives: Students who successfully complete this course will demonstrate an ability to: 1.understand advanced structural systems in context of architectural design
2. comprehend specifics of redundant and robust systems
3. be able to evaluate complex forms and systems using FEM methods
4. be able to evaluate complex forms using physical modeling and load testing
5. become aware of architectural and structural issues in form finding explorations
6. build intuition to structural creativity
7. understand the process of scientific research and paper writing

Student Performance Criterion/a addressed: none assigned to this course

Topical Outline: 1. Reviews 30% 2. Final Paper 70%

Prerequisites: Permission of Instructor

Textbooks/Learning Resources: relative to topic of investigation

Offered (semester and year): spring semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Ivan Markov

ARCH-4580.80: Materials Systems & Production (3 credits)

Course Description: The course explores how materials form and transform from component to volume taking into account fundamental properties and behaviors of materials and building systems.

Course Goals and Objectives: This course develops analysis, making and testing methodologies for emerging material based investigations. It pursues an in-depth understanding between the use of materials coupled with material systems and assemblies based on environmental performance criteria. It explores the design of material modular systems for building components, their integration into building fabric and envelope systems, and selection of appropriate systems and materials. As well as these issues, the course studies construction details and manufacturing processes. Lectures and workshops will cover fundamental material properties and fabrication; types of joinery; classifying families of material structures; and other related topics. Design exercises involving research a analytical and making design approaches will take place in a lab/workshop format, with students working in teams.

Student Performance Criterion/a addressed (list number and title): none assigned to this course.

Topical Outline (include percentage of time in course spent in each subject area):
PHASE 1. WEAR 30%
PHASE 2. EXTEND 35%
PHASE 3. INTEGRATE AND TEST 35%

Prerequisites: none

Textbooks/Learning Resources: (selection from Spring2015 syllabus)
Ashby, M., Shercliff, H., Cebon, D., (2007) *Materials: engineering, science, processing and design*, University of Cambridge, UK Elselvier, (second edition, 2009).
Allen, Edward and Joseph Iano. *Fundamentals of Building Construction: Materials and Methods*. 5th Edition.Hoboken, New Jersey: John Wiley & Sons, Inc., 2009.
Ballard Bell, Victoria with Patrick Rand. *Materials for Design*. New York: Princeton Arch. Press, 2006.
Caldwell, Michael. Strange Details. Cambridge, MA: MIT Press, 2007.
Deplazes, Andrea. *Constructing Architecture: Materials, Processes, Structures, a Handbook*. Basel: Birkhäuser, 2005.
R. Feynman, *Six Easy Pieces*, Chapter 4-1 "What is Energy" (1963).
R. McMullan, Chapters 2 & 3, *Environmental Science in Building*, 6th ed., Palgrave MacMillan (2007).
Schrpfer, T (2010) 'Material Design: Informing Architecture by Materiality, Taylor and Francis
Frascari, Marco; "The Tell-the-Tale Detail", *VIA 7: The Building of Architecture*. Cambridge, MA: MIT Press, 1984. pp. 23-37.
Kieran, Stephen, and James Timberlake. *Refabricating Architecture: How Manufacturing Methodologies Are Poised to Transform Building Construction*. New York: McGraw-Hill, 2004.
Schropfer, Thomas. *Material Design: Informing Architecture by Materiality*. Basel: Birkhauser, 2011.
Sekler, Edward F; "Structure, Construction, Tectonics", *Structure in Art and in Science*, NY, 1965.
Simmons, H. Leslie. Olin's *Construction: Principles, Materials, and Methods*. Eighth Edition. Hoboken, NJ: John Wiley & Sons Inc., 2007.
R. McMullan, Chp. 4 ("Humidity" & "Condensation") *Environmental Science in Building*, 6th ed., (2007).
G. Harper, Moisture and Humidity, part 2, *Green Building Magazine*, Vol 19, No. 4, pp. 58-60 (2010) C. Morgan, "Design for good health", *Green Building Bible*, vol. 1, pp. 32-37, Green Building Press (2008)

Offered (semester and year): spring semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Nancy Diniz, Jason Vollen, Matt Gindlesparger

ARCH-4730: Sustainable Building Design Strategies (2 credits)

Course Description: Analysis of conceptual planning strategies as well as building system strategies that produce environmentally responsible buildings.

Course Goals and Objectives:
1. To develop an in depth understanding of the systems that provides human comfort in buildings for specific climatic zones with an emphasis on integrating sustainable strategies into the design.
2.To examine the requirements of a conceptual design project and develop a human comfort system appropriate to the program and climatic conditions while insuring that the architecture and engineering design are integrated and developed with sustainable principles.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
1. History of buildings and sustainable design, 10%
2. Site influence and envelope design, 10%
3. Glazing Systems, 10%
4. Lighting- natural, 10%
5. Lighting-artificial, 10%
6. Heating systems, 10%
7. Cooling systems, 10%
8. Energy Production, 10%
9. Passive design, 10%
10. Energy codes, 10%

Prerequisites: ARCH-4750

Textbooks/Learning Resources:
The Green Studio Handbook by Alison G. Kwok, AIA and Walter T. Grondzik, PE

Offered (semester and year): spring semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Oliver Holmes

ARCH-4750: Sustainable Building Design Metrics (2 credits)

Course Description: A review of current and anticipated metrics associated with sustainable building design will be covered as well as practices in the building industry will be discussed.

Course Goals and Objectives:
1. Impact of building design and construction on the environment and associated climate change concerns.
2. Design considerations for architecture and engineering in new construction and renovations.
3. Review opportunities for improvements in renovation projects

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
Sustainable sites 10%
Water efficiency 10%
Energy efficiency 15%
Renewable energy 10%
Materials and resources 20%
Indoor air quality 10%
Integration of concepts 25%

Prerequisites: ARCH-4740

Textbooks/Learning Resources: *Green Building Fundamentals*, 2nd edition by Michael Montoya

Offered (semester and year): fall semester annually.

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Oliver Holmes

LGHT-4770: Lighting Technology & Applications (4 credits)

Course Description: Provides in-depth understanding of the components of lighting systems and enables students to critically explore their use and develop successful lighting solutions.

Course Goals and Objectives:
1. Learn to assess the characteristics of light sources, lighting controls, and luminaires as they apply to their integration into lighting systems;
2. Understand the operation and key performance characteristics of lighting systems under ideal and realistic conditions;
3. Explore various applications of lighting systems and their components, and identify what makes them effective; and
4. Learn to evaluate and compare alternate lighting systems based on multiple criteria (photometry, economics, and energy efficiency).

Student Performance Criterion/a addressed (list number and title): none assigned to this course.

Topical Outline (include percentage of time in course spent in each subject area):
Traditional light source technologies and luminaires 10%
Light emitting diodes, principles of operation and applications 25%
Lighting calculations 25%
Lighting controls 30%
Special topics (e.g., photovoltaic powered lighting) 5%
Lighting economics 5%

Prerequisites: none

Textbooks/Learning Resources: All reading materials are provided in class and are available at RPI's and LRC's libraries. Additional suggested reading materials are listed every semester as appropriate.

Offered (semester and year): fall 2015 (offered in the spring until 2014, switched to fall in 2014)

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Jean Paul Freyssinier, Andrew Bierman.

ARCH-4840: Architectural Acoustics 1 (4 credits)

Course Description: This course provides an overview of essentials for architectural-acoustics design of performance and public spaces such as concert halls, theaters, classrooms, auditoria, and worship spaces.

Course Goals and Objectives: After completing this course, successful students will have demonstrated through class participation, written assignments, and oral presentation:
1. a fundamental understanding of the principals of acoustic wave propagation, and the interaction of acoustic waves with surfaces and materials (reflection, transmission, modes, absorption, scattering, and diffusion), with a concentration on phenomena relevant to building acoustics;
2. a clear understanding of the scope of practical building acoustics: from room acoustics design to vibration & noise control;
3. an understanding of practical acoustical design guidelines for different types of built environments, depending on acoustical function;
4. an understanding of the basic architectural forms of performing arts spaces, and the ability to analyze and communicate the acoustical merits of each;
5. an understanding of the principles of statistical room acoustics, and familiarity with standardized metrics used to quantify room acoustics and their correlation with subjective perception; and
6. the ability to communicate, orally and in writing, an objective and subjective critical analysis of the acoustical design of a building.

Student Performance Criterion/a addressed (list number and title): none assigned for this course

Topical Outline (include percentage of time in course spent in each subject area):
Fundamentals of sound and human hearing: 25%
Wave-based and statistical room acoustics fundamentals: 30%
Sound isolation and building services noise control: 25%
Practical design basics for rooms for speech and music: 20%

Prerequisites: none

Textbooks/Learning Resources:
Architectural Acoustics (2nd Edition). by Marshall Long
Various professional references and articles provided in library reserve and online

Offered (semester and year): fall semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Todd Brooks

LGHT-4840: Human Factors in Lighting (3 credits)

Course Description: This course reviews human factors issues related to various architectural applications.

Course Goals and Objectives: A review of the influence of lighting conditions on people's visual capabilities, perceptions, moods, and alertness, with understanding derived from the structure and operating characteristics of the human visual system. A review of the human factors issues related to applications such as office lighting, retail lighting, emergency lighting, outdoor lighting, security lighting.

Student Performance Criterion/a addressed (list number and title): none assigned to this course.

Topical Outline (include percentage of time in course spent in each subject area):
A.1 – 20%
A.3 – 50%
A.6 – 30%

Prerequisites: none

Textbooks/Learning Resources:
Boyce, P.R., 2003. *Human Factors in Lighting 2nd Edition*, London: Taylor & Francis.
Rea, M.S. 2012. *Value Metrics for Better Lighting*: SPIE Press

Offered (semester and year): fall semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Mariana Figueiro

ARCH-4850: Architectural Acoustics 2 (4 credits)

Course Description: Practical application of architectural acoustics principles and analysis techniques, room acoustics, and noise control design. A team design project is a major component.

Course Goals and Objectives: After completing this course, successful students will have demonstrated through class participation, written assignments, and oral presentations:
1. a clear understanding of the traditional phases of the building design and construction processes, and the role of the professional architectural acoustics consultant in each phase;
2. the ability to convincingly communicate acoustics recommendations and conceptual designs, both as an individual and as a member of a team.
3. an advanced understanding of practical acoustical design guidelines for different types of built environments, depending on function;
4. a working knowledge of computer room acoustics modeling techniques. This includes an understanding of the basic algorithms behind modern computer modeling programs, the ability to create three-dimensional models, and analyze prediction results and auralizations using CATT-Acoustic™ software.
5. an advanced fundamental understanding of the principals of acoustic wave propagation, and the interaction of acoustic waves with surfaces and materials (reflection, transmission, modes, absorption, scattering, and diffusion), with a concentration on phenomena relevant to building acoustics.

Student Performance Criterion/a addressed (list number and title): none assigned to this course.

Topical Outline (include percentage of time in course spent in each subject area):
Advanced fundamentals of noise control, sound isolation, and environmental noise: 30%
Applied computer modeling and auralization techniques: 15%
Team design project seminars: 30%
Practical design case studies: 20%

Prerequisites: ARCH-4840

Textbooks/Learning Resources:
Architectural Acoustics (2nd Edition), by Marshall Long
Various professional references and articles provided in library reserve and online

Offered (semester and year): spring semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Todd Brooks

ARCH-4860: Applied Psychoacoustics (3 credits)

Course Description: In this course, the fundamentals of psychoacoustics and auditory signal processing will be explained and discusse.

Course Goals and Objectives:
1. Students will demonstrate knowledge of the fundamental terms and principles in psychoacoustics
2. Students will demonstrate the ability to analyze the acoustics of rooms by ear and use field-specific language to describe the findings.
3. Upon reading current scientific papers in the field, the participant will be able to write a summary and analysis using psychoacoustic terminology.
4. The students will be able to design psychoacoustic experiments and execute a statistical analysis on these data.

Student Performance Criterioa/a addressed (list number and title): none assigned to this course.

Topical Outline (include percentage of time in course spent in each subject area):
1. course introduction & signals (7.7%)
2. physiology-auditory periphery (7.7%)
3. Absolute threshold of hearing: frequency selectivity & filters (7.7%)
4. pitch, loudness, masking (7.7%)
5. binaural hearing (7.7%)
6. Perceptual evaluation of rooms (7.7%)
7. mid-term exam (7.7%)
8. auditory scene analysis (7.7%)
9. auditory virtual environments (7.7%)
10. speech perception (7.7%)
11. physiology II – cognition (7.7%)
12. statistics (7.7%)
13. case studies (7.7%)
14. final project presentations (7.7%)

Prerequisites: none

Textbooks/Learning Resources: Yost, W. A. (2000). *Fundamentals of Hearing: An Introduction*: New York: Academic Press & selected papers and book chapters.

Offered (semester and year): fall semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Jonas Braasch

ARCH-4931: The Man Next Door: A. Hitchcock + the Architecture of Fear (2 credits)

Course Description: This seminar explores Alfred Hitchcock's art via the urban condition, modes of architecture and technical advances that make for this most "architectural" of cinematic practices.

Course Goals and Objectives: Students who complete this course will demonstrate**:**
1. an awareness of the basic concepts of film theory, and, in particular a relationship to Hitchcock's idea of "pure cinema".
2. an ability to understand the implications of architecture on cinema.
3. an ability to understand the implications of cinema on architecture.
4. an ability to explore the relationship of pre-visualization techniques such as storyboarding (drawing) to the design aspects of film production/action (mis-en-scène).
5. an ability to critically consider the direct relationships between the physical, built material of filmmaking (architecture), the mechanics of seeing (optics) and the resulting ephemeral, pictorial, temporal, narrative poetics of film.

Student Performance Criterion/a addressed (list number and title): none assigned to this course.

Topical Outline (include percentage of time in course spent in each subject area):
1. Film theory – German, Soviet influences on Hitchcock, Schuftan Process (15%)
2. Hitchcock's innovations in set building/development of integrated camera work (20%)
3. Hitchcock's sensory integration of color, wardrobe, soundtrack – *gesamtkunstwerk* (20%)
4. Innovations including first British sound picture, sound effect mastery, editing (25%)
5. Aspects of narrative, anticipating trends, industry challenges, parallels with arch auteurs (20%)

Prerequisites: none

Textbooks/Learning Resources:
No Textbook. Numerous critical readings and viewing of 15+ films by Hitchcock, and films by David lynch, Sophie Fiennes, Johan Grimoprez

Offered (semester and year): spring semester 2015, 2014, 2013, 2012, 2010, 2009

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Michael Oatman

ARCH-4936.80: Research Investigations (4 credits)

Course Description: An immersive exposure to PhD level research work in Built Ecologies for Architectural Undergraduates and Masters Students.

Course Goals and Objectives: Students who complete this courses will demonstrate an ability to:
1. understand and practice research documentation and its relationship to Intellectual Property generation.
2. work with PhDs in their Areas of Inquiry in Built Ecologies producing actual research through the generation of Hypotheses and Experiments.
3. explore the relationship between Research and Architectural Design.

Student Performance Criterion/addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
Working with a PhD in their Area of Inquiry, students will work as a research team to build and perform experiments that are an actual part of that PhD's dissertation work**.** (75% of course time)
Areas of Inquiry include:
Integrated Concentrating Solar Facades (ICSolar): Students will explore the problem of solar tracking in an array of concentrating photovoltaic modules as part of ICSolar research. Research questions include: how might we maximize the angular range of tracking for each module? How can we simplify the module to ensure a more robust design?

Active Modular Phytoremediation Systems (AMPS): AMPS, an advanced green wall system for healthier, cleaner air, requires careful tracking of plant growth. Students will develop and implement a timelapse video system to record visible and IR imagery of the plant wall at different time scales.

Agricultural Byproducts as Building Materials: Agricultural Byproducts, such as coconut husks, have the potential to transform HVAC systems through their ability to sorp moisture and sequester pollutants. Rigorous testing is required to characterize sorption and sequestration performance as compared to normative, existing materials and systems. Students will participate in the design and specification of a Testing Chamber to explore these questions

Deliverables: (25% of course time) 1. Research report detailing the research Hypothesis, Process and Results. The report should focus on the iterative nature of the research process, recording both success and failure and how both contribute to successive rounds of interim hypotheses and tests. 2. Students will produce experiments and/or experiment deisgn depending on their group. The experiments should be documented as a series of diagrams and photos. Any measurements of performance should be emphasized and visualized. All documentation must be integrated in the Research Report

Prerequisites: none

Textbooks/Learning Resources: Laurel, Brenda, *Design Research: Methods and Perspectives*, MIT Press, 2003

Offered (semester and year): fall 2014 and spring 2015

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Joshua Draper

ARCH 4960: Bioclimatic Design (3 credits)

Course Description (limit 25 words): This course draws lessons in climate-responsive design, considering materials and energy use, from the vernacular architectures of diverse climates.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. gather climate and biome information for a particular location and use it to identify local thermal, airflow, illumination, and material resources.
2. use weather meters, solar pathfinders, non-contact thermometers, illuminometers, and other instruments to investigate existing buildings and to characterize microclimate conditions.
3. explain the significance of characteristic vernacular responses to specific climatic conditions for numerous diverse climates.
4. analyze and evaluate the bioclimatic responsiveness of existing built examples.
5. synthesize relevant bioclimatic principles and apply them to their own studio designs.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
1. Introduction to Bioclimatic Design 7%
2. Thermal Comfort and Thermal Delight 7%
3. Introduction to Climates and Biomes 7%
4. Vernacular Buildings in Continental Climates 15%
5. Vernacular Buildings in Humid Subtropical Climates 7%
6. Vernacular Buildings in Mediterranean Climates 7%
7. Vernacular Buildings in West-Coast Marine Climates 7%
8. Vernacular Buildings in Desert Climates 15%
9. Vernacular Buildings in Tropical Climates 15%
10. Vernacular Buildings in Polar and Highlands Climates 7%
11. Project Presentations 6%

Prerequisites: none

Textbooks/Learning Resources: Excerpts from:
1. Design with Climate (Olgyay)
2. Dwellings (Oliver)
3. Thermal Delight (Heschong)
4. Buildings Without Architects (May)
5. Lessons from Vernacular Architecture (Weber and Yannas)
6. Climate Responsive Design (Hyde)
7. Courtyards (Reynolds)
8. Rick Joy: Desert Works (Joy)
9. Earth Architecture (Rael)
10. Plantation Houses and Mansions of the Old South (Smith)

Offered (semester and year): fall 2014

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Alexandra Rempel

ARCH-4960: Production, Installation, Performance Planning Seminar (2 credits.)

Course Description: Collaborate with faculty in Architecture, Art, Architectural Acoustics, Artificial Intelligence and a Visiting Media Artist to develop a performance at EMPAC in spring of 2016.

Course Goals and Objectives: Students taking this course will:
1. develop skills for working within a mutti-disciplinary team developing a complex project
2. demonstrate an ability to organize complicated interactions between the artist/scientist team members into a coherent proposal for a performance
3. use design skills to visualize the proposals and creativity in interpreting and contributing to the development of the project.

Student Performance Criterion: none assigned to this course.

Topical Outline: The seminar will consist of working within a multi-disciplinary team that is in the process of developing an externally-funded performance for the 'blackbox' at Rensselaer's Experimental Media and Performing Art Center. Selected aspects of the project the project will be prototyped in the NSF-funded Collaborative Research Augmented Immersive Virtual Environment (CRAIVE lab) an architectural-scale surround sound and projection space. This project will take on a life of its own and work within this team will require agility and the ability to take on new and challenging tasks with the creativity of a designer.

Prerequisites: none

Textbooks/Learning Resources: These will be developed as needed. Many will consist of similar works or recordings of performances that relate to the developing proposals

Offered: fall 2015 (a unique course, offered only once)

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Ted Krueger

ARCH-4960: Self-Organizing Spaces (2 credits)

Course Description: The subject is a discussion about increasing materialism, which draws attention to the creativity of matter. What implications, for our profession, will these changes have?

Course Goals and Objectives: This course intends:
1. to engage students in the exploration of the principles of evolution.
2. to introduce students to the understanding of the universal laws of living systems.
3. to extend students sensibility to ecological problems in local and global scale.
4. to orient students toward an understanding of the consequences of human creativity.
5. to orient students toward an understanding of the new visions and technologies.
6. to introduce students to the exploration of biological systems for architectural purpose.
7. to provide students with ethical position to architecture.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
1. Research papers (written description), 10%
2. Presentation of a chosen researched subject, 15%
3. Participation in class discussions, 15%
4. Midterm presentation of the final project in progress (written description), 20%
5. Final project (written description), 30%
6. Attendance/Participation, 10%

Prerequisites: none

Textbooks/Learning Resources:
1. *The Selfish Gene*, Richard Dawkins
2. *The Meme Machine*, Susan Blackmore, 1999
3. *Sk-Interfaces*, Jens Hauser, 2008
4. *Gaia*, James Lovelock, 1979
5. *Entropy*, Jeremy Rifkin, Ted Howard 1980
6. *The Age of Spiritual Machines*, Ray Kurzweil 1999
7. *The Singularity is Near*, Ray Kurzweil, 2005
7. *Climbing Mount Improbable*, Richard Dawkins, 1996
8. *Synthetic Aesthetic*, Alexandra Daisy Ginsberg, 2014
9. *Kinematic Self-Replicating Machines*, Robert A. Freitas Jr. and Ralph C. Merkle, 2004
10. *Radical Evolution*, Joel Garreau, 2005
11. *Forms, Processes, Consequences*, Zbigniew Oksiuta, 2004

Offered (semester and year): spring 2015

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Zbigniew Oksiuta

ARCH-4961: Duchamp Seminar (2 credits)

Course Description: This seminar explores the lifework of Duchamp, father of the readymade and conceptual art. We will critically map his impact on 20th C.architecture.

Course Goals and Objectives: Students who complete this course will be able to:
1. develop an awareness and understanding of the chronology of Duchamp's work as it relates to the evolution of modernist thought and post-modern thought
2. develop an awareness and understanding of the basic concepts of Duchamp's work, in particular the readymade, proto-conceptual art, post-studio practices, and the invention of "roles" or alter egos for the artist; such as gender bending, falsified biography
3. explore the relationship of early modernism and world events to the emergent "isms" of 20th century art
4. critically consider the relationships between Duchamp's ideas and other modernist intellectual frameworks such as feminism, socialism, Einstein's emergent theories of relativity
5. understand the implications of Duchamp's influence on art
6. understand the implications of Duchamp's influence on architecture

Student Performance Criterion/a addressed (list number and title): none assigned to this course.

Topical Outline (include percentage of time in course spent in each subject area):
1. Duchamp and modernism chronology/lessons of modernity (25%)
2. Influence on art and architecture (past and contemporary) (25%)
3. Critical making/research presentations (25%)
4. Interpretive and critical writing (25%)

Prerequisites: none

Textbooks/Learning Resources: No textbook. Numerous critical readings, field trips, lectures and discussions with some of the leading experts on Duchamp and modernity. Full access to labs and studios for making objects as part of the course curriculum.

Offered (semester and year): fall semesters 2014, 2013, 2012, 2010, 2009, 2008

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Michael Oatman

ARCH-4961: Research Seminar in Universal Design (2 credits)

Course Description: The seminar is a study of the interaction between physical and sensory abilities and the design of the built environment.

Course Goals and Objectives: In successfully completing this course::
1. students will be able to critically evaluate perspectives in a variety of disciplines and make connections between them as evidenced in the written commentaries in response to readings, presentations, and interviews.
2. students will demonstrate the ability to synthesize these understandings in their propositions about interfaces to environments for mixed physical abilities.
3. students will demonstrate the integration of these new perspectives in the design of a residential environment.

Student Performance Criterion addressed: none assigned to this course

Topical Outline:
1. Inverviews with experts and practitioners - Four weeks 25%
2. Directed exercises - Four weeks 25%
3. Readings and discussions - Four weeks 25%
4. Design Project - Four weeks 25%

Prerequisites: none

Textbooks/Learning Resources:
Interviews:
Aartje Holstein, Physiotherapist, UK,
Pauline Oliveros, Adaptive Use Musical Instrument (USA),
Ken Kaplan, MIT Socio-Technical Systems Group (USA)
Tiago Franklin Lucena, designer, CESUMAR-Maringa, (Brazil)
Readings:
Butler, S., 1873, “The Books of the Machines”, in *Erehwon*, Penguin Books, London.
Glennie, E. (2003). “How to Listen to Music with Your Whole Body’, TED talk
Kirsh, D., 1995, “The intelligent use of space”, *Artificial intelligence*, 73(1-2), pp. 31-68.
Hull, J. (1990). *Touching the Rock: An Experience of Blindness*. New York: Pantheon Books, pp 80-84, 131-134
Sacks, O. (2005). ‘The Minds Eye: What the Blind See’. in Howes, D ed.(2005) *Empire of the Senses: the Sensual Culture Reader*, New York: Berg Publishers, pp. 25-42
Oregan and Noe (2000). *What it is like to see: a sensorimotor theory of perceptual experience*
Conference Attendance:
International Symposium for adaptive Technologies for Music and Art 2015, CRAIVE lab, Rensselaer.

Offered (semester and year): fall 2012 only

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Ted Krueger

ARCH-4961: Latin American Architecture (2 credits)

Course Description (limit 25 words):.This course examines canonical and recent projects in Latin American architecture and urbanism, and identifies, analyzes, and discusses their main tendencies relating to various traditions.

Course Goals and Objectives:
Upon successful completion of this course students will have improve their critical thinking and representation skills according to the NAAB Performance Criteria;
1. A1: Professional Communication Skills: *Ability* to write and speak effectively and use representational media appropriate for both within the profession and with the general public.
2. A3: Investigative Skills: *Ability* to gather, assess, record, and comparatively evaluate relevant information and performance in order to support conclusions related to a specific project or assignment.
3. A7: Historical Traditions and Global Culture: *Understanding* of the parallel and divergent histories of architecture and the cultural norms of a variety of indigenous, vernacular, local, and regional settings in terms of their political, economic, social, ecological, and technological factors.
4. A8: Cultural Diversity and Social Equity: *Understanding* of the diverse needs, values, behavioral norms, physical abilities, and social and spatial patterns that characterize different cultures and individuals and the responsibility of the architect to ensure equity of access to sites, buildings, and structures.

Additional Learning Outcomes
1. The student will have been introduced to cultural and theoretical issues that are currently shaping the intellectual discussion in Latin America.
The student will have an introductory knowledge of topics, issues in discussion, and recent developments in contemporary Latin American architecture and urbanism.
2. The student will be familiarized with Latin American canonical work, as well to identify relevant and emerging practices in the region.
3. The student will be to understand the role these practices operate within the Latin American architectural tradition/practice and global contemporary architectural discourses.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
1. Context / Tradition, 25%
2. XX Century, 25%
3. Contemporary, 25%
4. Urban Issues (including informality), 16.67%
5. Editorial Wrap-up, 8.33%

Prerequisites: ARCH-2140 (required), ARCH-4140 (recommended)

Textbooks/Learning Resources: selected bibliography by faculty.
Offered (semester and year): spring 2016, fall 2015

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Gustavo Crembil

ARCH-4964: Sculpting the Intangible (2 credits)

Course Description: This seminar focuses on phenomenology in art and architecture with a parallel reflection on the poetics of the architectural imagination.

Course Goals and Objectives:
To obtain a greater formal precision (which necessarily must be also material) as designers, where the use of a specific tool is not the ultimate goal but a medium for the expression of a concrete idea. The search for a meta-language that can become multicultural. To understand how the integration and suggestion of natural primal forces in the art and architectural work can reconnect the man with his own essence and the man with other men (multicultural reach). The important role that light and materials play in all aspects of experience and perception and, in relation to a notion of the sublime. This seminar was adapted to the fact that would be taught in Rome and would support the Rome program studio work.

Student Performance Criterion/a addressed (list number and title): none assigned to this course.

Topical Outline (include percentage of time in course spent in each subject area):
1. Light, space, materiality and physical experience**:** weekly topic which starts with the invention of abstraction of the turn of the century with Malevich as a study case with his search of abstraction through light and movement, 25%
2. Progressively the seminar unfolds from bi-dimensional representation of light and space in painting, to Optical Art, kinetic sculptures (light, material and the physical space), llight as material, 25%
3. Architectural buildings, their materiality, light and formal resolution to generate overlaid meanings rooted in our social imagination, 25%
4. The last 3 weeks were dedicated to the counterpart of light, the shadow, and the phenomenological in modern Eastern architecture, 25%

Prerequisites: none.

Textbooks/Learning Resources: Foucault M. “Utopian Bodies” (1966-2006) from *Sensorium* MIT press 2006, Elkins J. *Pictures of the Body. Pain and Metamorphosis*. Standford University Press 1999; Zumthor P. *Thinking Architecture. Essays 1988-2009*, Birkhauser 2010; Tanizaki J. *In praise of shadows*. Jonathan Cape London 1991.

Offered (semester and year): spring 2015

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Elena Perez-Guembe

ARCH-4964: Topics: Line as Technique (2 credits)

Course Description: Using contemporary digital tools this course will seek to augment prior drawing techniques from the 20th century to produce a series of complicated drawings.

Course Goals and Objectives: The goal of the seminar will be to utilize new techniques that will led to new visual and spatial understandings. These drawings will experiment with and display complex patterns, intricate colors, perspective and orthographic views to intensify the concept and geometry. This seminar will pose a progressive continuation and speculation of innovative future methods of representation as we move into a post photorealistic and atmospheric image genre. The virtual modeling process will consider issues at a number of different scales to consider the more general as well as the more specific in the macro, in the microscale with in a design problem. Students will be encouraged to explore design ideas in drawing and 3d model form using both digital and hand drawing techniques.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
(25%) Lectures: Students will receive a series of lectures on different architectural genres beginning with Russian Constructivism and concluding with recent contemporary styles.
(25%) Software tutorials: Students will receive a series of digital tutorials that students that will be implemented in a series of digital exercises in order to master certain techniques that will aid in defining new geometric objects that will be produced in this seminar.
(20%) Precedent Studies: Students will choose an Architect from a prescribed list of 20th century masters and deliver an in depth case study. Followed by an analysis and further information and presentation from the instructor. This part of the seminar will be focusing on 25 historic architects and their body of work.
(20%) Pin-up Reviews.
(10%) Group Discussions

Prerequisites: none

Textbooks/Learning Resources: *Morphosis*, Vol. 3: Buildings and Projects, 1993-1997 by Thom Mayne and Anthony Vidler. *Paul Rudolph: Architectural Drawings* 1977 by Yukio Futagawa. *Contested Symmetries: The Architecture of Preston Scott Cohen* 2001 by Preston Scott Cohen. *Zaha Hadid: The Complete Buildings and Projects* Oct 15, 1998 by Zaha Hadid and Aaron Betsky**.** *Peter Eisenman: Diagram Diaries* Oct 15, 1999 by Peter Eisenman**.** *JOHN HEJDUK: MASK OF MEDUSA - WORKS 1947-1983* Sep 15, 1989 by John Hejduk and Kim Shkapich**.** *Eric Owen Moss: Buildings and Projects 1* Dec 15, 1991 by Wolf D. Prix and Philip Johnson. *Graphic Anatomy - Atelier Bow Wow* Feb 2, 2007 by Atelier Bow Wow. *A Guide to Archigram 1960 - 74*, Oct 24, 2012 by Dennis Crompton. *Architecture Principe: 1966 and 1996* Dec 24, 1997 by Paul Virilio and Claude Parent. *Louis Sullivan: The Poetry of Architecture* Dec 2000 by Narcisco G. Menocal and Robert Twombly. *Wes Jones. Notations: Diagrams and Sequences* Aug 1, 2014 by Bernard Tschumi**.** *79 Color Paintings of El Lazar Lissitzky* - Mar 22, 2013 by Jacek Michalak and El Lazar Lissitzky

Offered (semester and year): fall 2015

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Brian DeLuna

ARCH-4964.50: Sculpting the Intangible (2 credits)

Course Description: This seminar focuses on phenomenology in art and architecture with a parallel reflection on the poetics of the architectural imagination.

Course Goals and Objectives:
To obtain a greater formal precision (which necessarily must be also material) as designers, where the use of a specific tool is not the ultimate goal but a medium for the expression of a concrete idea. The search for a meta-language that can become multicultural. To understand how the integration and suggestion of natural primal forces in the art and architectural work can reconnect the man with his own essence and the man with other men (multicultural reach). The important role that light and materials play in all aspects of experience and perception and, in relation to a notion of the sublime. This seminar was adapted to the fact that would be taught in Rome and would support the Rome program studio work.

Student Performance Criterion/a addressed (list number and title): none assigned to this course.

Topical Outline (include percentage of time in course spent in each subject area):
1. Light, space, materiality and physical experience**:** weekly topic which starts with the invention of abstraction of the turn of the century with Malevich as a study case with his search of abstraction through light and movement, 25%
2. Progressively the seminar unfolds from bi-dimensional representation of light and space in painting, to Optical Art, kinetic sculptures (light, material and the physical space), llight as material, 25%
3. Architectural buildings, their materiality, light and formal resolution to generate overlaid meanings rooted in our social imagination, 25%
4. The last 3 weeks were dedicated to the counterpart of light, the shadow, and the phenomenological in modern Eastern architecture, 25%

Prerequisites: none.

Textbooks/Learning Resources: Foucault M. “Utopian Bodies” (1966-2006) from *Sensorium* MIT press 2006, Elkins J. *Pictures of the Body. Pain and Metamorphosis*. Standford University Press 1999; Zumthor P. *Thinking Architecture. Essays 1988-2009*, Birkhauser 2010; Tanizaki J. *In praise of shadows*. Jonathan Cape London 1991.

Offered (semester and year): fall 2014 (Rome)

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Elena Perez-Guembe

ARCH-4964.50: Form and Emptiness Matter and Information (2 credits)

Course Description: Rome exists between *Sacrum* and *Profanum*. We study tensions of these opposites as a unity. This seminar is not about Religion, it's about Architecture.

Course Goals and Objectives: This course intends to:
1. introduce students to understanding of the spiritual role of architecture
2. introduce students to interdisciplinary thinking and working process
3. introduce students to the creation of new independent social features
4. introduce students to understanding of the social and political role of architecture in society
5. introduce students to understand the architectural messages beyond the historical form and style

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
1. Presentation of a chosen researched subject, 20%
2. Participation in class discussions, 20%
3. Midterm presentation of the final project in progress (written description), 20%
4. Final project (written description), 30%
5. Attendance/Participation, 10%

Prerequisites: none

Textbooks/Learning Resources:
Mircea Eliade, *The Sacred and the Profane*, Claude Levi-Strauss, *The Culinary Triangle* Daisetz Teitaro Suzuki, *An Introduction to Zen Buddhism The Complete Works Of Chuang Tzu*, Translated by Burton Watson Ko Un, *Ten Thousand Lives, 1986*

Offered (semester and year): fall 2015 (Rome)

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Zbigniew Oksiuta

ARCH-4965.70: India Discovery (4 Credits) (INDIA)

Course Description: Through drawing, sketching, and written observation, students will maintain a set of diaries that examine and analyze the environments they encounter in India.

Course Goals and Objectives: Students who have completed this course will be able to:
1. draw and sketch free-hand with a degree of clarity plans, sections, space, and form of works of architecture, urban conditions, and landscape phenomena.
2. write coherently and intelligently about their observations of life and ruminate on how life has created, occupied, and modified architecture, urban conditions, and landscape phenomena
3. demonstrate a disciplined approach to the unprecedented experiences they will encounter

Student Performance Criterion/a addressed (list number and title): none assigned to this course.

Topical Outline (include percentage of time in course spent in each subject area):
1. Drawing, sketching, and considering observations on life and physical form in Ahmedabad, India: 35%
2. Drawing, sketching, and considering observations on life and physical artifacts that students encountered through 5 weeks of travel in India outside of Ahmedabad: 35%
3. Writing about their experiences on the field trips:30%

Prerequisites: ARCH-2120

Textbooks/Learning Resources: the instructor's illustrated course notes on Indian architecture and civilization.

Offered (semester and year): spring 2015 INDIA)

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): David Bell

ARCH-4966.60: Chinese Architecture & Urbanism (4 credits) (CHINA)

Course Description (limit 25 words): This course presents a series of current architecture and urbanism topics through weekly guest lectures and field study in Shanghai, China.

Course Goals and Objectives: To use experiential learning as a method to allow students to both study and actively learn contemporary urban issues.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
1. attendance and participation, 75%
2. completion, 25%
3. Students complete assignments in class weekly under supervision. There are no outside of course assignments so attendance, participation, and completion is mandatory.

Prerequisites: ARCH-4250 or ARCH-4260 co-requisite

Textbooks/Learning Resources: No textbooks, all studio materials provided by university

Offered (semester and year):spring 2014

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Kyle Stover, Weekly guest professor provided by TCAUP (China)

ARCH-4967: Tool Theory (2 credits)

Course Description: This seminar focuses on the relation of humans to the products of design activity. Tools, broadly constructed, include objects, environments, and cultural products like languages and mathematics.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. critically evaluate perspectives in a variety of disciplines and make connections between them as evidenced in the written commentaries in response to readings, presentations, installations, and performances.
2. demonstrate the ability to synthesize interdisciplinary understandings in their discussions of the readings each week.
3. demonstrate factual knowledge of the course content in their in-class presentations.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline:
1. Humans and Technologies – One week - 8%
2. Problems with Dualism – One week - 8%
3. Socio-technical Systems – One week - 8%
4. Cognitive use of Space – One week - 8%
5. Tools and Neurology – One week - 8%
6. Sensory Substitution – One week - 8%
7. Focal Awareness – One week - 8%
8. Simondon – One week - 8%
9. Posthumanism – One week - 8%
10. Artelects, the threat of Technology – One week - 8%
11. Tool-driven Research – One week - 8%
12. Artifacts and Politics – One week - 8%

Prerequisites: none

Textbooks/Learning Resources:
Butler, S., 1873, *Erehwon*, Penguin Books, London.
Bach-y-Rita, P., Tyler, M.E. & Kaczmarek, K.A., 2003, "Seeing with the Brain", *International Journal of Human-Computer Interaction*, 15(2), pp. 285-95.
Clark, A and Chalmers, D. 1998 "Extended Mind", *Analysis* 59: 10-23
Dyson, F. 1996. "Two Kinds of Astronomy", *Proc Amer Phil Soc* 140 (1)
Deleuze and Guattari 1983. *Anti-oedipus: Capitalism and Schizophrenia*, Mineapolis: U Minn
Hayles, K. 1999. *How We became Post-human*, Chicago: U Chi Press
Hutchins, E., 1995, "How a cockpit remembers its speeds", *Cog science*, 19(3), pp. 265-88.
Kirsh, D., 1995, "The intelligent use of space", *Artificial intelligence*, 73(1-2), pp. 31-68.
Oyama, S., 1985, *The ontogeny of information : developmental systems and evolution*, Cambridge University Press, Cambridge; New York.
Simondon, G., 1958. *On the Mode of Existence of Technical Objects*.
Winner, L. 1986 *Do Artifacts have Politics*

Offered: spring 2013 & 2014

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Ted Krueger

ARCH-4967: Robotic Material Assemblies (2 credits)

Course Description: An advanced design seminar that explores the use of robotic gantry for direct material assembly involving the emerging 3D / 4D printing technologies.

Course Goals and Objectives: The principal goal is to enable students to control multi-axis robotic gantry through 3D interface and to learn to control material deposition through refining motion and other parameters such as pneumatic pressure and heater temperature.
.
Student Performance Criterion/a addressed (list number and title): none assigned to this course.

Topical Outline (include percentage of time in course spent in each subject area):
1. parametric g-code generation, 20%
2. motion control, 20%
3. material deposition process, 60%

Prerequisites: ARCH-2550 or ARCH-2230

Textbooks/Learning Resources:
Neil Gershenfeld, *Fab: The Coming Revolution on Your Desktop--from Personal Computers to Personal Fabrication*
Chris Anderson, Makers: *The New Industrial Revolution*
Robin Chase, Peers Inc: *How People and Platforms Are Inventing the Collaborative Economy and Reinventing Capitalism*

Offered (semester and year): fall 2014

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Ted Ngai

ARCH-4968: Architecture in the Time of Synthetic Biology (2 credits)

Course Description: Grounded within contemporary discourse regarding the future of our planet, the seminar will compare the process of natural evolution with exponential expansion of human technologies.

Course Goals and Objectives: This course intends:
1. to engage students in the exploration of the principles of evolution.
2. to introduce students to the understanding of the universal laws of living systems.
3. to extend students sensibility to ecological problems in local and global scale.
4. to orient students toward an understanding of the consequences of human creativity.
5. to orient students toward an understanding of the new visions and technologies.
6. to introduce students to the exploration of biological systems for architectural purpose.
7. to provide students with ethical position to architecture.

Student Performance Criterion/a addressed (list number and title): none assigned to this course.

Topical Outline (include percentage of time in course spent in each subject area):
1. Research papers (written description), 10%
2. Presentation of a chosen researched subject, 15%
3. Participation in class discussions, 15%
4. Midterm presentation of the final project in progress (written description), 20%
5. Final project (written description), 30%
6. Attendance/Participation, 10%

Prerequisites: none

Textbooks/Learning Resources:
1. The Selfish Gene, Richard Dawkins
2. The Meme Machine, Susan Blackmore, 1999
3. Sk-Interfaces, Jens Hauser, 2008
4. Gaia, James Lovelock, 1979
5. Entropy, Jeremy Rifkin, Ted Howard 1980
6. The Age of Spiritual Machines, Ray Kurzweil 1999
7. The singularity is near, Ray Kurzweil, 2005
7. Climbing Mount Improbable, Richard Dawkins, 1996
8. Synthetic Aesthetic, Alexandra Daisy Ginsberg, 2014
9. Robert A. Freitas Jr. and Ralph C. Merkle, Kinematic Self-Replicating Machines, 2004
10. Joel Garreau, Radical Evolution, 2005
11. Forms, Processes, Consequences, Zbigniew Oksiuta, 2004

Offered (semester and year): fall 2014

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Zbigniew Oksiuta

ARCH-4976.70: Topics in Architecture: The Ineffable Space of Le Corbusier (2 credits)

Course Description (limit 25 words): Through a series of readings, writing, model-making, and sketching exercises, students explored “The Ineffable Space of Le Corbusier”. (INDIA)

Course Goals and Objectives: When students complete this course they will be able to:
1. demonstrate a more thorough knowledge of the creation of complex spatial narratives.
2. create two-dimensional abstractions that embody three-dimensional ideals.
3. write knowledgably about the ideas and practice of one of the 20th century’s most prolific architects.
4. use physical models and analog and digital drawings to speculate experimentally about various architectural concepts.
5. speculate coherently and concretely on the role that Indian culture and civilization may have played in the realization of an important work of 20th century architecture.

Student Performance Criterion/a addressed (list number and title): none assigned to this course.

Topical Outline (include percentage of time in course spent in each subject area):
Analysis of a Le Corbusier painting: 30%
In situ sketching and observational exercises at the Millowner’s Building in Ahmedabad, India: 30%
Weekly discussions of a series of readings on the work and ideas of Le Corbusier: 20%
Final Essay: 20%

Prerequisites: ARCH-4140 *

Textbooks/Learning Resources:
1. David Bell: “The Carpenter’s Apprentice”
2. Beatriz Colamina: “Le Corbusier and Photography”
3. Alan Colquhoun: “Displacement of Concepts in Le Corbusier”
4. Peter Eisenman: “Maison Dom-Ino and the Self-referential Sign”
5. Richard Etlin: “A Paradoxical Avant-garde: Le Corbusier’s Villas of the 1920s”
6. Lorens Holm: “Reading Through the Mirror: Brunelleschi, Lacan, Le Corbusier, the Invention of Perspective and the Post-Freudian Eye-I”
7. Katherine Fraser Fischer: “A Nature Morte, 1927”
8. Kenneth Frampton: “The Rise and Fall of the Radiant City: Le Corbusier 1928 – 1960”
9. Richard A. Moore: “Alchemical and Mythical Themes in the Poem of the Right Angle”
10. Colin Rowe: “The Mathematics of the Ideal Villa”
11. Thomas Schumacher: “Deep Space”
12. Peter Serenyi: “Timeless but of its Time: Le Corbusier’s Architecture in India”

Offered (semester and year): spring 2015 (INDIA)

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): David Bell

ARCH-6310.8: Environmental History & Theory (3 credits)

Course Description (limit 25 words):
This course is meant to support an ability for theoretical synthesis lateral to the design development of ecologically sensitive built systems.

Course Goals and Objectives:
This seminar is conceived as an opportunity for synthesis: to engage the design development of ecologically sensitive built systems in studio while gaining in understanding of the social and theoretical implications of such activity, from a variety of fields that aim to cross-pollinate some of these disparate theoretical 'branches' within design practice. The goal is to open awareness of the social, political and economic forces that are instrumental in the development of contemporary built ecologies, such that we might gain in opportunities to catalyze new and emergent paradigms in the cultures of making.
This course has been conceived in tandem with design studio and all of the readings are meant to support a greater understanding of the history and implications of technological design within society. While some of the readings have been selected from prominent Architectural Theoreticians, the preponderance of selections have been deliberately chosen from fields of philosophy, social theory, and ecology and should be conceived as various lenses through which we might view our activities, as a deliberate exercise in 'defamiliarization' from the ways in which the artifacts of architecture and art history are conventionally viewed within an academic format.

A major paper (minimum 5000 words) will be required of graduate students that will provide the theoretical material for the Masters thesis.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area): N/A

Prerequisites: none

Textbooks/Learning Resources:
1. Ed. Margaret A. Boden *The Philosophy of Artificial Life*. Oxford University Press, 1996.
2. William Braham . "Rethinking Technology: A Reader in Architectural Theory"
3. Gillian Brown, George Yule *Discourse analysis*. Cambridge University Press, 2006
4. Ed. John Cottingham Western Philosophy. 'Science and Method – Introduction' Blackwell Publishing Limited, 1996
5. Luis Fernández-Galliano. *Fire and Memory: On Architecture and Energy*. MIT Press, 2000
6. Martin Heidegger . "The Question Concerning Technology, and Other Essays"
7. Frederick J. Keisler, *On Correalism and Biotechnique*
8. Eds. E.D. Klemke, Robert Hollinger, David Wyss Rudge *Introductory Readings in the Philosophy of Science*. Prometheus Books, 1998.
9. Bruno Latour, *The Politics of Nature*. Harvard University Press, 2004. 'Why Political Ecology has to let go of Nature' & 'How to bring the collective together', pages 1-90
10. Lewis Mumford, *Technical Syncretism and Toward an Organic Ideology*
11. Felictity D. Scott *Architecture or Techno- utopia*, The MIT Press, 2007.
12. Charles Taylor ."Interpretation and the Sciences of Man"
13. Paul Virilio, *Open Sky*, Verso, 1997.

Offered (semester and year): fall semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Anna Dyson

ARCH-6330.8: Built Ecologies 2 (3 credits)

Course Description (limit 25 words): Built Ecologies 2 is a course designed to engender a fundamental fusion of theoretical and technical inquiry in the design studio.

Course Goals and Objectives: This seminar is conceived as an opportunity for synthesis: to engage the development of ecologically sensitive built systems from a variety of vantage points that aim to cross-pollinate some of these disparate theoretical 'branches' within design practice. The goal is to not only broaden awareness of the political and economic forces alt play in the development of current building systems in our culture, but to attempt to harness some of the industrial research and development forces already in place to effect a different, more coherent and consequential role for architects in their innovation. Plainly, a central goal is to generate excitement around the means by which architectural practice becomes intrinsically experimental and research oriented.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area): N/A

Prerequisites: none

Textbooks/Learning Resources:
1. Ed. Margaret A. Boden *The Philosophy of Artificial Life*. Oxford University Press, 1996.
2. William Braham . "Rethinking Technology: A Reader in Architectural Theory"
3. Gillian Brown, George Yule *Discourse analysis*. Cambridge University Press, 2006
4. Ed. John Cottingham Western Philosophy. 'Science and Method – Introduction' Blackwell Publishing Limited, 1996
5. Luis Fernández-Galliano. *Fire and Memory: On Architecture and Energy*. MIT Press, 2000
6. Martin Heidegger . "The Question Concerning Technology, and Other Essays"
7. Frederick J. Keisler, *On Correalism and Biotechnique*
8. Eds. E.D. Klemke, Robert Hollinger, David Wyss Rudge *Introductory Readings in the Philosophy of Science*. Prometheus Books, 1998.
9. Bruno Latour, *The Politics of Nature*. Harvard University Press, 2004. 'Why Political Ecology has to let go of Nature' & 'How to bring the collective together', pages 1-90
10. Lewis Mumford, *Technical Syncretism and Toward an Organic Ideology*
11. Felictity D. Scott *Architecture or Techno- utopia*, The MIT Press, 2007.
12. Charles Taylor ."Interpretation and the Sciences of Man"
13. Paul Virilio, *Open Sky*, Verso, 1997.

Offered (semester and year): fall semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Anna Dyson

LGHT-6760: Lighting Workshop (4 credits)

Course Description (limit 25 words): The Lighting Workshop is a research and design studio integrating scholarship, technology, design, policy, and communication in an intensive, project specific context.

Course Goals and Objectives: At the conclusion of the course, students will be able to:
1. develop creative solutions to lighting-related problems.
2. locate and critically analyze information pertaining to particular lighting questions and issues.
3. review, analyze, synthesize, and communicate the essentials of such information to interested audiences.
4. understand and design lighting appropriate to specific locations, cultures, contexts, and objectives.
5. exhibit effective visual and oral communications skills including presentations, computer visualizations, and other graphic presentations.
6. understand and practice integration of research, evaluation, and design in design decision-making.
7. understand cultural, environmental, and economic implications of lighting design decisions.

Topical Outline (include percentage of time in course spent in each subject area):
1. Inventions and Entrepreneurship in Lighting (25%): Conceptualize, develop, and produce a prototype of a new hardware or software lighting product that meets a market need and/or develop an elevator pitch and a business plan for a unique lighting product or service.
2. Lighting Design Competition (25%): Enter at least one of several national or international lighting or luminaire design competitions.
3. Lighting for Sustainability (20%): Project work centered on daylighting metrics, analysis, and design and/or lighting energy policy analysis.
4. Light Art (25%): Be familiar with light art genres and contemporary work. Design, build, and show an original work of art that utilizes light as a primary medium.
5. Communication Charettes (5%): Rapid generation of ideas and experimentation with communicating lighting ideas to various audiences.

Prerequisites: permission of instructor.

Textbooks/Learning Resources: No required text. Use of the Lighting Research Center's laboratories, resource collection, mock up capabilities, and staff consultants is encouraged.

Offered (semester and year): spring semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Russ Leslie

LGHT-6770: Light and Health (3 credits)

Course Description: This course reviews the effects of light on human health as well as applications where light can be used to improve sleep, behavior, and mood.

Course Goals and Objectives: Review the principals of the visual system, teach basics of circadian photobiology, teach other non-visual effects of optical radiation, teach students what are the appropriate photometric measurements for the circadian system and teach them how to apply this knowledge into an architectural application. The main objective is to teach students that light is not just for vision and that other lighting characteristics need to be considered in the architectural environment to assure health and well being of users.

Student Performance Criterion/a addressed (list number and title): none assigned to this course.

Topical Outline (include percentage of time in course spent in each subject area):
1. Professional Communication Skills: 25%
2. Investigative Skills: 50%
3. Use of Precedents: 25%

Prerequisites: none

Textbooks/Learning Resources:
Roberto Refinetti. *Circadian Physiology* – 2nd Edition. Taylor and Francis.

Offered (semester and year): spring semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Mariana Figueiro

ARCH 6840: Engineering Acoustics (2 credits)

Course Description (limit 25 words): Provides introductory materials of engineering acoustics for students with basic knowledge in mathematics. Much of course materials are taken from the textbook *Acoustics for Engineers*.

Course Goals and Objectives: Students who successfully complete this course will demonstrate abilities to:
1. use wave equations to explain wave nature and wave phenomena of acoustics
2. solve acoustics fundamental problems related to engineering acoustics
3. use transducers (such as microphones, speakers, accelerometers) properly to conduct acoustic measurements
4. use basic concepts of acoustics science (such as wave propagations, dissipation, reflection, refraction, and absorption) to respond to field-specific questions.

Student Performance Criterion/addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
1. Introduction to the textbook, review of complex notations, 9.1%
2. Mechanic / Acoustic Oscillations, 9.1%
3. Wave equations in fluids, 18.2%
4. Horns and ducts, 18.2%
5. Spherical sound sources and line arrays, 18.2%
6. Piston membranes, diffraction and scattering, 13.6%
7. Dissipation, reflection, refraction, and absorption, 13.6%

Prerequisites: none

Textbooks/Learning Resources: Blauert & Xiang: *Acoustics for Engineers*, Spring 2009

Offered (semester and year): fall semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Ning Xiang

ARCH-6860: Applied Psychoacoustics (3 credits)

Course Description (limit 25 words): In this course, the fundamentals of psychoacoustics and auditory signal processing will be explained and discussed.

Course Goals and Objectives:
1. Students will demonstrate knowledge of the fundamental terms and principles in psychoacoustics
2. Students will demonstrate the ability to analyze the acoustics of rooms by ear and use field-specific language to describe the findings.
3. Upon reading current scientific papers in the field, the participant will be able to write a summary and analysis using psychoacoustic terminology.
4. The students will be able to design psychoacoustic experiments and execute a statistical analysis on these data.
5.The students will learn to design auditory models for the programming environment Matlab.

Student Performance Criterion/a addressed (list number and title):
25% Midterm Exam (fundamental content knowledge), 25% Final Project (scientific paper analysis, comparison), 25% Homework assignments, 25% Quizzes

Topical Outline (include percentage of time in course spent in each subject area):
1. course introduction & signals (7.7%)
2. physiology-auditory periphery (7.7%)
3. Absolute threshold of hearing: frequency selectivity & filters (7.7%)
4. pitch, loudness, masking (7.7%)
5. binaural hearing (7.7%)
6. Perceptual evaluation of rooms (7.7%)
7. mid-term exam (7.7%)
8. auditory scene analysis (7.7%)
9. auditory virtual environments (7.7%)
10. speech perception (7.7%)
11. physiology II – cognition (7.7%)
12. statistics (7.7%)
13. case studies (7.7%)
14. final project presentations (7.7%)

Prerequisites: none

Textbooks/Learning Resources: Yost, W. A. (2000). Fundamentals of Hearing: An Introduction: New York: Academic Press & selected papers and book chapters.

Offered (semester and year): Every Fall

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Jonas Braasch

ARCH-6870: Sonics Research Lab 1 (4 credits)

Course Description (limit 25 words): Focused on hands-on research tools, we will prepare basics of digital signal processing, develop an understanding of measurement equipment and analysis methods for sound.

Course Goals and Objectives: After successful accomplishment of this course work the students are able to analyze / calculate basic acoustical indices obtained from room-acoustical measurements using both commercially available tools and the MatLab-codes written by themselves. The students will be able to conduct a number of fundamental acoustical measurements, such as sound-pressure level measurements, computer-aided physical-acoustics measurements, room-acoustics measurements, particularly binaural and spatial room-acoustics measurements. The students are able to conduct hall measurements on their own. They are also able to calculate/analyze most of acoustics/ room-acoustics parameters required in ISO standards.

Student Performance Criterion/addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
1. Signals and Systems, 8.33%
2. Fourier Transforms, spectra and transfer functions, 8.33%
3. Introductory MatLab, m-script and m-functions, 16.67%
4. Visualize traveling waves, standing waves, and room modes, 16.67%
5. Room-acoustic property acquisition, calculation of room-acoustic parameters, 16.67%
6. Advanced room impulse response measurement methods, 16.67%
7. Filed measurement excises, 16.67%

Prerequisites: ARCH-4840 is co-requisite

Textbooks/Learning Resources:
ISO 3382, Long, *Architectural Acoustics*, (2nd Ed.), Academic Press

Offered (semester and year): fall semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Ning Xiang

ARCH-6880: Sonics Research Lab 2 (2 credits)

Course Description (limit 25 words): Introducing advanced acoustical measurement techniques, noise sources, noise control and vibration measurements, our own software will be developed for analysis / measurement of room acoustics.

Course Goals and Objectives: After this course, the students are able to conduct advanced acoustical experiments and independently to analyze / calculate experimental results. The students will be able to conduct a number of advanced acoustical measurements, chamber absorption measurements, chamber scattering measurements, in-situ reflection coefficient measurements and so on. The students will be able to use software developed by themselves to conduct real-life projects. They are also able to apply the conceptual and theoretical acoustics knowledge to real-life projects. The students will develop independent research ability. Demonstrate ability to carry out acoustics projects independently.

Student Performance Criterion/addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
1. Advanced tube measurements of impedance/phase propagation coefficients, 15.4%
2. Introduction to the finite difference scheme, 15.4%
3. In-situ measurements of reflections, 15.4%
4. Chamber Sound Absorption/Scattering Measurement, 15.4%
5. Sound transmissions through walls, 15.4%
6. Advanced Sound power measurements, 15.4%
7. Microperforated absorbers , 15.4%

Prerequisites: ARCH-4850 & ARCH-6870 are co-requisites

Textbooks/Learning Resources:
ISO 3382, Long, *Architectural Acoustics*, (2nd Ed.), Academic Press
Blauert & Xiang, *Acoustics for Engineers*, Springer, 2009

Offered (semester and year): fall semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Ning Xiang

ARCH-6890: Aural Architecture (3 credits)

Course Description (limit 25 words): This course discusses how the intertwined progress of building practice, social change, scientific knowledge, and economic interests changed built and virtual acoustic spaces over time.

Course Goals and Objectives:
1. After taking this course, the successfully participating students will have learned the fundamental terms and concepts of Aural Architecture.
2. The students will understand the principles of sound design, its application to the design of acoustics spaces.
3. The students will know the technological concepts for the design of virtual acoustic spaces (virtual environments, auditory displays, and studio technology in general).
4. The students will have deepened his/her knowledge in psychoacoustics to master the above goals.
5. The students will understand how psychophysical and statistical methods can be used to evaluate acoustic designs and establish design criteria.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
1. listening in natural environments
2. early music, Renaissance, Baroque, and Classic
3. 19th century music & science
4. the electric revolution
5. pre-WWII avant garde
6. the cradles of modern psychoacoustic
7. sonic spaces of modern music
8. spatial sound & music
9. the digital revolution
10. auralizations of concert halls & other spaces
11. interactive systems
12. cross-modal data displays
13. ecological psychoacoustics
14. final project presentations

Prerequisites: ARCH-4860 or permission by the instructor

Textbooks/Learning Resources: own textbook in progress, PowerPoint presentations, weekly readings (papers).

Offered (semester and year): spring semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Jonas Braasch

ARCH-6940.8: Interdisciplinary Research Studio (4 credits)

Course Description (limit 25 words): This course addresses interdisciplinary exchange at multiple scales on 'Built Ecologies'.

Course Goals and Objectives: *A major* ***pedagogic objective*** of the studio is to increase your ability to critically identify, analyze, and amplify select forces and phenomena through the material and systemic construct of built form. *The* ***research objective*** of this studio is to further test, design, develop and optimize those appropriate integrated building propositions from the fall studio with architectural design. It is an exercise that is parametrically linked both to the first principles and scientific phenomena operating in your proposition, and to the many other multiple criteria of design; programmatic, bioclimatic, technologic, economic, social and cultural.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
Research [15%], Design Responses [15%], Project Design and Development [40%], Research integration [20%], Process documentation and Tools [10%]

Prerequisites: none

Textbooks/Learning Resources: Among the important texts for this course are the following:
1. Addington, M., *Smart Materials and Technologies*, Chapter 2, pages 21-39, Architectural Press, Burlington, MA, 2005
2. Bachman, L. Integrated Buildings : The Systems Basis of Architecture; Chapter 3: Integrated Building Systems pages 32-48; Chapter 11: Green Architecture: pages 402-450., Wiley, NY, 2002
3. Bruegman, R. "Architecture and its Image: The Pencil and the Electronic Sketchboard" *Architectural Representation and the Computer*, pages 139-151. MIT Press, Cambridge, 1989.
4. Casey, Edward "Wherefore Earth-Mapping" in *Earth Mapping: Artists Reshaping Landscape* Minneapolis, Minnesota UP: 2005), pages 180-186
5. Cosgrove, Denis "The agency of mapping: Speculation, Critique, and Invention" in x, ed., M*appings* (London: Reaktion Books, 1999), 240
6. Cohen, Scott P. *Contested Symmetries and Other Predicaments in Architecture*, page 12-21; Princeton Architectural Press, NY, 2001
7. Daniels, Klaus *Low-Tech Light-Tech High-Tech*, Chapters 8-9, pages 130-173, Birkhauser Verlag AG (Sep 2001)
8. Foucault, Michel *The Order of Things*, Chapter 2: The prose of the World, pages: 17-45; Vintage Books Edition, NY, 1994.
9. Hurley, David "About Making", *Perspecta: The Yale Architectural Journa*l, Vol. 19, pages 83-86
10. Malkawi, Ali *Advanced Building Simulation: Trends in Building Simulation*, pages 4-25, Spon Press, NY; 2004
11. Schittich, C. *In Detail: Building Skin: Concepts, Layers, Materials*, pages 8-28, Birkhauser; 1 edition, 2001
12. Schodek, Daniel *Digital Design and Manufacturing*: Chapter 10 Fundamentals of Digital Modeling, pages 179-189, Wiley, New Jersey, 2005
13. Stattmann, N. *Ultra Light - Super Strong: A New Generation of Design Materials: Nature- Tech*, pages 34-43, Birkhauser, Frankfurt, 2003

Offered (semester and year): spring semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Anna Dyson

ARCH-6962.8: Adv. Integrated Systems Prototype Development (4 credits)

Course Description (limit 25 words): This course is structured at the MDIS level (Materials, Devices and Integrated Systems) that encompasses from module of the 'skin' to 'skin' systems.

Course Goals and Objectives:
The challenge of a built ecology entails a multi-scalar design approach at the sites of energy transfer. The Building Envelope, its skin, is the primary recipient of bioclimatic energy flows. But reception is not necessarily actual receipt. The current notion of High Performance is characterized by the degree to which, for a building, the outside is kept out and the inside is kept in. Students will be asked to challenge this preconception of performance and to begin to investigate and design methods of energy transfer and transformation at the skin. How do we begin to change the very idea of performance by marshalling the variety of flows available and recasting waste as resource? Working at the MDIS level (Materials, Devices and Integrated Systems) that encompasses the module of the skin and the skin system, students will begin with waste materials, usually rejected and unnoticed, and work to transform their value through morphology and integrated performance. Reconsidering waste as resource, we will work with post-consumer paper pulp, forming modules, the "scale" of the skin. The paper pulp will form a design-study basis for the jump to Agricultural Byproduct building materials using Mycelium as adhesive, an agricultural byproduct with advanced structural, acoustic, sorption and desiccation performances

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area): N/A

Prerequisites: ARCH-6340

Textbooks/Learning Resources:
1. Cardwell, Cather and Groak, *New Materials for Construction,* The Arup Journal, 3/1997
2. Lefteri, Chris *Making It: Manufacturing Techniques for Product Design*, Laurence King Publishing, 2012
3. Kieran, Stephen and James Timberlake. *Refabricating Architecture: How Manufacturing Methodologies are Poised to Transform Building Construction*. New York: McGraw Hill, 2004.
4. Kolarevic, Branko and Kevin Klinger. *Manufacturing Material Effects. Rethinking Design and Making in Architecture*. New York: Spoon Press, 2008
5. Petroski, Henry. *The Evolution of Useful Things*. Vintage Books, 1994

Offered (semester and year): fall and spring semesters annually
Fall / Spring

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Josh Draper, Matt Gindlesparger

M. ARCH REQUIRED COURSES
1ST-YEAR FALL SEMESTER

ARCH-2620: Graduate Architecture Design 2* (6 credits)

Course Description: This graduate studio focuses on site design, public, and institutional design in the form of exhibition space, artist studios, and residencies.

Course Goals and Objectives: Students who complete this studio will be able to demonstrate
1. the ability to effectively use basic formal, organizational, and environmental principles and the capacity of each to inform two- and three-dimensional design.
2. the ability to apply the fundamentals of both natural and formal ordering systems and the capacity of each to inform two- and three-dimensional design.
3. the ability to examine and comprehend the fundamental principles present in relevant precedents and to make informed choices about the incorporation of such principles into architecture and urban design projects.
4. The ability to respond to site characteristics, including urban context and developmental patterning, historical fabric, soil, topography, ecology, climate, and building orientation, in the development of a project design.

Student Performance Criterion/a addressed (list number and title): A.4: Architectural Design Skills, A.5: Ordering Systems, A.6: Use of Precedents, B.2: Site Design

Topical Outline (include percentage of time in course spent in each subject area):
1. Analysis (of assigned art and artists residency precedents) and site Research: 25%
2. Preliminary design intervention in landscape (design study: 25%
3. New Residency and art center design for OMI International Arts Center: 50%

Prerequisites: ARCH-2610 (old curriculum), none in new curriculum

Textbooks/Learning Resources:
This course relies on the distribution of assigned readings, assignment of precedent references and proximity to the proposed site of the design studio and access to the client stakeholders at the OMI International Arts Center.

Offered (semester and year): fall 2014*

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Lonn Combs, David Bell, Fleet Hower, Murat Mutlu, Kyle Stover

*This studio is being replaced by ARCH-5200 in fall 2015.

ARCH-5100: History, Theory, Criticism 1 (4 credits)

Course Description: This course combines ARCH-4100 and ARCH-4130 for students in the M. Arch program. Thus, it seeks to achieve the goals of both those courses.

Course Goals and Objectives: Students who successfully complete this course will be able to:
FROM ARCH-4100
1. evaluate the differences and connections between architecture as it was conceived and produced in the past and in the modern and contemporary world.
2. demonstrate the ability through comparison and contrast to analyze and differentiate between various approaches to building throughout history.
3. evaluate the relationship between different intellectual perspectives and their architectural consequences.
4. apply their knowledge to discern the architectural characteristics of differing historical and cultural contexts.
5. analyze and write about selected architectural phenomena and basic principles of architectural order in their own words.
FROM ARCH-4130
1. demonstrate an understanding of the parallel and divergent histories of architecture and the cultural norms of a variety of indigenous, vernacular, local, and regional settings in terms of their political, economic, social, ecological, and technological factors.
2. demonstrate an understanding of the diverse needs, values, behavioral norms, physical abilities, and social and spatial patterns that characterize different cultures and individuals and the responsibility of the architect to ensure equity of access to sites, buildings, and structures.
3. demonstrate an ability to discern the cultural characteristics of differing architectural events, as well as to analyze basic principles entailed in relating architecture to other cultural phenomena.
4. demonstrate an ability to write about selected architectural phenomena (realized buildings, unrealized projects and urban spaces/places/realms) in their own words.
5. demonstrate an ability—through comparing/contrasting—to analyze and differentiate between various approaches to buildings and urban spaces.

Student Performance Criterion/a addressed (list number and title): A.7History & Global Culture, A.8: Cultural Diversity & Social Equity

Topical Outline (include percentage of time in course spent in each subject area):
The Enlightenment, 16%, Baroque & Rococo, 16%, Renaissance & Mannerism, 16%, Gothic, 16% Romanesque, 16%, Roman & Late Roman, 20%

A Review of the Early Modern Movement, 14.3%, Post-War Monumentality and Reform, 14.3%, Post War to Cold War, 14.3%, Utopia and Counter Utopia, 14.3%, Modern / Postmodern, 14.3%, Modernism Reconfigured, 14.3%, Towards a Dematerialized Future, 14.3%

Prerequisites: none

Textbooks/Learning Resources: The instructor's published notes for ARCH-4100
For ARCH-4130: Kenneth Frampton, *Modern Architecture: A Critical History*, Barry Bergdoll, *European Architecture 1750-1890*, William Curtis, *Modern Architecture Since 1900,* Adrian Forty, *Words & Buildings*, and numerous primary sources that vary each semester.

Offered (semester and year): fall semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): David Bell & Lydia Kallipoliti

ARCH-5140: Structures 1* (3 credits)

Course Description: This course demonstrates basic principles of statics and mechanics of structural elements such as beams, columns, frames, and trusses, and fundamental selection of structural systems.

Course Goals and Objectives: Students who successfully complete this course will demonstrate the ability to

1. understand the rule-of-thumb dimensions and selections of contemporary structural systems.
2. understand the basic principles of structural stability and behavior in withstanding gravity and lateral forces.
3. understand principles of statics and mechanics and basic structural analyses of beams, columns, frames, and trusses.
4. build and load test architecturally creative and structurally sound physical models to visualize structural behavior and cultivate structural intuition.

Student Performance Criterion/a addressed: B.5: Structural Systems

Topical Outline:

1. Introduction to Structures and Structural Systems	30%
2. Structural Mechanics	15%
3. Analysis of Structural Elements	35%
4. Principles of Structural Design	20%

Prerequisites: ARCH 2510

Textbooks/Learning Resources: Schodek, D., and M. Bechthold, *Structures,* Prentice Hall. (textbook)
Hibbeler R.C.," Structural Analysis," Prentice Hall.
Onouye B.," Statics and Strength of Materials," Prentice Hall.
MacDonald A., " Structure and Architecture" Architectural Press.
Hanaor A.," Principles of Structures," Blackwell Science.
Sandaker, Eggen," The Structural Basis of Architecture," Watson-Guptill.
Zalewski W. and E. Allen.," Shaping Structures - Statics," John Wiley & Sons, Inc.
Gordon, J.," Structures or why things don't fall down," A Da Capo.

Offered: fall semester annually

Faculty assigned: Ivan Markov

*****This graduate course is co-listed with ARCH-2330.

ARCH-5160: Digital Constructs 1* (2 credits)

Course Description: The focus is advanced modeling techniques in Rhino and competence with polygon modeling. Students will understand substantive differences between polygonal and NURBs based modeling, and when to use each. Students will also develop a basic competency with geospatial mapping programs and site grading strategies.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. demonstrate an understanding of the differences as well as advantages and disadvantages of NURBs-based modeling programs and polygon-based programs
2. Demonstrate ability to efficiently create NURB models of complex surfaces with high level of precision
3. Develop a high proficiency of polygon modeling strategies and techniques, and exploit their advantages to leverage the strengths of polygon modeling
4. Produce renderings of both NURBs and polygon based projects that include effective materiality and lighting
5. Become proficient in creating digital models suitable for 3d printing and approved by instructor - models must be watertight and have no non-manifold edges
6. Demonstrate an understanding of GIS and how to use it to extract data sets for use in design projects
7. Demonstrate an understanding of site design fundamentals, with a focus on site grading

Student Performance Criterion/a addressed (list number and title): none assigned for this course.

Topical Outline (include percentage of time in course spent in each subject area):
Grading: Weekly assignments: 30%
Project I review: 35%
Project II review: 35%
Students will complete two sequential projects in Digital Constructs 3, one focused on building competency with complex NURBs modeling, and the second focused on polygon modeling. Time spent on these projects will constitute roughly a 50/50 split of the semester. Students will render and 3D print the outcomes of these projects, with emphasis placed on advanced rendering techniques, lighting, and material application, as well as proper preparation of digital models to be 3d printed.

Prerequisites: none

Textbooks/Learning Resources: No textbooks are required for this course, however students will be provided with pdf's of relevant reading material, as well as access to Rhino, Maya, and any other software necessary to complete the course

Offered (semester and year): fall semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Fleet Hower

*This graduate course is co-listed with ARCH-2540

ARCH-5200: Graduate Architecture Design 1* (5 credits)

Course Description (limit 25 words): This fall semester second-year studio focuses on site design, public, and institutional design in the form of exhibition space, artist studios, and residencies.

Course Goals and Objectives: Students who complete this studio will be able to demonstrate
1. the ability to gather, assess, record, and comparatively evaluate relevant information and performance in order to support conclusions related to a specific project or assignment.
2. the ability to effectively use basic formal, organizational, and environmental principles and the capacity of each to inform two- and three-dimensional design.
3. the ability to apply the fundamentals of both natural and formal ordering systems and the capacity of each to inform two- and three-dimensional design.
4. the ability to examine and comprehend the fundamental principles present in relevant precedents and to make informed choices about the incorporation of such principles into architecture and urban design projects.
5. the ability to prepare a comprehensive program for an architectural project that includes an assessment of client and user needs; an inventory of spaces and their requirements; an analysis of site conditions (including existing buildings); and a definition of site selection and design assessment criteria.
6. The ability to respond to site characteristics, including urban context and developmental patterning, historical fabric, soil, topography, ecology, climate, and building orientation, in the development of a project design.

Student Performance Criterion/a addressed (list number and title): A.3: Investigative Skills, A.4: Architectural Design Skills**,** A.5: Ordering Systems, A.6: Use of Precedents, A.8: Cultural Diversity & Social Equity**,** B.1: Pre-Design [partial]**,** B.2: Site Design

Topical Outline (include percentage of time in course spent in each subject area):
1. Analysis (of assigned art and artists residency precedents) and site Research: 25%
2. Preliminary design intervention in landscape (design study: 25%
3. New Residency and art center for OMI International Arts Center: 50%

Prerequisites: none

Textbooks/Learning Resources: This course relies on the distribution of assigned readings, assignment of precedent references and proximity to the proposed site of the design studio and access to the client stakeholders at the OMI International Arts Center.

Offered (semester and year): fall 2015 and every fall thereafter*

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): David Bell, Fleet Hower, Edwin Liu, Ted Ngai, Kyle Stover

*This studio replaces ARCH-2630 in fall 2015.

ARCH-5300: Materials and Construction Systems* (3 credits)

Course Description: This course provides a basic understanding of material(ity), form and figuration in basic structural loading, and the synergy of the two through assemblage.

Course Goals + Objectives:
1. Introduce basic structural principles including an understanding of forces, an introduction to structural systems and how they distribute and resist forces, and an introduction to sectional properties and their relationship to material properties.
2. Introduce first principles of the physical properties of materials. Learn how the internal composition of materials relates to these basic properties.
3. Introduce methodologies for developing criteria for material selection, use and deployment based on performance and fitness for use.
4. Gather actual materials in order to directly engage—compare, + contrast materials
5. Document materials *in-situ* in various states—i.e., natural, processed, ephemeral as we.
6. Introduce the concept of material life-cycle(s)
7. Introduce the concept of ***assemblage*** as the synergy of material fitness + structural configuration

Outcomes
1. Obtain a fundamental understanding of basic structural properties. “Know-how” and intuition will be developed through the active testing + experimentation of various structural loading types + their effect on the figuration of structural systems.
2. Obtain a fundamental, ‘first principles’ approach to engaging materials + materiality. Focus on the properties, uses, and implications of the most common groups of materials, while generating the ”know-how” that allows design to emerge from a critical engagement of a material.
3. A synthesis of the accumulated knowledge of materials + structural properties through an engagement with performance criteria through authorship + assembly. The open questions that arise from the connection + assembly of two different elements/materials, and how this affords design potential + opportunity will be a key outcome.

Student Performance Criterion/a addressed (list number and title): B.7:,Building Envelope Systems & Assemblies, B.8: Building Materials & Assemblies

Topical Outline:
We will address the properties, use, and implications of these three aspects of material + design, in both a historical and abstract manner. However, the primary aim of the course will be to develop a “know how” of materiality (35% of the course time), structure (35% of the course time), and assemblage (35% of the course time), through a series of “hands-on” interrogations and research presentations. These exercises will identify the tactics we as architects deploy to assess and engage the resistances intrinsic to these three primary subjects, and how they can afford an affective/effective departure for design.

Prerequisites: none

Textbooks/Learning Resources: Ching, Franics D.K., *Building Construction Illustrated*. Hoboken: John Wiley and Sons, 2008.

Offered (semester and year): fall semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Demetrios Comodromos

* This graduate level course is co-listed with ARCH-2510 & -2350.

M. ARCH REQUIRED COURSES
1ST-YEAR SPRING SEMESTER

ARCH-2630: Graduate Architecture Design 3* (6 credits)

Course Description (limit 25 words): AD 3 tackles the problem of designing multi-unit collective housing for an urban site. Students work in team of two.

Course Goals and Objectives: The projects designed in AD 3 must successfully navigate the pragmatics of organizing a complex architectural program into a coherent building that sensitively responds to and shapes its user's needs, while also maintaining high levels of formal, material, and aesthetic experimentation that push the discipline forward. Students must work productively as members of a design partnership.

Student Performance Criterion/a addressed (list number and title): A.4: Architectural Design Skills, A.5: Ordering Systems, A.6: Use of Precedents, B.2: Site Design

Topical Outline (include percentage of time in course spent in each subject area):
Week 1 – Week 3: Documentation and Analysis of a precedent project (A.5, A.6), 20%
Week 4 – Week 6: Schematic Design of building and site (A.4, A.5, B.2), 20%
Week 7 – Week 8: Schematic Design of housing units (A.4, A.5), 13.33%
Week 9: Midterm review; assess the schematic designs at the scale of the entire building and site and at the scale of the housing units. Discuss refinement and integration of the project at both scales. 6.67%
Week 10 – Week 12: Development of large-scale section model (A.4, A.5), 20%
Week 13 – Week 14: Synthesis of all aspects of the project (A.4, A.5, B.2), 13.33%
Week 15: Final review, 6.67%

Prerequisites: ARCH-2620

Textbooks/Learning Resources: Readings were assigned by each individual studio instructor. Lectures given by instructors to the entire class covered the following topics: diagramming, housing typologies, site design and planning, and zoning and code for housing design.

Offered (semester and year): spring 2015

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Ted Krueger, Adam Dayem**,** Edwin Liu**,** Zbigniew Oksiuta**,** Elena Perez Guembe, Fleet Hower

* This course will be replaced by ARCH-5210 in spring 2016.

ARCH-5110: History, Theory, Criticism 2 (4 credits)

Course Description: This course combines ARCH-4110* and ARCH-4120 for students in the M. Arch program. Thus, it seeks to achieve the goals of both those courses.

Course Goals and Objectives: Students who successfully complete this course will be able to:
FROM ARCH-4110*
1. evaluate the differences and connections between architecture as it was conceived and produced in the past and in the modern and contemporary world.
2. demonstrate the ability through comparison and contrast to analyze and differentiate between various approaches to building throughout history.
3. evaluate the relationship between different intellectual perspectives and their architectural consequences.
4. apply their knowledge to discern the architectural characteristics of differing historical and cultural contexts.
5. analyze and write about selected architectural phenomena and basic principles of architectural order in their own words.
FROM ARCH-4120
1. identify, analyze and explain the major architectural movements, theories, and projects of modern civilization as they evolved in relation to their respective cultural and historical frameworks.
2. analyze architecture and architectural theories related to the modern movement through texts and images.
3. demonstrate through writing and test responses how buildings and urban spaces are both informed by but also inform cultural, philosophical, religious, political and economic forces in western, non-western, and global civilizations.
4. communicate coherently both orally and in writing the architectural ideas of the visual and verbal vocabularies of the many manifestations of modern architecture and its historical precursors.
5. develop through research and critical thinking meaningful theses in writing and the course exams with respect to specific architecturally significant buildings and concepts identified in class and the required readings.

Student Performance Criterion/a addressed (list number and title): A.7: History & Global Culture, A.8: Cultural Diversity & Social Equity

Topical Outline (include percentage of time in course spent in each subject area):
The Islamic World, 20%, The Indian Sub-Continent, 20%, Ancient Greece, 30%, Ancient Egypt, 15%, China, 15%, The Origins of Modernity, 14.3%, Industrialization and its Discontents, 14.3%, Metropolis & Modernity, 14.3%, The Garden in the City, 14.3%, Modernism & Manifesto, 14.3%, Modernism and Mass Production, 14.3%, L'Esprit Nouveau, 14.3%

Prerequisites: ARCH-5100

Textbooks/Learning Resources: the instructor's published course notes and Kenneth Frampton, *Modern Architecture: A Critical History*, Barry Bergdoll, *European Architecture 1750-1890*, Joseph Rykwert, *The First Moderns*, and numerous primary sources that vary each semester.

Offered (semester and year): spring semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): David Bell & Lydia Kallipoliti

*In spring 2016, this course replaced part of the content of ARCH-2110 & Arch-2120**.**

ARCH-5170: Digital Constructs 2* (2 credits)

Course Description (limit 25 words): This course helps students develop an advanced skill set of computational techniques beyond digital modeling and representation, e.g., parametrics, BIM fundamentals, environmental issues, etc.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. demonstrate an understanding of basic computational concepts as well as their general appearance in code, and how to implement them.
2. demonstrate the ability to code a custom-built tool that can be used in a design studio setting
3. demonstrate the ability to use environmental analysis as an influential component of site and massing design.
4. demonstrate a basic understanding of integrated design.
5. understand the integration of building systems and pricing in the design stages of a project.
6. perform environmental analysis studies on current or past studio projects, and understand the environmental implications of the design.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
1. The course will include one significant project at the beginning of the semester, and then will investigate a series of additional methods of analysis later in the semester. 33.33%
2. The larger project will teach students a basic understanding of computational thinking, as well as the ability to write computer code to manipulate geometry. These exercises will conclude with each student writing a custom tool that can be used in their studio work. 33.33%
3. Subsequent smaller exercises will include introductions to analysis programs that investigate environment, material cost, code restrictions, and geometric design. Many of these exercises will involve the introduction of a new piece of software, which students will learn for a week, and then subsequently perform a relevant analysis. 33.33%

Prerequisites: ARCH-5160

Textbooks/Learning Resources: No textbooks are required for this course, however students will be provided with pdf's of relevant reading material, as well as access to Rhino, and any other software necessary to complete the course

Offered (semester and year): spring semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Fleet Hower

*This graduate level course is co-listed with ARCH-2550.

ARCH-5210: Graduate Architecture Design 2* (5 credits)

Course Description (limit 25 words): AD 3 tackles the problem of designing multi-unit collective housing for an urban site. Students work in team of two.

Course Goals and Objectives: The projects designed in AD 3 must successfully navigate the pragmatics of organizing a complex architectural program into a coherent building that sensitively responds to and shapes its user's needs, while also maintaining high levels of formal, material, and aesthetic experimentation that push the discipline forward. Students must work productively as members of a design partnership.

Student Performance Criterion/a addressed (list number and title): A.4: Architectural Design Skills, A.5: Ordering Systems, A.6: Use of Precedents, B.2: Site Design

Topical Outline (include percentage of time in course spent in each subject area):
Week 1 – Week 3: Documentation and Analysis of a precedent project (A.5, A.6), 20%
Week 4 – Week 6: Schematic Design of building and site (A.4, A.5, B.2), 20%
Week 7 – Week 8: Schematic Design of housing units (A.4, A.5), 13.33%
Week 9: Midterm review; assess the schematic designs at the scale of the entire building and site and at the scale of the housing units. Discuss refinement and integration of the project at both scales. 6.67%
Week 10 – Week 12: Development of large-scale section model (A.4, A.5), 20%
Week 13 – Week 14: Synthesis of all aspects of the project (A.4, A.5, B.2), 13.33%
Week 15: Final review, 6.67%

Prerequisites: ARCH-5200

Textbooks/Learning Resources: Readings were assigned by each individual studio instructor. Lectures given by instructors to the entire class covered the following topics: diagramming, housing typologies, site design and planning, and zoning and code for housing design.

Offered (semester and year): spring 2015

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): David Bell, additional faculty to be named later.

* This course will be taught for the first time in spring 2016.

ARCH-5310: Environmental & Ecological Systems* (4 credits)

Course Description: This course explores climate-responsive design, including passive heating, cooling, ventilation, and daylighting, for thermal and visual comfort, through lectures, weekly laboratories, and a research project.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. gather climate information for a particular location and use it to quantify local solar, wind, and daylighting resources, as well as evaporative cooling potential.
2. use instruments such as weather meters, solar pathfinders, non-contact thermometers, and illuminometers to investigate existing buildings and to characterize microclimate conditions.
3. calculate heat gains and losses through standard building envelope assemblies.
4. design operable shading devices that meet pre-established criteria for performance.
5. evaluate the probable effectiveness of a passive solar heating system.
6. size and locate apertures for schematic-level natural ventilation systems.
7. size and locate glazing for schematic-level daylighting systems.
8. simulate the performance of such systems, and test alternative elements of such systems, in a whole-building energy simulation program that accurately simulates passive systems.

Student Performance Criterion/a addressed (list number and title): B.6: Environmental Systems

Topical Outline (include percentage of time in course spent in each subject area):

1. Vernacular architecture (8%)
2. Heat transfer (8%)
3. Thermal comfort (8%)
4. Energy modeling (8%)
5. Climates (8%)
6. Solar geometry (8%)
7. Thermal envelopes (8%)
8. Passive solar heating (8%)
9. Passive cooling (8%)
10. Shading (8%)
11. Daylighting (8%)
12. Rainwater & Site design (8%)
13. Research projects (4%)

Prerequisites: none

Textbooks/Learning Resources: Lechner, *Heating, Cooling, Lighting*, 4th edition (2014)

Offered (semester and year): spring semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Alexandra Rempel

* This graduate course is co-listed with ARCH-2360.

ARCH-5330: The Economics of Architecture* (2 credits)

Course Description: This course addresses economic issues related to architectural practice within national and global economics as well as those issues specific to practice and the profession.

Course Goals and Objectives: Students who have successfully completed this course will be able to:
1. demonstrate a knowledge of the responsibilities of the architect to elicit, understand and reconcile the needs of the Client, Owner, User Groups and the public and community domains
2. demonstrate a knowledge of the methods for competing for commissions, selecting consultants, assembling teams and recommending contractual project delivery methods
3. demonstrate the ability to work effectively in teams through successful completion of class projects.
4. apply knowledge of the architects' responsibility to the public and the client as determined by registration law, professional service contracts to specific situations.

Student Performance Criterion/a addressed (list number and title): B.10: Financial Considerations, D.3: Business Practices

Topical Outline (include percentage of time in course spent in each subject area):
Architecture and the Building Industry in the Larger Economy, 12.5%
Domestic and global economies, 12.5%
Organization of Architectural Practice, 12.5%
Globalization of Practice, 12.5%
Cost Estimation, Fees, Services and Consultants, 12.5%
Design-Build and Alternative Practice Models, 12.5%
Case Studies Presentations and Discussions, 12.5%
The Design of Design Practices, Architect's Role During Construction, 12.5%

Prerequisites: none

Textbooks/Learning Resources:
Rosalie Ruegg & Harold Marshall, *Building Economics: Theory and Practice*

Offered (semester and year): spring semester annually*

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): N/A

*This course will not be offered with an ARCH prefix until spring 2019. Prior to that date, it will be taught in RPI's Lally School of Management. It will be co-listed with ARCH-4590.

M. ARCH REQUIRED COURSES
2nd-YEAR FALL SEMESTER

ARCH-4360.80: Architecture Design 4* (6 credits) (CASE)

Course Description: This semester seeks to resolve the realities of design actualization and technological research using a single, speculative project to produce both knowledge and architecture.

Course Goals and Objectives:
Each student will develop ways to approach with equal measure issues of site, environment, context, history, concept, structure, materials, systems, and geometry in order to provoke a tangible and persuasive architecture that:
1. Advances their insights and thesis in response to the program brief
2. Furthers ecological and parametric approaches to the building and thinking of architecture and design
3. Produces architectural knowledge and expands possibility through the act of integration, and ecological thinking
Students will develop a capacity to design at various scales of material realization and assembly in support and development of conceptual intentions/ideas while integrating building, environmental, and programmatic systems and addressing regulatory and technical requirements. Students are expected to iteratively address multiple design considerations and in doing so to develop their awareness and understanding regarding how:
1. One scale informs/impacts another,
2. Criteria established by considerations of environmental building performance inform and positively affect morphology, structure, envelope and the planning and design of buildings
3. Disciplines affecting architectural design (structural, mechanical, acoustic, lighting, etc...) cannot be seen as exclusive, isolated, or compartmentalized practices, and to develop the capacity to integrate that understanding early into the design process.

Student Performance Criterion/a addressed (list number and title): A.2: Design Thinking Skills, A.3: Investigative Skills, A.4: Architectural Design Skills, A.5: Ordering Systems, B.1: Pre-Design, C.2: Integrated Evaluations & Decision-Making Design Process, C.3: Integrative Design

Topical Outline:
The 17th Century Salon as program and ground for speculation and the projection of living information and social interaction will be the focus of the studio's attention and the testing bed of our methodology this semester. In particular, the studio will reconsider the existing space of the current faculty office and conference area at CASE, a 450 ft2 space that operates as both the front door and main gathering area for the center. The question we will ask is how the reconsideration of the surfaces that define the room and their constituent and internal modularity and makeup can participate in the making of the room as CASE's Salon—a place of interaction, projection, and performance.
The project will move through issues of existing condition analysis (10%), programming and conceptualization (20%), material design and processing(30%), prototyping (20%), installation (15%), gathering and processing of data (5%)all in the context of reconsidering the actual architecture of the room, and its transformation into the CASE Salon.

Prerequisites: ARCH-2630

Course Text: Koolhaas, Rem. *Delirious New York: A Retroactive Manifesto for Manhattan*,. New York: Monacelli Press, 1994.

Offered (semester and year): fall semester annually (CASE)

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Demetrios Comodromos, Nancy Diniz, Josh Draper, Anna Dyson

* This course will be replaced by ARCH-6610.8 in fall 2016.

ARCH-5150: Structures 2* (3 credits)

Course Description: This course demonstrates basic principles and behavior of structural systems under gravity lateral and seismic loads with emphasis on steel and concrete materials.

Course Goals and Objectives: Students who successfully complete this course will demonstrate the ability to:
1. understand the load path of gravity and lateral forces in the basic structural assemblies.
2. understand the concept and load transfer in advanced structural systems.
3. understand the basic principles of steel and concrete systems.
4. understand the basic principles of seismic design.
5. build and load test architecturally creative and structurally sound physical models to visualize structural behavior and cultivate structural intuition.

Student Performance Criterion/a addressed: B.5: Structural Systems

Topical Outline:
1. Review of Structures 1 5%
2. Gravity and Lateral Load Transfer in basic Structural Systems 20%
3. Principles in Steel Design 15%
4. Principles in Concrete Design 15%
5. Concepts in Seismic Design 10%
6. Advanced Structural Systems 15%
7. Structural Design 20%

Prerequisites: ARCH 5140

Textbooks/Learning Resources: Schodek, D., and M. Bechthold, *Structures,* Prentice Hall. (textbook)
Hibbeler R.C.," Structural Analysis," Prentice Hall.
Onouye B.," Statics and Strength of Materials," Prentice Hall.
Fanella, D,"Steel Design for Engineers and Architects," Van Nostrand Reinhold.
AISC "Manual of Steel Design – ASD/LRFD" (recommended).
Shafer R." Reinforced Concrete – Preliminary Design for Architects and Builders,"
McGraw-Hill, Inc. (recommended).
Zalewski W. and E. Allen.,"Shaping Structures - Statics," John Wiley & Sons, Inc.

Offered: fall semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Ivan Markov

* This course is co-listed with ARCH-4330.

ARCH-6320 Built Ecologies 1 (3 credits)

Course Description: Built Ecologies I investigates the principles of physics and ecology integral to the ways that buildings interact with their occupants and surroundings.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. express a meaningful view of the role(s) of **ecological theory** in his/her design values.
2. interpret **climate data** and use it quantitatively in building simulation.
3. define standard and adaptive **thermal comfort** quantitatively and to explain the interactions of temperature, humidity, and air velocity in creating perceptions of thermal comfort and delight.
4. calculate quantities of **heat transferred** from one building element to another, the thermal properties, proximities, and temperatures of the fluids and materials involved.
5. estimate quantities of **air transferred** from one space to another through cross- or stack-driven passive ventilation, given the configuration of openings and indoor and outdoor temperatures
6. identify design elements that affect the simulated **passive heating or passive cooling performance** of a given computational model, hypothesize effective redesigns, and test the redesigns for effectiveness.
7. evaluate the effectiveness of a given **daylighting strategy** on visual comfort and electric lighting energy use and propose effective redesigns.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
1. Classical and Architectural Ideas of Ecology (10%)
2. Climates and Climate Analysis (10%)
3. Thermal Comfort and Thermal Delight (10%)
4. Thermodynamics and Efficiency (10%)
5. Whole-Building Energy Modeling (10%)
6. Heat Transfer (10%)
7. Radiation and Solar Geometry (10%)
8. Glass and Windows (10%)
9. Natural Ventilation (10%)
10. Research Projects (10%)

Prerequisites: ARCH-5310

Textbooks/Learning Resources:
1. Atkins: *Thermodynamics, A Very Short Introduction*
2. Heschong: *Thermal Delight in Architecture*
3. Incropera and DeWitt: *Fundamentals of Heat and Mass Transfer*
4. Morton: *The Ecological Thought*
5. Owen: *The Efficiency Dilemma*
6. Ricklefs: *Ecology*

Offered (semester and year): fall semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Alexandra Rempel

ARCH-6370.80: Environmental Parametrics Workshop* (2 credits)

Course Description: This course describes the meaning, values and methods of deploying parametric techniques to achieve comprehensive performance design as an analytical tool and a generative device.

Course Goals and Objectives:
1. Students will become fluent in the platforms and software necessary to setup models and simulations of a range of environmental conditions and their effects on buildings and their contexts.
2. Students will be able to create parametrically-based models and simulations that establish complex feedback loops between building morphology and system optimization in relationship to environmental performance.
3. Students will gain a direct understanding of the disciplines complicit with architecture and sustainability, and their roles and potentials in creating ecologies of design for the production of architecture by engaging with those professionals through office visits and invited lectures and weekly reading-based discussions.
4. Students will gain a fluency in the discourse of built ecologies and sustainability in urban contexts by directly observing complex urban systems in New York City by direct observation during bi-weekly group walks and site visits.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline:
TECHNIQUE: PARAMETRICS (60%)
workshops to orient the participants in the software platforms, reservoirs of knowledge and resource, and working methods to create comprehensive existing/as-built models and simulations, parametrically-driven geometry and morphology feedback tools.
TACTICS: PERFORMANCE DESIGN (20%)
students will continue to consider and situate the flows of knowledge as created and manipulated in an effort to produce architecture, and how they can be further positioned with the aim of performance-design.
STRATEGIES: DESIGNED ECOLOGIES (20%)
students will consider and gain an awareness of design ecology as the framework with which we 'see' and as such understand performance design and parametrics as a means to reinforce a considered approach to architectural intervention that emphasizes open systems and flows of energy and information as the basic 'material' afforded to the architect.

Prerequisites: none

Textbooks/Learning Resources:
Berman, Marshal. *All That Is Solid Melts into Air: The Experience of Modernity*. New York: Penguin Books, 1982.
De Certeau, Michel. *The Practice of Every Day Life*. Berkeley: University of California Press, 1984.
Lost in Translation. Dir. Sofia Coppola. Perf. Bill Murray, Scarlett Johansson, Giovanni Ribisi. Universal Studios, 2003
New York: A Documentary Film, Dir Ric Burns. PBS,

Offered (semester and year): fall and spring annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Demetrios Comodromos

* Last taught in fall 2014 and is replaced by ARCH-6380.80 in fall 2015.

ARCH-6380.80: Environmental Parametrics* (2 credits)

Course Description: This course describes the meaning, values and methods of deploying parametric techniques to achieve comprehensive performance design as an analytical tool and a generative device.

Course Goals and Objectives:
1. Students will become fluent in the platforms and software necessary to setup models and simulations of a range of environmental conditions and their effects on buildings and their contexts.
2. Students will be able to create parametrically-based models and simulations that establish complex feedback loops between building morphology and system optimization in relationship to environmental performance.
3. Students will gain a direct understanding of the disciplines complicit with architecture and sustainability, and their roles and potentials in creating ecologies of design for the production of architecture by engaging with those professionals through office visits and invited lectures and weekly reading-based discussions.
4. Students will gain a fluency in the discourse of built ecologies and sustainability in urban contexts by directly observing complex urban systems in New York City by direct observation during bi-weekly group walks and site visits.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline:
TECHNIQUE: PARAMETRICS (60%)
workshops to orient the participants in the software platforms, reservoirs of knowledge and resource, and working methods to create comprehensive existing/as-built models and simulations, parametrically-driven geometry and morphology feedback tools.
TACTICS: PERFORMANCE DESIGN (20%)
students will continue to consider and situate the flows of knowledge as created and manipulated in an effort to produce architecture, and how they can be further positioned with the aim of performance-design.
STRATEGIES: DESIGNED ECOLOGIES (20%)
students will consider and gain an awareness of design ecology as the framework with which we 'see' and as such understand performance design and parametrics as a means to reinforce a considered approach to architectural intervention that emphasizes open systems and flows of energy and information as the basic 'material' afforded to the architect.

Prerequisites: none

Textbooks/Learning Resources:
Berman, Marshal. *All That Is Solid Melts into Air: The Experience of Modernity*. New York: Penguin Books, 1982.
De Certeau, Michel. *The Practice of Every Day Life*. Berkeley: University of California Press, 1984.
Lost in Translation. Dir. Sofia Coppola. Perf. Bill Murray, Scarlett Johansson, Giovanni Ribisi. Universal Studios, 2003
New York: A Documentary Film, Dir Ric Burns. PBS,

Offered (semester and year): fall and spring annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Demetrios Comodromos

* This course replaces ARCH-6370.80 in fall 2015.

ARCH-6610.80: Graduate Architecture Design 3* (5 credits) (CASE)

Course Description: This semester seeks to resolve the realities of design actualization and technological research using a single, speculative project to produce both knowledge and architecture.

Course Goals and Objectives:
Each student will develop ways to approach with equal measure issues of site, environment, context, history, concept, structure, materials, systems, and geometry in order to provoke a tangible and persuasive architecture that:
1. Advances their insights and thesis in response to the program brief
2. Furthers ecological and parametric approaches to the building and thinking of architecture and design
3. Produces architectural knowledge and expands possibility through the act of integration, and ecological thinking
Students will develop a capacity to design at various scales of material realization and assembly in support and development of conceptual intentions/ideas while integrating building, environmental, and programmatic systems and addressing regulatory and technical requirements. Students are expected to iteratively address multiple design considerations and in doing so to develop their awareness and understanding regarding how:
1. One scale informs/impacts another,
2. Criteria established by considerations of environmental building performance inform and positively affect morphology, structure, envelope and the planning and design of buildings
3. Disciplines affecting architectural design (structural, mechanical, acoustic, lighting, etc...) cannot be seen as exclusive, isolated, or compartmentalized practices, and to develop the capacity to integrate that understanding early into the design process.

Student Performance Criterion/a addressed (list number and title): A.2: Design Thinking Skills, A.3: Investigative Skills, A.4: Architectural Design Skills, A.5: Ordering Systems, B.1: Pre-Design, C.2: Integrated Evaluations & Decision-Making Design Process, C.3: Integrative Design

Topical Outline:
The 17th Century Salon as program and ground for speculation and the projection of living information and social interaction will be the focus of the studio's attention and the testing bed of our methodology this semester. In particular, the studio will reconsider the existing space of the current faculty office and conference area at CASE, a 450 ft2 space that operates as both the front door and main gathering area for the center. The question we will ask is how the reconsideration of the surfaces that define the room and their constituent and internal modularity and makeup can participate in the making of the room as CASE's Salon—a place of interaction, projection, and performance.
The project will move through issues of existing condition analysis (10%), programming and conceptualization (20%), material design and processing(30%), prototyping (20%), installation (15%), gathering and processing of data (5%)all in the context of reconsidering the actual architecture of the room, and its transformation into the CASE Salon.

Prerequisites: ARCH-5210

Course Text: Koolhaas, Rem. *Delirious New York: A Retroactive Manifesto for Manhattan*,. New York: Monacelli Press, 1994.

Offered (semester and year): fall semester annually (CASE)

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Demetrios Comodromos, Nancy Diniz, Josh Draper, Anna Dyson

* This course will replace ARCH-4360.8 in fall 2016.

ARCH-6810.81: Research Design Seminar (3 credits)

Course Description (limit 25 words): The principal objective of this introductory seminar is to provide students with the opportunity to learn the fundamentals of research design

Course Goals and Objectives: Students will gain understanding of the components of Research Design including: (1) identifying and selecting focused research problems/opportunities/ideas; (2) documenting the state of the art in the selected research area; (3) identifying the critical resources and settings to carry out the research; (4) designing the research program including strategies and tactics for carrying out the research. It is hoped that the knowledge gained in the RD Seminar will assist students in the development of their own individual thesis proposals.
Additionally, the students will be required to attend a series of guest lectures in areas of Research Protocols, Intellectual Property, Research Design Practice(s) and standards for various means of communicating research through multiple formats, such as design competition posters, conference posters, abstracts and thesis/dissertation formats.
The course will pay particular critical attention to the sensitive issues and grey areas that are created in conducting interdisciplinary graduate research that is oriented around the design studio, and by definition involves the innovation and invention of new ideas, methods, systems and products by multiple people and organizations.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area): N/A

Prerequisites: none

Textbooks/Learning Resources:
1. Graff, Gerald & Cathy Birkenstein, *They Say, I Say: The Moves That Matter in Academic Writing*. Chicago: University of Illinois, 2009.
2. Hacker, Diana & Sommers, Nancy. *A Pocket Style Manual*. Bedford/St. Martin's, 2011.
3. Loughery, John, ed. *The Eloquent Essay: An Anthology of Classic & Creative Nonfiction*.. 2000.
4. Rosen, Leonard J. *The Academic Writer's Handbook*, MLA Update Edition.. (2009).
5. Tufte, Edward, *The Visual Display of Quantitative Information*. Cheshire, CT: Graphics Press, 2001.
6.Tufte, Edward, *Envisioning Information*. Cheshire, CT: Graphics Press, 1990.
7. Tufte, Edward, *Visual Explanations: Images and Quantities, Evidence and Narrative*. Cheshire, CT: 8. Graphics Press, 1997.
8. The University of Maryland College Park ed. Engagements with Rhetoric: *A Path to Academic Writing.,* Pearson Custom Publishing, 2008.
9.Rensselaer Student Handbook, 2015 Edition.

Offered (semester and year): fall 2015

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Josh Draper

M. ARCH REQUIRED COURSES
2nd-YEAR SPRING SEMESTER

ARCH-4300: Design Development* (6 credits)

Course Description: A collaborative integrative technology-based design studio emphasizing materialization and making architectural design projects concerning program, environment,, structure, life-safety, building envelope, materials and integrated building systems.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. Evaluate, select creatively, and employ materials and construction means to realize an architectural project in support of well conceived and articulated design intentions.
2. Integrate program, life safety, structure, building envelope, materials, building systems and technologies into an architectural design including, but not limited to the International Building Code (IBC), (ADA), environmental awareness and response, enclosure, lighting and HVAC.
3. Produce and organize an effective set of technical drawings utilizing a combination of analog and digital two and three-dimensional tools.

Student Performance Criterion/a addressed: A.1: Professional Communication Skills, A.2: Design Thinking Skills, B.1: Pre-Design (focus on code and standards), B.3: Codes and Regulations, B.4: Technical Documentation, B.5: Structural Systems, B.9: Building Service Systems, C.2: Integrated Evaluations and Design-Making Decision Process, C.3: Integrative Design

Topical Outline (include percentage of time in course spent in each subject area):
Diagramming and Conceptual Framing – 1 week (10%)
Bulk and Mass – 1 week (10%)
Principles of Life Safety, Universal Access and Code Analysis – 1 week (10%)
Programming – 1 week (10%)
Structural Systems – 1 week (10%)
Energy, Environment and Comfort – 1 week (10%)
Building Envelope – 1 week (10%)
Site Design and Development – 1 week (10%)
Materials and Systems – 1 week (10%)
Professional Practice(s) and Building Visits (NYC) – 3 days (10%)
Building Information Modeling – Integrated throughout
Technical Documentation and Outline Specification – Integrated throughout
Integrative Evaluations and Decision Making – Integrated throughout
Integrative Design – Integrated throughout

Prerequisites: ARCH-4820, ARCH-4330, ARCH-4740; ARCH-4540 (ARCH-5380) is co-requisite

Textbooks/Learning Resources:
The Architect's Studio Companion, Edward Allen and Joseph Iano
The Fundamentals of Building Construction-Materials and Methods, Edward Allen
Façade Construction Manual, Birkhauser
The International Building Code / 2010; A course reader – see full syllabus

Offered (semester and year): Fall and Spring semesters annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit):
S'14: Lonn Combs, Alexander Pincus; F'14: Ted Krueger, Ashmal Aqtash, Lauren Thomsen (BIM); S'15:Mark Mistur, Erik Churchill, Lauren Thomsen (BIM): F'15: Mark Mistur, Erik Churchill, Lauren Thomsen (BIM); Michael Stein, P.E., and Will Laufs, P.E. (Bedford Engineering Professors)

* This studio will be taught for the last time in spring 2016. Afterwards, it is replaced by ARCH-6630 and taught in fall semester annually.

ARCH-4560: Materials and Enclosures* (2 credits)

Course Description: This course aims to synthesize building enclosures with the social, historical, and technical aspects of contemporary practice via in-depth explorations of applied and conceptual logics.

Course Goals + Objectives:
In addition to fostering a deep understanding of the meaning, materials and systems that are combined in complex ways to create the basis of enclosures, this class aims to:
1. Build a foundation of scientific knowledge in the use of materials and the detailing of enclosures.
2. Utilize a foundation of knowledge to explore new systems and innovative opportunities.
3. Develop documentation and representational techniques appropriate to the communication of complex enclosure systems.

Student Performance Criterion/a addressed (list number and title): B.7: Building Envelope Systems & Assemblies, B.8: Building Materials & Assemblies

Topical Outline (include percentage of time in course spent in each subject area):
1. The course begins with two surveys: the first situates enclosures in a Historical/Social Survey and the second in a Technical Survey of Enclosure types (20% combined),
2. The criteria for enclosure design is developed to define the material logic of wrapping enclosures (20%)
3. Layered Enclosures (20%)
4. Technical Operations + Altering (20%)
5. Design Synthesis (20%).

Prerequisites: ARCH-2510

Textbooks/Learning Resources:
Herzog, Thomas et.al., *Façade Construction Manual*, Basel: Birkhauser, 2004.

Offered (semester and year): spring semesters annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit):
Demetrios Comodromos, Ajmal Aqtash

* This course will become ARCH-5340 and be taught in fall beginning 2017.

ARCH-5360: Building Systems & Environment (4 credits)

Course Description: Design analysis and performance characteristics of building environmental systems, emphasizing heating, cooling, ventilation, and lighting systems, electrical systems, acoustics, water, waste, and drainage systems.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. develop systems that provides human comfort in buildings for specific climatic zones.
2. analyze the spatial requirements necessary for the building systems to support the various and unique programs that is encountered in modern buildings.
3. examine the requirements of a studio conceptual design project and develop a human comfort system appropriate to the program and climatic conditions while insuring that the architecture and engineering design are integrated and developed with sustainable principles.
4. Perform energy audits on buildings, calculate acoustical and lighting requirements for buildings

Student Performance Criterion/a addressed (list number and title): B.6: Environmental Systems, B.9: Building Service Systems, B.10: Financial Considerations

Topical Outline (include percentage of time in course spent in each subject area):
Thermal Comfort, 15%, Water, Waste, and Drainage, 25%, Lighting, 20%, Electrical Design and Distribution, 25%, Acoustics, 15%

Prerequisites: ARCH-5310

Textbooks/Learning Resources:
Allen, Edward, *The Architect's Studio Companion*
Lechner, Norbert, *Heating, Cooling, Lighting, Sustainable Design Methods for Architects*

Offered (semester and year): spring semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Oliver Homes

ARCH-5380: Professional Practice 1 (2 credits)

Course Description (limit 25 words): This course analyzes assemblies and occupancies of construction, building codes & regulations, sustainability, cost estimating, project management, legal responsibilities and professional conduct.

Course Goals and Objectives: ProPractice 1 explores how architects realize design projects—taking them from conception through development, documentation, and construction and the collateral efforts beyond pure design essential for successful projects. This requires investigation and proving understanding of/ability within legal, code/regulatory, professional, contractual, and stakeholder and marketplace environments, within which designs become buildings.

Student Performance Criterion/a addressed (list number and title): B.3: Codes & Regulations, B.4: Technical Documentation, D.1: Stakeholder Roles in Architecture, D.2: Project Management, D.4: Legal Responsibilities, D.5: Professional Conduct

Topical Outline (include percentage of time in course spent in each subject area)*:
1. Building Codes & Regulations & Technical Documentation – 50%
2. Sustainability Constructs in Professional Practice – 15%
3. Construction Cost Estimating – 20%
4. Professional Conduct, Legal Responsibilities and Project Management – 15%

*Items 1.-3. are intended to be comprehensively addressed, Item 4. fundamentals are intended to be introduced in ProPractice I; all correspond to the following categories: SPC B.3 - Codes and Regulations; SPC B.4 - Technical Documentation; SPC D.1 - Stakeholder Roles in Architecture; SPC D.2 - Project Management; SPC D.4 - Legal Responsibilities; SPC D.5 - Professional Conduct

Prerequisites: ARCH-4540 and ARCH-5380 are co-requisites for ARCH-4300 [which will become ARCH-6630]*

Textbooks/Learning Resources:
Required:
Building Codes Illustrated, Fourth Edition, A Guide to Understanding the International Building Code, by Ching and Winkel;
Access to:
current online version of the *2010 International Building Code for New York State*
Library reference:
1. *The Architect's Studio Companion*, by Allen and Iano
2. *Architectural Building Codes*, by James G. Scott
3. *Construction Materials; Types, Uses and Applications*, by Caleb Hornbostel

Offered (semester and year): fall and spring semesters annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Stephen F. Reilly

* ARCH-4300 and its relevant content will become ARCH-6630 beginning in fall 2016. ARCH-5380 is co-listed with ARCH-4540.

ARCH-6620: Graduate Architecture Design 4 (5 credits)

Course Description: This design-based studio focuses on integrating structural, technical, detail, zoning, and code-related issues with respect to a moderate to large-scale building of civic importance.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. demonstrate competence in developing a complex architectural program.
2. demonstrate an ability to design in response to site conditions, climate, and urban context
3. produce an integrated and effective presentation of verbal, graphic and modeling materials
4. produce a schematic solution to a building type integrating responses to physical, cultural, and regulatory considerations.

Student Performance Criterion/a addressed: A.2: Design Thinking Skills, A.3: Investigative Skills, A.4: Architectural Design Skills, A.5: Ordering Systems, A.6: Use of Precedents, B.1: Pre-Design, B.2: Site Design, B.3: Codes & Regulations**,**
C.2: Integrated Evaluations & Decision-Making Design Process, C.3: Integrative Design

Topical Outline:
Integrative Evaluations and Decision Making – Integrated throughout
Integrative Design – Integrated throughout
Project Notebook, background research - integrated throughout
Programming Document - distributed – 20%
Case Studies Building types – One week – 10%
Analysis of Context – One week – 10%
Massing in response to urban, site and climatic conditions – One week – 10%
Site Design – One Week – 10%
Accessibility and Egress Standards – One week – 10%

Prerequisites: ARCH-4360.8 or ARCH-6610.8

Textbooks/Learning Resources:
Architectural Graphic Standards, AIA
The Architect's Studio Companion, Edward Allen and Joseph Iano
Time-Saver Standards for Building Types, De Chiara and Callender

Offered (semester and year): fall semester annually beginning in fall 2016

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): N/A

* This course is co-listed with ARCH-4820 and will begin in spring 2016.

ARCH-6680: History, Theory, Criticism 3* (4 credits)

Course Description: This course combines ARCH-2130* and ARCH-4090 for M. Arch students. Thus, it seeks to achieve the goals of both those courses.

Course Goals and Objectives: Upon successful completion of this course the student will have improved his/her Critical Thinking and Representation Skills according to the NAAB Performance Criteria
FROM ARCH-2130, Students will be able to:
1. demonstrate an ability to discuss and critically compare and contrast the theoretical merits and their consequences of contemporary design practices.
2. identify and critique key aspects of contemporary architectural design projects and trends.
3. compare critically current design theories to previous theories and their design manifestations.
4. identify, discuss, and evaluate the thesis of a particular architectural project and/or its designer.
5. formulate in a rudimentary way and express their own perspective on the design and practice of architecture.
FROM ARCH-4090
1. The student will be able to observe and develop a preliminary analysis of an architectural artifact, synthesizing the observations of others, and constructing critical conclusions. He/she will understand how to investigate buildings in their larger physical, social, and professional contexts and be able to articulate the cultural and architectural knowledge embedded within them.
2. The student will be able to clearly, compellingly, and succinctly document and describe the visible and invisible aspect of an architectural case, graphically, in writing form and oral presentation – with respect to the affect its physical, spatial, and material form has on the experience of its users, the profession and society, as well as their influence(s) on it.
3. The student will be able to demonstrate a working knowledge of the use of citations and attributions in scholarly writing and presentations

Student Performance Criterion/a addressed (list number and title): none assigned to this course.

Topical Outline (include percentage of time in course spent in each subject area):
ARCH-2130: What is Critical?, 16.6%, Difference: Theories and History, 16.6%, Deterritorialization: Methods and Practice, 16.6%, The Imaginary: Form Making, 16.6%, Immanence: Programming, The Sensible; Materiality, 16.6%, The Digital, 16.6%
ARCH-4090: Research & Documentation (25%), Deconstruction & Analysis (35%), Complementary Research & Presentation Development (40%)

Prerequisites: ARCH-5110

Textbooks/Learning Resources: The instructor for ARCH-2130* will determine the most appropriate contemporary texts with each distinct iteration of the course.
FOR ARCH-4090:
1. Drawings, Images and Texts by the project's author(s), as published in monographs, dedicated publications and architects' own websites. Initial list provided by faculty
2. Literature and Text about the building by others (academic journals, professional and industry publications)
3. Selected Online Sources (approved by faculty)

Offered (semester and year): spring semester annually beginning in 2017

Faculty assigned (list all faculty assigned during the four semesters prior to the visit):
Gustavo Crembil, N/A

* ARCH-6680 is co-listed with ARCH-2130 & ARCH-4090. ARCH-2130 was last taught in fall 2014. It will resume in spring 2017 with the number ARCH-4150.

M. ARCH REQUIRED COURSES
3rd-YEAR FALL SEMESTER

ARCH-4140: Modernity in Culture and Architecture* (4 credits)

Course Description: Beginning with the Enlightenment, this course critically examines the phenomenon of modernity and its impact on architectural theory and production.

Course Goals and Objectives:
1. Students will have demonstrated ability—through comparing/contrasting—to analyze and differentiate between various approaches to buildings and urban spaces.
2. Students will be able to evaluate relationships between different intellectual perspectives and their relation to architectural debates.
3. Students will have demonstrated ability to apply their knowledge to discern the cultural characteristics of differing architectural events.
4. Students will have demonstrated ability to write about selected architectural phenomena (realized buildings, unrealized projects and urban spaces/places/realms) in their own words.
5. Students will have demonstrated capacity to discern and analyze basic principles entailed in relating architecture to other cultural phenomena.

Student Performance Criterion/a addressed (list number and title): none assigned to this course.

Topical Outline (include percentage of time in course spent in each subject area):
Origins of Modernity: 7.14%
An Ideal Society, through Architecture: 7.14%
Modernity as Industrialization: 7.14%
Modernity as the Metropolitan Environment: 7.14%
Architecture and City Design: 7.14%
New Architecture(s) : 7.14%
Modern Architecture & the Interwar Moment: 7.14%
Modernity, Again: 7.14%
Second Modernity: Fifties & Sixties: 7.14%
Leaving Modernism Behind: 7.14%
Crises of 2nd Modernity: Environment, Energy & Existence: 7.14%
Architecture (again) in the Spotlight: 7.14%
Parodox in (Contemporary) Architecture: 7.14%
Future Modernities: 7.14%

Prerequisites: ARCH-2120, ARCH-2130

Textbooks/Learning Resources:
Barry Bergdoll, *European Architecture 1750-1890*
Alan Colquhoun, *Modern Architecture*
Jane Jacobs, *The Death and Life of Great American Cities*
In addition to these texts, the instructor assigns a wide variety of readings throughout the semester.

Offered (semester and year): fall semester 2014, 2015

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Lydia Kallipoliti**.** Brendan Moran**,** Ralph Ghoche

* This course was be taught in its present form for the last time in fall 2015. It is being replaced by ARCH-4120 and -4130, Modernity in Culture, Civilization, and Architecture 1 and 2 both of which will be subsumed in ARCH-5100 & -5110 for the graduate students.

ARCH-5340: Materials and Enclosures* (2 credits)

Course Description: This course aims to synthesize building enclosures with the social, historical, and technical aspects of contemporary practice via in-depth explorations of applied and conceptual logics.

Course Goals + Objectives:
In addition to fostering a deep understanding of the meaning, materials and systems that are combined in complex ways to create the basis of enclosures, this class aims to:
1. Build a foundation of scientific knowledge in the use of materials and the detailing of enclosures.
2. Utilize a foundation of knowledge to explore new systems and innovative opportunities.
3. Develop documentation and representational techniques appropriate to the communication of complex enclosure systems.

Student Performance Criterion/a addressed (list number and title): B.7: Building Envelope Systems & Assemblies, B.8: Building Materials & Assemblies

Topical Outline (include percentage of time in course spent in each subject area):
1. The course begins with two surveys: the first situates enclosures in a Historical/Social Survey and the second in a Technical Survey of Enclosure types (20% combined),
2. The criteria for enclosure design is developed to define the material logic of wrapping enclosures (20%)
3. Layered Enclosures (20%)
4. Technical Operations + Altering (20%)
5. Design Synthesis (20%).

Prerequisites: ARCH-5300

Textbooks/Learning Resources:
Herzog, Thomas et.al.,*Façade Construction Manual*, Basel: Birkhauser, 2004.

Offered (semester and year): fall semesters annually beginning in fall 2017.

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Demetrios Comodromos, Ajmal Aqtash

* For graduate students, this course is co-listed with ARCH-4560 beginning in fall 2017.

ARCH-5380: Professional Practice 1 (2 credits)

Course Description (limit 25 words): This course analyzes assemblies and occupancies of construction, building codes & regulations, sustainability, cost estimating, project management, legal responsibilities and professional conduct.

Course Goals and Objectives: ProPractice 1 explores how architects realize design projects—taking them from conception through development, documentation, and construction and the collateral efforts beyond pure design essential for successful projects. This requires investigation and proving understanding of/ability within legal, code/regulatory, professional, contractual, and stakeholder and marketplace environments, within which designs become buildings.

Student Performance Criterion/a addressed (list number and title): B.3: Codes & Regulations, B.4: Technical Documentation, D.1: Stakeholder Roles in Architecture, D.2: Project Management, D.4: Legal Responsibilities, D.5: Professional Conduct

Topical Outline (include percentage of time in course spent in each subject area)*:
1. Building Codes & Regulations & Technical Documentation – 50%
2. Sustainability Constructs in Professional Practice – 15%
3. Construction Cost Estimating – 20%
4. Professional Conduct, Legal Responsibilities and Project Management – 15%
*Items 1.-3. are intended to be comprehensively addressed, Item 4. fundamentals are intended to be introduced in ProPractice I; all correspond to the following categories: SPC B.3 - Codes and Regulations; SPC B.4 - Technical Documentation; SPC D.1 - Stakeholder Roles in Architecture; SPC D.2 - Project Management; SPC D.4 - Legal Responsibilities; SPC D.5 - Professional Conduct

Prerequisites: ARCH-4540 and ARCH-5380 co-requisites for ARCH-4300 [which will become ARCH-6630]*

Textbooks/Learning Resources:
Required:
Building Codes Illustrated, Fourth Edition, A Guide to Understanding the International Building Code, by Ching and Winkel;
Access to:
current online version of the *2010 International Building Code for New York State*
Library reference:
1. *The Architect's Studio Companion*, by Allen and Iano
2. *Architectural Building Codes*, by James G. Scott
3. *Construction Materials; Types, Uses and Applications*, by Caleb Hornbostel

Offered (semester and year): fall and spring semesters annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Stephen F. Reilly

* ARCH-4300 and its relevant content will become ARCH-6630 beginning in fall 2016. ARCH-5380 is co-listed with ARCH-4540.

ARCH-6630: Graduate Architecture Design 5* (5 credits)

Course Description: A collaborative integrative technology-based design studio emphasizing materialization and making architectural design projects concerning program, environment,, structure, life-safety, building envelope, materials and integrated building systems.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. Evaluate, select creatively, and employ materials and construction means to realize an architectural project in support of well conceived and articulated design intentions.
2. Integrate program, life safety, structure, building envelope, materials, building systems and technologies into an architectural design including, but not limited to the International Building Code (IBC), (ADA), environmental awareness and response, enclosure, lighting and HVAC.
3. Produce and organize an effective set of technical drawings utilizing a combination of analog and digital two and three-dimensional tools.
4. Reflect on integrated evaluation and analysis in the decision making process.

Student Performance Criterion/a addressed: A.1: Professional Communication Skills, A.2: Design Thinking Skills, B.1: Pre-Design (focus on code and standards), B.3: Codes and Regulations, B.4: Technical Documentation, B.5: Structural Systems, B.9: Building Service Systems, C.2: Integrated Evaluations and Design-Making Decision Process, C.3: Integrative Design

Topical Outline (include percentage of time in course spent in each subject area):
Diagramming and Conceptual Framing – 1 week (10%)
Bulk and Mass – 1 week (10%)
Principles of Life Safety, Universal Access and Code Analysis – 1 week (10%)
Programming – 1 week (10%)
Structural Systems – 1 week (10%)
Energy, Environment and Comfort – 1 week (10%)
Building Envelope – 1 week (10%)
Site Design and Development – 1 week (10%)
Materials and Systems – 1 week (10%)
Professional Practice(s) and Building Visits (NYC) – 3 days (10%)
Building Information Modeling – Integrated throughout
Technical Documentation and Outline Specification – Integrated throughout
Integrative Evaluations and Decision Making – Integrated throughout
Integrative Design – Integrated throughout

Prerequisites: ARCH-6620, ARCH-5150, ARCH-5360; ARCH-5380 is co-requisite

Textbooks/Learning Resources:
The Architect's Studio Companion, Edward Allen and Joseph Iano
The Fundamentals of Building Construction-Materials and Methods, Edward Allen
Façade Construction Manual, Birkhauser
The International Building Code / 2010; A course reader – see full syllabus

Offered (semester and year): fall and spring semesters annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit):
S'14: Lonn Combs, Alexander Pincus; F'14: Ted Krueger, Ashmal Aqtash, Lauren Thomsen (BIM); S'15:Mark Mistur, Erik Churchill, Lauren Thomsen (BIM): F'15: Mark Mistur, Erik Churchill, Lauren Thomsen (BIM); Michael Stein, P.E., and Will Laufs, P.E. (Bedford Engineering Professors)

* Comparable to and replaces ARCH-4300, Design Development [6cr], the final iteration of which is to be in spring 2016. ARCH-6630 will be co-listed with ARCH-4830

ARCH-6750: Final Project Research Seminar* (3 credits)

Course Description: This course provides students with an understanding of the theoretical and applied research methodologies and practices used during the architectural design process.

Course Goals and Objectives:
Students who successfully complete this course will be able to:
1. demonstrate the capacity to obtain and evaluate content from readings on a variety of topics related to architectural history, theory, and design.
2. demonstrate effective research skills, including the ability to explore sources of knowledge external to the discipline of architecture.
3. demonstrate a working knowledge of the use of citations and attributions in scholarly writing and presentations.
4. demonstrate analytic ability through writing and diagramming.
5. demonstrate an ability to communicate arguments in lucid written prose.

Student Performance Criterion/a addressed (list number and title): C.1: Research

Topical Outline (include percentage of time in course spent in each subject area):
Readings: 35%
Topic/Formal Research: 45%
Final Presentation and Documentation of Topic/Formal Research: 20%

Prerequisites: ARCH-6620

Textbooks/Learning Resources: no textbooks. Readings will vary per individual seminar section / individual instructor.

Offered (semester and year): fall semesters annually beginning in 2016

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): N/A

*This course will first be offered in fall 2016 and will replace the current ARCH-6981. This course will be co-listed with ARCH-4910.

ARCH-6980: Master's Project (fall semester)* (5 credits)

Course Description: This course enables third-year graduate students in the M. Arch program to develop a semi-independent design research project over the course of two consecutive semesters.

Course Goals and Objectives: Students who successfully complete this course will be able to: 1. demonstrate the ability to independently propose, refine, and develop a comprehensive design project.
2. demonstrate the capacity to engage in both research and design work in such a way that each are beneficial to the other.
3. demonstrate knowledge and mastery of the various issues, problems, and themes that inform the design project.
4. demonstrate analytic ability through writing, diagramming, and drawing.
5. demonstrate creative ability in the design and development of the project as well as a capacity to document and present their work in a clear and effective way.
6. demonstrate an ability to communicate arguments in lucid written prose.
7. demonstrate a working knowledge of the use of citations and attributions in scholarly writing and presentations.
8. demonstrate effective research skills, including the ability to explore sources of knowledge external to the discipline of architecture.

Student Performance Criterion/a addressed (list number and title): none assigned to this course

Topical Outline (include percentage of time in course spent in each subject area):
Topic Research: 20% Material / Formal Research: 20%
Site Analysis: 30%
Schematic Design: 30%

Prerequisites: ARCH-4300

Textbooks/Learning Resources: No textbooks. Readings vary per individual studio section.
Offered (semester and year): fall semester annually*

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Gustavo Crembil, Brian DeLuna, Carla Leitao, Ted Ngai, Stefano Passeri,, Chris Perry

*This course is currently co-listed with ARCH-4980 but will be replaced in fall 2016 by ARCH-6630.

ARCH-6981: Methods Seminar* (1 credit)

Course Description: This course provides students with an understanding of the theoretical and applied research methodologies and practices used during the architectural design process.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. demonstrate the capacity to obtain and evaluate content from readings on a variety of topics related to architectural history, theory, and design.
2. demonstrate effective research skills, including the ability to explore sources of knowledge external to the discipline of architecture.
3. demonstrate a working knowledge of the use of citations and attributions in scholarly writing and presentations.
4. demonstrate analytic ability through writing and diagramming.
5. demonstrate an ability to communicate arguments in lucid written prose.

Student Performance Criterion/a addressed (list number and title): C.1: Research

Topical Outline (include percentage of time in course spent in each subject area):
Readings: 50%
Case Study(s) Analysis: 25%
Writing Assignment: 25%

Prerequisites: ARCH-4300, ARCH-6980 co-requisite.

Textbooks/Learning Resources: No textbooks. Assigned readings vary per year but have included the following:
Denise Scott Brown, "On Formal Analysis as Design Research," *JAE* 32:4 Search/Research (May, 1979): 8-11.
Case Studies 1: Architectural "Theses" 1940-1978
Harvard's GSD; Mies at IIT; Robert Venturi & Charles Moore at Princeton; Archigram/London County Council Architects' Department; Wachsmann's Universal Jig; Superstudio's Continuous Monument; Koolhaas' "Exodus"; Libeskind's *Micromegas*.
Stanford Anderson, "Architectural Design as a System of Research Programs," *Design Studies* 5:3 (July 1984): 146-150.
Case Studies 2: Design "Theses" 1978-Present
Tschumi's *The Manhattan Transcripts*; Daniel Libeskind, Chamber Works; Parc de la Villette (Tschumi, Koolhaas, et al.); Diller Scofidio, Blur Building.
K. Michael Hays, *Architecture |Theory| since 1968* (Cambridge: MIT Press, 1997), project selection: No-Stop City, 56-59; Wall House, 86-87; Neue Staatsgalerie, Stuttgart, 318-19; Gehry House, Santa Monica CA, 378-81; *The Manhattan Transcripts*, 408-11; Chamber Works, 476-79; Moving Arrows, Eros and Other Errors, 582-85; Bibliotheque de France, Paris, 704-07.
Stephen Kieran, "Research in Design: Planning Doing Monitoring Learning," *JAE* (September 2007): 27-31.
Jeremy Till, "What is Architectural Research? Three Myths and One Model," *RIBA* R+D paper, 2004

Offered (semester and year): fall semester annually*

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Brendan Moran, Chris Perry, Lydia Xynogala,

* This course is co-listed with ARCH-4910. This course will be taught for the final time in fall 2015 and will be replaced with ARCH-6750 in fall 2016.

M. ARCH REQUIRED COURSES
3rd-YEAR SPRING SEMESTER

ARCH-5390: Professional Practice 2* (2 credits)

Course Description: This course includes practice topics required by: NAAB, Architectural Practice /Registration, Contracts, Collaboration, Ethics, Project Delivery, Architect's Construction Role, Business Practices, Construction Scheduling and Costs

Course Goals and Objectives: Students who have completed this course successfully will be able to:
1. demonstrate a knowledge of the responsibilities of the architect to elicit, understand and reconcile the needs of the Client, Owner, User Groups and the public and community domains.
2. demonstrate a knowledge of the methods for competing for commissions, selecting consultants, assembling teams and recommending contractual project delivery methods.
3. demonstrate the ability to work effectively in teams through successful completion of class projects.
4. apply knowledge of the architects' responsibility to the public and the client as determined by registration law, professional service contracts to specific situations.

Student Performance Criterion/a addressed (list number and title):
B.10: Financial Considerations, D.1: Stakeholder Roles in Architecture, D.2: Project Management, D.3: Business Practices, D.4: Legal Responsibilities, D.5: Professional Conduct

Topical Outline (include percentage of time in course spent in each subject area):
1. Overview of the profession – 5%
2. Stakeholders roles in architecture –10%
3. Legal aspects of the profession – 10%
4. Project management – 15%
5. Ethics and Professional Conduct – 10%
6. Business Models – 5%
7. Business Practices – 10%
8. Architect's Role During Construction – 10%
9. Construction Scheduling and Financing – 5%
10. Marketing and Business Development – 10%
11. Project Delivery Methods – 5%
12. Alternative Careers in Architecture – 5%

Prerequisites: ARCH-5380

Textbooks/Learning Resources: Paul Segal, *Professional Practice, A Guide to Turning Designs into Buildings*

Offered (semester and year): fall semester annually

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Richard Peckham**,** John Pocorobba

*This graduate course is co-listed with ARCH-4550

ARCH-6948: Graduate Final Project* (5 credits)

Course Description: This course enables third-year graduate students in the M. Arch program to develop a semi-independent design research project over the course of two consecutive semesters.

Course Goals and Objectives:
Students who successfully complete this course will be able to:
1. demonstrate the ability to independently propose, refine, and develop a comprehensive design project.
2. demonstrate the capacity to engage in both research and design work in such a way that each are beneficial to the other.
3. demonstrate knowledge and mastery of the various issues, problems, and themes that inform the design project.
4. demonstrate analytic ability through writing, diagramming, and drawing.
5. demonstrate creative ability in the design and development of the project as well as a capacity to document and present their work in a clear and effective way.
6. demonstrate an ability to communicate arguments in lucid written prose.
7. demonstrate a working knowledge of the use of citations and attributions in scholarly writing and presentations.
8. demonstrate effective research skills, including the ability to explore sources of knowledge external to the discipline of architecture.

Student Performance Criterion/a addressed (list number and title): A.1: Professional Communication Skills, A.2: Design Thinking Skills, A.3: Investigative Skills, C.1: Research

Topical Outline (include percentage of time in course spent in each subject area):
Schematic Design Development: 40% Representation (physical models and prototypes): 25%
Representation (drawings, diagrams, and renderings): 25%
Book formatting and printing: 10%

Prerequisites: ARCH-6630

Textbooks/Learning Resources: No textbooks. Readings will vary per individual studio section.

Offered (semester and year): This course will be offered in the spring beginning in 2017

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): N/A

* This one-semester course replaces the two-semester Master's Project, ARCH-6980 and will be offered for the first time in spring 2017 and co-listed with ARCH-4920.

ARCH-6980: Master's Project* (spring semester) (6 credits)

Course Description: This course enables third-year graduate students in the M. Arch program to develop a semi-independent design research project over the course of two consecutive semesters.

Course Goals and Objectives: Students who successfully complete this course will be able to:
1. demonstrate the ability to independently propose, refine, and develop a comprehensive design project.
2. demonstrate the capacity to engage in both research and design work in such a way that each are beneficial to the other.
3. demonstrate knowledge and mastery of the various issues, problems, and themes that inform the design project.
4. demonstrate analytic ability through writing, diagramming, and drawing.
5. demonstrate creative ability in the design and development of the project as well as a capacity to document and present their work in a clear and effective way.
6. demonstrate an ability to communicate arguments in lucid written prose.
7. demonstrate a working knowledge of the use of citations and attributions in scholarly writing and presentations.
8. demonstrate effective research skills, including the ability to explore sources of knowledge external to the discipline of architecture.

Student Performance Criterion/a addressed (list number and title): A.1: Professional Communication Skills, A.2: Design Thinking Skills, A.3: Investigative Skills, C.1: Research

Topical Outline (include percentage of time in course spent in each subject area):
Topic Research: 20% Material / Formal Research: 20%
Site Analysis: 30%
Schematic Design: 30%

Prerequisites: ARCH-6980 (fall semester)

Textbooks/Learning Resources: no textbooks. Readings vary per individual studio section.

Offered (semester and year): spring semester annually*

Faculty assigned (list all faculty assigned during the four semesters prior to the visit): Gustavo Crembil, Brian DeLuna,Carla Leitao, Ted Ngai, Stefano Passeri, Chris Perry

* ARCH-4980 (fall & spring) is currently co-listed with ARCH-4980 & -4990 and will be replaced by ARCH-6948 in spring 2017 and co-listed with ARCH-4920.

Studio Culture Policy

RENSSELAER SCHOOL OF ARCHITECTURE

STUDIO CULTURE POLICY - (8.19.2015 / Revision)

Introduction

Studio-based learning is the center of architectural education at Rensselaer. It is where a broad range of insight concerning the synthesis of history/theory, design, technology and best building practices specific to the education of the architect, is acquired and rigorously tested from one semester to the next. Studios are also where the primary guiding principles concerning collaborative teamwork, and ethical conduct essential to the profession, are honed and practiced.

At Rensselaer, project-based design studios form the core of a majority of our undergraduate and graduate programs, providing a place of synthesis, where knowledge and skill sets from a constellation of required and elective 2-4 credit courses provide context for the creative enterprise of the studio. Research, analysis, interpretation and criticism represent the developmental phases that bring together as a holistic project, a larger commitment to the integration of cultural, design, and professional considerations.

Faculty/student ratios (typically 1:12) throughout the design studios are mindful of the significant importance of providing as much contact time as possible between the instructor and the students. This favorable ratio in support of the program's teaching / learning, results in a large numbers of one-on-one critiques, group discussions and public juries essential to a successful and meaningful studio setting.

Beyond the invaluable pedagogical contribution provided by the primary instructor associated with the studio, a community of internal and external educators and practitioners are invited on a continuous basis into the classroom as critics to provide a broad range of diverse perspectives essential to the ongoing development of the student projects. Strong communication skills are also promoted through the assessment of drawings, models, written text and public presentations as an invaluable attribute for the future success of any professional architect.

Studios provide the opportunity to capitalize on a variety of diverse learning modalities spanning: informal conversations, formal presentations, individual critiques, short- and long-term design exercises, and individual and collaborative research and design projects. Through a commitment to research as a critical inquiry, the 'craft of making' as an essential mode of discovery, a range of analog and digital techniques as a vital participatory platform, and iterative experimentation as an important strategy to expand the full range of design options available to a designer, the studios at Rensselaer are structured to promote critical thinkers, life-long learners and future leaders in the profession.

Studio Setting - Studios are furnished and equipped to promote teaching and learning between students and faculty at the scale of one-on-one critiques as well as group discussions. Sufficient space is allocated throughout the school for individual design research as well as specialized collaborative projects. The studio setting is interpreted as a broad and diverse nurturing community in support of open dialog, courteous manners, self-expression and peer-to-peer learning.

Safety – The health and safety of the student body represents a major priority for the faculty and administrative leadership in the School of Architecture. Only sanctioned materials that do not represent a health risk to the students are allowed to be used within the studio and/or school shop setting. There are also clear Safety Training policies and procedures associated with the use of materials and equipment in the school that are disseminated every year by the shop to the entire student body.

Note: Failure to comply with the school's strict safety codes may result in an administrative action.

The school has a small spray booth on the basement level of the Greene building to accommodate for the increase of models that require painting from one semester to the next. For access to larger spray booth facilities, students are encouraged to take their models to The Jonsson Engineering Center (JEC) in the School of Engineering. In addition, the Institute has provided a new outdoor space near the Greene Building where spraypainting may be done safely and without marring the buildings or grounds.

Disruptive Conduct - Excessive noise (due to the use of power tools, music and/or loud speaking) or conduct that results in unreasonable annoyance is inappropriate and should be avoided at all times. The studio should be upheld as a productive, supportive and respectful communal environment.

Studio Access + Late Night Safety Protocol – The Greene Building, within which the entire School of Architecture is located, is open 24 hours a day with card access. Doors are locked to the public on weekends and between 6pm and 8am. Persons without access cards should not be permitted entry and reporting any unfamiliar persons in the building should be done by contacting Public Safety at 518-276-6656. Returning home at night should be done in groups. Students who intend to go home alone after hours and would prefer an escort, are encouraged to call Public Safety as well; a service which is available at no cost.

Cleaning -– In order to maintain studios as effective, safe and clean workplaces, students should throw away all trash materials, food products, in the building's designated trash dispensers. Additionally, it is important to keep the floor unobstructed of student models and general rubbish in anticipation of nightly staff sweeping.

Collaborative work - Studio provides an ideal opportunity to learn in a collaborative setting. Faculty should provide ample opportunity for teamwork and collaborative learning. Diverse opinions, points of view and approaches are welcome and should be treated with utmost respect. A similar courtesy should be extended to every member and visitor in the studio.

Experimentation and Risk-Taking - Studios at Rensselaer provide an ideal setting in support of experimentation and risk-taking. Faculty and students are encouraged to pursue this creative stance as a means to promote true discovery and innovation. .

Multiple Modes of Learning – The culture of the school celebrates a broad range of pedagogical diversity, which in turn manifests in a multiplicity of different design techniques and material practices offered to the entire student body. Committed to the invaluable role of technology in the education of the architect, the multiple modes of learning include: analog techniques (i.e., manual drawing and model making), digital and fabrication technologies, and computation.

Time Management – The importance of assuming control over time management cannot be underestimated for students in the architecture program. The extraordinary amount of course work that requires continuous attention from one semester to the next, requires a high degree of curation on the part of every student in order to satisfy academic requirements and sustain a healthy life style.

Allocating the proper time for one's schoolwork, sleep and extra circular activities represents an ideal pathway for academic success, good health and personal growth. Students are encouraged to learn how to manage their time well in light of the complexities and demands of student life.

While the Dean approaches this important topic in great detail at the all-school meeting with all of the students and faculty present, as well as with his Dean's Student Advisory Council every semester, and this issue is also addressed by student mentors and faculty advisors, ultimately it is the responsibility of each student to prepare a responsible personal schedule that yields positive results.

Reviews - Students are expected to attend and participate in their design studio pin-ups and official reviews throughout the course of the semester. Interpreted as an invaluable teaching and learning opportunity, these public events represent an essential component of the education of an architect. Structured as supportive and insightful forums of intellectual and creative exchange, students are encouraged to visit studios throughout the program in favor of broadening their perspective of the discipline.

Assessment – Studio performance assessment is achieved through table critiques, group discussions and official mid-term and final juries. Grade evaluations are confidential and should be provided at both the mid-point and conclusion of the semester. Although there are official time milestones where evaluations are communicated to each member of the student body, students may request on an individual basis an evaluation of their progress at any time.

Archives - Student work produced in the School of Architecture at Rensselaer is considered the property of the Institute. This material may be uploaded on the school's website as well as exhibited and published for promotional purposes.

Students selected by their instructors every semester for potential inclusion in the all-school book, INFLUX, are responsible for arranging to have their models

photographed by the Publications Staff as well as uploading their digital files as per the submission requirements. Select models can be retained by the school without permission of the students, although arrangements under special circumstances can be made to return the models to the student author.

All students throughout the entire school are responsible for documenting their physical models for their portfolio as well as assuring that their digital files are properly backed up for future use. Establishing a comprehensive and high-quality archive of one's design work should be a priority of every student.

STUDIO POLICY

In support of a vibrant studio culture:

1. **Studio Workplace** - Each student registered for studio will be assigned an accessible studio workplace with a complement of studio furniture and access to the Institute network, computing infrastructure, peripheral devices and the internet.

   Status of Furniture - The School will insure that studio spaces and furnishings are comfortable, safe, clean, convenient, and well equipped.

2. **Faculty Support** - Studio faculty will offer guidance to their respective students on how to properly arrange the furniture with respect to educational priorities, general communication, easy-access, and life-safety issues. Students are also encouraged, to use the studio outside of scheduled class hours.

3. **Studio Syllabi + Course Expectations** - All studio syllabi and project descriptions will contain specific information regarding project requirements and due dates. Faculty should: a) establish reasonable time frames and expectations for the completion of design projects, b) carefully monitor progress and be willing to modify requirements and due dates in light of extenuating circumstances, and c) be conscious and respectful of demands on student time in relation to other courses and extra-circular activities.

4. **Faculty Advisement** - Studio faculty and students are expected to be in studio during scheduled contact hours and should use the studio for work during non-studio hours. Faculty must include contact information on all studio handouts and have a clearly stated policy regarding availability to meet with students outside of studio time either by having posted office hours, or by appointment.

5. **Studio Grading** - All studio syllabi must specifically state how student work will be assessed, i.e., by indicating both the criteria and the percentage value for each assigned component. At or near mid-semester, faculty should provide students

with an evaluation of their performance and progress to date. At that time, students in danger of receiving a grade of D or below (C or below for graduate students) should receive a warning letter, a copy of which is forwarded to the student's academic advisor. These grades should also be reported to the Institute's Early Warning System (EWS).

6. **Core Studio Coordination** – Each semester, architecture faculty teaching the same student cohort will review and coordinate studio and non-studio course content and due dates. The 1st and 2nd years are most amenable to such coordination.

7. **Grade Appeal** - The School of Architecture has a formal process for appealing grades that is applicable to every course and design studio. The details of this process are available to every student through the Student Services Administrator, Lecia O'Dell.

In establishing our policies on design studio culture, we fully support and endorse the AIAS values of optimism, respect, sharing, engagement, and innovation.

Offsite Program Questionnaires

CENTER for ARCHITECTURE SCIENCE and ECOLOGY
Branch Campuses Questionnaire

Name of Institution:		Rensselaer Polytechnic Institute
Title of Degree:		B. Arch, M. Arch
Name of Program Administrator:		Anna Dyson, Director
Name of Person Completing this Form:		Mark Mistur, Associate Dean
Location of Branch Campus, Additional Site, Teaching Site, Online learning, or Study Abroad Program:		Center for Architecture Science and Ecology [CASE] 14 Wall Street, New York, New York 10005 Co-located in the offices of SOM, NY
Distance from Main/Flagship Campus:		165 miles
Number of Courses from Curriculum Leading to a NAAB-Accredited Degree Offered at this site		5 required courses (2 offered in Troy) 3 electives (1 offered in Troy)
(List all courses: number, title, credits offered)		
Course Number	Credits offered	Course Title
Arch 6810.81	3	Research Design Seminar
Arch 6610.80	5	Graduate Architecture Design 3 (Studio)
Arch 6380.80	2	Environmental Parametrics
Arch 5150.01	3	Structures 2 * (via WebEx from Troy)
Arch 6320.01	3	Built Ecologies 1 * (via WebEx from Troy)
Arch 6962.80	3	Advanced Integrated Prototype Development (elective)
Arch 6310.80	3	Environmental History & Theory (elective)
Arch 6340.01	3	Material Systems & Prod. (elec)*(via WebEx from Troy)
Is attendance at the branch campus, additional site, teaching site, study abroad or online program required for completion of the NAAB-accredited degree program?		B.Arch – Attendance not Required M.Arch – Attendance Required
Who has administrative responsibility for the program at the branch campus?		Anna Dyson, Director
To whom does this individual report?		Evan Douglis, Dean
Where are financial decisions made?		School of Architecture, Dean's Office, Troy Campus
Who has responsibility for hiring faculty?		Evan Douglis, Dean
Who has responsibility for rank, tenure, and promotion of faculty at the branch campus?		Evan Douglis, Dean
Does the branch campus have its own curriculum committee?		No
Does the branch campus have its own admissions committee?		Not related to the B.Arch or M.Arch participants (B.Arch and M.Arch students attend one semester)
Does the branch campus have its own grievance committee?		No
Does the branch campus have its own resources for faculty research and scholarship?		Yes
Does the branch campus have its own AIAS or NOMAS chapter?		No
Does the branch campus maintain its own membership in ACSA?		No

Additional Comments:

The CENTER for ARCHITECTURE SCIENCE and ECOLOGY [CASE] is a Rensselaer Polytechnic Institute Center co-located at the offices of SOM, New York. The Center houses the Ph.D. and Masters of Science in Architectural Sciences Built Ecologies concentration and associated research enterprise. It is focused on the design and development of next generation sustainable building systems. It maintains a student population of approximately 15 PhD and MS students whose studies are partly carried out downstate and partly upstate at the Troy campus. Each fall the Center is host to the first year M.Arch class where studio and seminar courses focus on environmental sustainability and performance based integrated design methodologies and systems in the context of SOM's professional practice and a vibrant interdisciplinary research culture. Each spring select B.Arch students spend a semester of study at CASE in New York.

ROME CENTER - University of Arkansas, Rome, Italy
Branch Campuses Questionnaire

Name of Institution:		University of Arkansas – Rome Center
Title of Degree:		B. Arch
Name of Program Administrator:		Zbigniew Oksiuta (Program Director, RPI:F'15-rotating) Davide Vitale (Center Director, University of Arkansas) Francesco Bedeschi (Legal / Fiscal Represent. U. Ark.)
Name of Person Completing this Form:		Mark Mistur, Associate Dean
Location of Branch Campus, Additional Site, Teaching Site, Online learning, or Study Abroad Program:		Palazzo Taverna, Via di Monte Giordano 36 Rome, Italy 00186
Distance from Main/Flagship Campus:		4000 miles
Number of Courses from Curriculum Leading to a NAAB-Accredited Degree		5
(List all courses: number, title, credits offered) [insert additional rows as necessary]		
Course Number	Credits offered	Course Title
ARCH4964.50	2	Professional Elective
ARCH4966.50	4	Urban & Architectural History of Rome
ARCH4972.50	3	Art & Culture in Italy
ARCH4973.50	3	Historic Preservation (or 4975.50)
ARCH4975.50	3	Modern & Contemporary Rome (or 4973.50)
ARCH49XX.50	5	Arch Design Studio 5 or 6
Is attendance required for completion of the NAAB-accredited degree program?		B.Arch – Attendance not Required
Who has administrative responsibility for the program at the branch campus?		Francesco Bedeschi, Legal/Fiscal Representative) Zbigniew Oksiuta (Program Director, RPI:F'15, rotating) Davide Vitale (Center Director, University of Arkansas)
To whom does this individual report?		Francesco Bedeschi - Evan Douglis, Dean Zbigniew Oksiuta – Evan Douglis, Dean Davide Vitale – Peter MacKeith, Dean
Where are financial decisions made?		School of Architecture, Dean's Office, Troy Campus
Who has responsibility for hiring faculty?		Evan Douglis, Dean
Who has responsibility for rank, tenure, and promotion of faculty?		Davide Vitale – U. Ark Rome Center Faculty Evan Douglis, Dean – RPI Faculty
Does the branch campus have its own curriculum committee?		No
Does the branch campus have its own admissions committee?		No – participation is based on submission of a portfolio and academic performance through a selection committee process
Does the branch campus have its own grievance committee?		No
Does the branch campus have its own resources for faculty research and scholarship?		No
Does the branch campus have its own AIAS or NOMAS chapter?		No
Does the branch campus maintain its own membership in ACSA?		No

Additional Comments:

The Rome Center, administered by the University of Arkansas School of Architecture is host to their own students as well as programs and students from other NAAB accredited degree schools (Philadelphia, Auburn, Tennessee) as well as a variety of other programs including historic preservation and fashion. The Center has two full professors tenured by the University of Arkansas and several permanent and adjunct faculty hired by the Director. Schools participate in a variety of ways ranging from full reliance on the Rome Center and its faculty to deliver the program and content, to the role of host Institution. Rensselaer sends its own faculty member (rotating) who directs and is responsible for the program design, content and delivery. Teaching is supplemented by Jeffrey Blanchard, (Director of Cornell's Rome Center and Study Program) who teaches Urban and Architectural History of Rome, Professor Emilio del Gesso (U. Ark, tenured) who teaches Art and Culture in Italy, and adjuncts associated with the Center who teach the elective Preservation and Contemporary Architecture of Rome courses.

The program is prefaced by required completion of two levels of Italian language, and an intensive 10-day language and culture introductory course. Roughly 12-13 weeks are spent in residence in Rome with two to three weeks of regional travel accompanied by faculty experts.

India Studies Program - Center for Environmental Planning and Technology, Ahmedabad, India
Branch Campuses Questionnaire

Name of Institution:		Center for Environmental Planning & Technology
Title of Degree:		B. Arch.
Name of Program Administrator:		David Bell (Program Director, RPI) Anne Fenestra (Campus Director/ Dean, CEPT Univ.
Name of Person Completing this Form:		Mark Mistur, Associate Dean
Location of Branch Campus, Additional Site, Teaching Site, Online learning, or Study Abroad Program:		CEPT University, School of Architecture University Road Ahmedabad, Gujarat 380 009, India
Distance from Main/Flagship Campus:		7600 miles
Number of Courses from Curriculum Leading to a NAAB-Accredited Degree Offered at this site		5
(List all courses: number, title, credits offered)		
Course Number	Credits offered	Course Title
ARCH 4965.70	4	India Discovery
ARCH 4970.70	2	Architecture & the Urban Condition in India
ARCH 4974.70	2	The Culture and Civilization of India
ARCH 4976.70	2	Topics in Architecture
ARCH 46XX	5	Architecture Design Studio 4 or 5
Is attendance at the study abroad program required for completion of the NAAB-accredited degree program?		B.Arch – Attendance not Required
Who has administrative responsibility for the program at the branch campus?		David Bell, Program Director (rotating)
To whom does this individual report?		Evan Douglis, Dean
Where are financial decisions made?		School of Architecture, Dean's Office, Troy Campus
Who has responsibility for hiring faculty?		Evan Douglis, Dean – for RPI Director / faculty Anne Feenstra, Dean CEPT – for CEPT Faculty
Who has responsibility for rank, tenure, and promotion of faculty at the branch campus?		Evan Douglis, Dean - for RPI faculty Anne Feenstra, Dean - for CEPT faculty
Does the branch campus have its own curriculum committee?		Yes, however courses are determined in discussion between the RPI program director, RPI Dean and the Dean at CEPT
Does the branch campus have its own admissions committee?		No – participation is based on submission of a portfolio and academic performance through a selection committee process
Does the branch campus have its own grievance committee?		No
Does the branch campus have its own resources for faculty research and scholarship?		No
Does the branch campus have its own AIAS or NOMAS chapter?		No
Does the branch campus maintain its own membership in ACSA?		No

Additional Comments:

The India program at Rensselaer's School of Architecture is associated with CEPT University in Ahmedabad, India. Ahmedabad is a vibrant metropolis of 5 million inhabitants located in the northwestern part of India. It has a dry desert-like climate. Students in this program are immersed immediately in Indian culture while studying at CEPT University, which is one of the premier schools of architecture in India. It was founded in 1962 by Balkrishna Doshi, an internationally renowned architect, who at age 89 still maintains a thriving practice in Ahmedabad producing buildings and urban design of exceptional quality.

Rensselaer's School of Architecture has had a relationship with CEPT for more than twenty years. This relationship involves CEPT's acceptance of a small number of RPI students and one RPI faculty member in the spring semesters of odd-numbered years. In turn, RPI hosts a small group of CEPT students for a semester.

While the RPI group is in India, they take several extended field trips throughout India. Each trip encompasses about 7 – 10 days and altogether the travels account for about one month. These travels are effectively study travels as students have to keep a sketch diary as well as make written accounts of their experiences. India is a country of enormous diversity in terms of language, culture, and architecture. It has a rich and deep architectural history that has syncretized indigenous architectural practices with those of the Mughal conquerors and those that were part of the British Raj. With its independence, India was anxious to modernize and as a result has the most works by Le Corbusier of any country except France, Four of those buildings are in Ahmedabad as is Louis Kahn's India Institute of Management. Ahmedabad is composed of an old town on the eastern banks of the Sabarmati River; it is made up of intimate neighborhoods, or pols. In contrast, the newer city, is on the west bank and has essentially grown up in the last 60 – 70 years. Ahmedabad was, and still is to a lesser degree, known for its textile mills. One of the textile owners, Kasturbhai Lalbhai endowed CEPT University. Our students benefit from having critiques and reviews with India architects and CEPT faculty. Their projects are situated in Ahmedabad and focus on the making connections between exiting urban fabric, new urban fabric, and the unique condition of Ahmedabad along the Sabarmati riverfront.

India Studies Program – Tongji University: School of Architecture
Branch Campuses Questionnaire

Name of Institution:		Tongji University
Title of Degree:		B. Arch
Name of Program Administrator:		Gustavo Crembil, RPI Program Director (rotating) Tongji SoA Dean
Name of Person Completing this Form:		Mark Mistur, Associate Dean
Location of Branch Campus, Additional Site, Teaching Site, Online learning, or Study Abroad Program:		1239 Siping Road, Shanghai, P.R. China
Distance from Main/Flagship Campus:		7,250 miles
Number of Courses from Curriculum Leading to a NAAB-Accredited Degree Offered at this site		4
(List all courses: number, title, credits offered)		
Course Number	Credits offered	Course Title
ARCH 46XX.60	5	Architecture Design Studio 4 or 5
ARCH 4966.60	4	Chinese Architecture and Urbanism
ARCH 4974.60	4	Chinese Lang & Culture
ARCH 4975.60	4	Calligraphy Painting
Is attendance at the branch campus, additional site, teaching site, study abroad or online program required for completion of the NAAB-accredited degree program?		B.Arch – Attendance not Required
Who has administrative responsibility for the program at the branch campus?		Gustavo Crembil, RPI Program Director (rotating)
To whom does this individual report?		Evan Douglis, Dean
Where are financial decisions made?		School of Architecture, Dean's Office, Troy Campus
Who has responsibility for hiring faculty?		Evan Douglis, Dean – RPI Director / faculty Tongji SoA Dean – Tongji Faculty
Who has responsibility for rank, tenure, and promotion of faculty at the branch campus?		Evan Douglis, Dean – RPI Director / faculty Tongji SoA Dean – Tongji Faculty
Does the branch campus have its own curriculum committee?		Yes, however courses are determined in discussion between the RPI program director, RPI Dean and the Dean at Tongji University School of Architecture
Does the branch campus have its own admissions committee?		No – participation is based on submission of a portfolio and academic performance through a selection committee process
Does the branch campus have its own grievance committee?		No
Does the branch campus have its own resources for faculty research and scholarship?		Yes
Does the branch campus have its own AIAS or NOMAS chapter?		No
Does the branch campus maintain its own membership in ACSA?		No