Rensselaer Polytechnic Institute
School of Architecture

Visiting Team Report

Bachelor of Architecture
(168 undergraduate credit hours)

Master of Architecture
(degree in any field + 88 undergraduate credit hours plus 24 graduate credit hours)

The National Architectural Accrediting Board
24 March 2010

The National Architectural Accrediting Board (NAAB), established in 1940, is the sole agency authorized to accredit U.S. professional degree programs in architecture. Because most state registration boards in the United States require any applicant for licensure to have graduated from an NAAB-accredited program, obtaining such a degree is an essential aspect of preparing for the professional practice of architecture.
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I. Summary of Team Findings

1. Team Comments

The School of Architecture at Rensselaer Polytechnic Institute represents an amalgamation of technical innovation and creative collaboration. The widely renowned successes of the programs within the school are clearly the result of synergistic alignments between the office of the president and provost, the School of Architecture and the academic and professional communities. Newly appointed Dean Evan Dougis has hit the ground running to implement a comprehensive vision which will elevate the graduate architecture program and fortify plans to become an international center where technology and science integrate with design. Of particular note are the efforts to engage the campus community in dialogue through multiple activities, including the establishment of multi-media exhibition space, publications and diversification of the school’s lecture series.

The Lighting Research Center, EMPAC-related activities, exhibit of works made from recycled materials by first year students at the Albany Airport Gallery, CASE and research in acoustics are examples of the on-going commitment by the School of Architecture to showcase the integration and innovation of technology and science into design. The rigor and caliber of the study abroad programs in Italy, India and China reinforce the school’s commitment to international communities. In addition, the expansion and renovation of the fabrication lab has facilitated the production of large scale and well-crafted models and prototypes. The library and visual resource area and collections are easily accessed and centrally located within the school.

The NAAB team was impressed with the level of collaboration and cooperation between the School of Architecture’s administration, staff and students to exhibit their collection of work. The team room was exceedingly well organized and represented a thoughtful consideration for the review process. The faculty exhibit highlighted a notable array of research, publication and design activities. The efforts on behalf of the alumni and clinical and adjunct faculty to travel long-distances in order to participate in the accreditation process were impressive.

The cutting edge research and creative works generated by the faculty and students at the School of Architecture set it apart from other design institutions. Yet, ongoing issues regarding inclusion of accessibility standards, site conditions and local community criteria into design exercises pose ongoing concerns. Even more disturbing is the enduring challenge to improve faculty diversity. No progress has been made by the school in this area. It is, however, reassuring to see the degree to which the university administration acknowledges the previous NAAB findings. In addition, Dean Dougis is acutely aware of the diversity issues and has brought women and minority architects to the school as adjunct and clinical faculty and guest speakers. The team firmly believes that under the new leadership and vision of the dean and the unprecedented level of support by the administration, the concerns will be effectively addressed and remedied. As observed by the NAAB team, the coordinated efforts and diligence of the faculty, staff and students offer the promise that the school has the capacity to not only resolve these issues, but to raise the standards of the architecture profession and the approach to academic scholarship.

2. Progress Since the Previous Site Visit

Criterion 12.12, National and Regional Traditions (2004): Understanding of the national traditions and the local regional heritage in architecture, landscape, and urban design, including vernacular traditions
Previous Team Report (2004): While Course IHSS-1970, Design History and Society introduces this subject area to the undergraduate students at the level of awareness, it is not reinforced later in the required history-theory sequence and brought to a level of understanding. The graduate students are given even less exposure to this subject as IHSS-1970 is not a part of the M. Arch. I program. The graduate students, along with the undergraduates, are exposed to very limited coverage of this area in Arch-4140, Modernity in Culture and Architecture. The excellent six-course required sequence in the history-theory area and the expertise available in the Building Conservation program provide ample opportunity to address this deficiency.

RPI's position in Troy places unusually rich traditions and context at the school's disposal. A greater effort should be made to recognize the opportunities offered by these resources and to use them as a springboard for a greater discussion of national architectural history and character and of the possibilities of regionalism throughout the country.

2010 Visiting Team Assessment: The team found this criterion has been met. The team found evidence for meeting this criterion in Arch 4140, Modernity in Culture and Architecture. The course provides undergraduate and graduate students with the materials to understand and interpret national traditions and local regional heritage in architecture, landscape design and urban design. Although the team finds that the criterion has been met, the team is disappointed that the school did not respond to the previous team’s recommendation to acknowledge "RPI’s position in Troy…". It is hoped that with the school’s new leadership, the school will be responsive to the local community and the opportunities it represents.

Criterion 12.14, Accessibility (2004): Ability to design both site and building to accommodate individuals with varying physical abilities

Previous Team Report (2004): The team concluded that this criterion is not met. Although there are examples in several studios of work showing that some students had wrestled with issues of accessibility, the end results showed a clear lack of ability in this area. Accessibility issues may be taught on several fronts, but the leap to learning and ability is not being made. Accessibility, when it does appear in student work, appears to be an overlay activity and not the result of an integrated effort.

2010 Visiting Team Assessment: The team once again believes that this criterion has not been met. The course manuals indicate code awareness; however, the projects do not clearly demonstrate an ability to design for accessibility. Projects lack identification of handicapped parking and curb cuts. Some flat sites might be able to be worked out to be accessible, but sites on sloping surfaces have not been studied and resolved. Some door and egress issues are not resolved. Areas of refuge in stairwells are non-existent in the majority of the design projects.

Criterion 12.30, Program Preparation (2004): Ability to assemble a comprehensive program for an architecture project, including an assessment of client and user needs, a critical review of appropriate precedents, an inventory of space and equipment requirements, an analysis of site conditions, a review of the relevant laws and standards and an assessment of their implications for the project, and a definition of site selection and design assessment criteria

Previous Team Report (2004): While there has been progress since the last visit, particularly in the incorporation of some discussion and analysis of programming in Arch. Design 2 and 3, the team finds that there is still insufficient evidence of the students’ ability to research, analyze, and develop comprehensive programs for architectural design projects. Those examples of
programming effort that the team examined in studio work evidenced an understanding of only a small portion of the spectrum of the knowledge and skills that constitute the area of programming.

Because most undergraduate final projects and graduate program theses are either of a theoretical nature or contend with planning or societal issues, rather than specific building projects for which a thorough programming effort would be a prerequisite, this criterion is not met in the students' final work, as it might be in a different type of program. Rather than reexamining the content of final student work, the School of Architecture should make a more concerted effort to establish a comprehensive effort to develop this ability in each student earlier in the curricula. The standard of “ability” is not likely to be achieved if the only exposure is to students at the earliest stages of professional education, before a full understanding of the interrelationship of design issues and human factors can be developed.

2010 Visiting Team Assessment: The team concluded that this criterion was well met. The materials produced by the students demonstrate a thorough process for program preparation. Student work in this area was extensive, clear, organized and complete. The programs were graphically strong and included appropriate citations of sources. Specifically, the criterion is addressed in the undergraduate and graduate curriculum first at a smaller scale with a simple house project in the Architectural Design 2 studio (taught in conjunction with Graduate Architecture Design 2) and later at a larger scale with the design of an infrastructural facility in the Architectural Design 3 studio (taught in conjunction with the Graduate Design 3 studio). In both studios, programming is considered comprehensively. The work verified an insightful and critical assessment of the qualitative (site conditions, client and user needs, and the derivative patterns, conditions, and precedents germane to a particular building type) and quantitative (space and equipment requirements, and relevant standards and codes) implications for the building project. Lastly, the Design Development course presented in-depth assessments of the building program in relationship to design intention within a comprehensive project.

Causes of Concem taken from VTR dated February 25, 2004:

4 Social Equity

The team registers a serious concern regarding diversity issues with respect to faculty hiring and student recruitment.

RPI'S strategic plan identifies improved diversity of the faculty and student body as a top priority. The new position of vice provost for diversity has been created, and financial underwriting for salaries has been set aside to assist with this effort. Diversity in intellectual position, geographic location, gender, and cultural/ethnic background are the metrics for diversity in the Rensselaer Plan.

Although more progress needs to be made in all areas, those requiring the greatest attention are of gender and cultural/ethnic diversity among the faculty.

Meeting diversity objectives remains more an ambition than a reality in the School of Architecture. The last report highlighted diversity as an area needing attention. Since the Spring 1999 visit, the school has filled six tenure and tenure-track searches with men (as noted in Section F of the 2003 APR), and there are only two women among 17 tenured and tenure-track faculty. With four searches underway, and more in the near future, every effort should be made to enrich the faculty members search process (e.g., using search firms, ambitious person-to-person recruitment plans, and searches of venues of scholarly production) to seek out women, minority candidates, and those of diverse ethnic
backgrounds. Moreover, a climate of hospitality and mentoring of women and minority faculty needs to be engendered and maintained. Perhaps, most importantly, the School of Architecture must look on this challenge as an opportunity for growth and development of the faculty as well as the enrichment of the life of the school as a whole.

RPI has taken the lead on student recruitment on an institutional-wide front. However, the School of Architecture should support this effort by working toward additional means to identify, recruit, and retain students from underrepresented minority groups.

2010 Visiting Team Assessment: This criterion has been met, yet again, with concern. Although student demographics and retention have improved at an impressive rate—the issue of diversity in the area of full-time faculty remains a chronic concern. The 2009 APR offered minimal consolation as to why the issue of faculty hiring and promotion were not at the forefront of the school’s ambitious goals. In addition, two of the full-time female faculty members have research responsibilities which require them to be off-campus and in one case—several hours away in New York City. Under these conditions, there is little to no opportunity for mentorship of students and junior faculty by senior level women and minority faculty. Junior faculty members seemed unsure as to the degree in which they should focus on professional responsibilities versus research agenda. Some of the faculty voiced concerns that the tenure and promotion process was unclear and inconsistent. Adjunct and clinical faculty and instructors expressed similar apprehensions that the hiring and re-appointment or promotion processes were unclear.

The president and provost have reasserted their commitment and financial backing to bring more women and minority faculty members to the school. Although the depressed economy has impacted the RPI budget, the four vacant faculty positions in the School of Architecture remain secure. Dean Evan Douglass was aware of the faculty hiring issues and in the short time he was with the school, he filled adjunct and clinical positions with women and minority architects. He also increased the number of women and minorities speakers for the school’s lecture series. The actions on behalf of the campus administration and Dean Douglass reassure the team that RPI takes the issue of social equity within the School of Architecture seriously. The administration is also cognizant that previous methods of hiring and retention have not been effective and is ready to consider more pro-active means of bringing women and minorities to the campus.

In spite of the lack of full-time faculty diversity and challenges surrounding tenure and promotion, the School of Architecture faculty members are outwardly supportive of one another. The level of collegiality is impressive. Even with overloads in teaching and service assignments, faculty members display an exceedingly high level of collaboration within the school as well as with faculty from other academic disciplines. There is an admirable degree of appreciation for diversity of thought and cultural contributions. Hence, the issue of social equity at this point in the accreditation process is less a matter of "a climate of hospitality," but a matter of timing, alignment and lack of creative measures towards resolving the issues of full-time and senior faculty diversity and mentorship.

9 Financial Resources

There is sufficient funding to support the accredited programs of the school (80 percent of the student complement). Resources were made available to upgrade facilities to enhance building accessibility, including an elevator and a second exit stair, but there are yet some additional accessibility elements that need to be improved. While RPI’s budget has grown as a result of various initiatives, the Education and General (E&G) budget has been under stress; allocations to the school have been flat or slightly declining, at a greater rate than that.
for the reductions due to centralization of certain activities and costs (e.g., facilities and admissions). The evolving paradigm to a research and practice-centered mission and the newly approved Ph.D. in architectural sciences have a concomitant requisite for greater financial support for faculty start-up and additional funding to enable reduced teaching loads to foster unfunded and funded scholarship.

In addition, the School of Architecture may be facing potentially greater space needs, particularly as the research programs grow—requiring central capital support beyond what grants are likely to provide. Although the time has not yet been identified when increased space will be needed, the development of a plan to address this likelihood would be well advised.

In summary, there is sufficient funding to support the accredited programs of the School of Architecture. These resources need to be maintained while increasing the research productivity of the School, allowing for continued improvement of building accessibility and planning for the space needs of the future.

2010 Visiting Team Assessment: The team finds that there are sufficient financial resources to support the accredited professional programs within the school. Paralleling the university and global economic situations, the School of Architecture has undergone budget reductions and restrictions. While recognizing the challenges of budget restrictions, the team also understands the value of investment. In order to build the graduate program and to advance the reputation of the School of Architecture at Rensselaer as envisioned by the administration and others, it is important to continue to support activities which promote outreach efforts. This includes the continued financial support by the administration for lecture series, exhibitions, publications and recruiting materials.

3. Conditions Well Met

13.4 Research Skills
13.7 Collaborative Skills
13.11 Use of Precedents
13.16 Program Preparation
13.18 Structural Systems
13.19 Environmental Systems
13.21 Building Envelope Systems
13.26 Technical Documentation

4. Conditions Not Met

3.12 Professional Degrees and Curriculum
13.14 Accessibility (also not met in 2004)
13.17 Site Conditions

5. Causes of Concern

3.4 Social Equity (also a concern in 2004)
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. See response above and in the VTR).
7.0 Human Resource Development

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.
II. Compliance with the Conditions for Accreditation

1. Program Response to the NAAB Perspectives

Schools must respond to the interests of the collateral organizations that make up the NAAB as set forth by this edition of the NAAB Conditions for Accreditation. Each school is expected to address these interests consistent with its scholastic identity and mission.

NOTE: The 2010 team has combined responses to the criterion for the B.Arch and M.Arch programs since students for both degrees in most cases enroll in the same courses. There are two conditions which deviate from this pattern: 1) Condition 1.2 Architecture Education and Students; and, 2) Condition 12. Professional Degrees and Curriculum.

1.1 Architecture Education and the Academic Context

The accredited degree program must demonstrate that it benefits from and contributes to its institution. In the APR, the accredited degree program may explain its academic and professional standards for faculty and students; its interaction with other programs in the institution; the contribution of the students, faculty, and administrators to the governance and the intellectual and social lives of the institution; and the contribution of the institution to the accredited degree program in terms of intellectual resources and personnel.

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This condition has been met. The School of Architecture and the larger university community have an active and supportive relationship. The school’s new dean, Evan Douglis, envisions professional programs which embrace increased rigor, a passion for learning, and a global vision of preparing some of finest graduates for the 21st century. To achieve this goal, the school recognizes the necessity, along with opportunities, for interdisciplinary collaboration. RPI is rich in the sciences and engineering and has focused initiatives within the institution which include the arts and sustainability. As part of this dynamic partnership, the School of Architecture is well positioned to achieve its vision. The president, Shirley Ann Jackson, and the provost, Robert Palazzo, have expressed strong support for the school’s vision and the potential for collaboration across the university and beyond. In fact, the school has expanded its “campus” to include partnerships with the profession in New York City and academic institutions in Rome, India and China.

The team found centers of research, public exhibitions and the lecture series to be vital components in helping to make the School of Architecture at Rensselaer Polytechnic Institute relevant within the larger academic community. We believe the school has an exciting future ahead which offers many opportunities to achieve the school’s lofty vision.

1.2 Architecture Education and Students

The accredited degree program must demonstrate that it provides support and encouragement for students to assume leadership roles in school and later in the profession and that it provides an environment that embraces cultural differences. Given the program’s mission, the APR may explain how students participate in setting their individual and collective learning agendas; how they are encouraged to cooperate with, assist, share decision making with, and respect students who may be different from
themselves; their access to the information needed to shape their future; their exposure to the national and international context of practice and the work of the allied design disciplines; and how students' diversity, distinctiveness, self-worth, and dignity are nurtured.

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This condition has been met. The faculty and administration take an active role in supporting and encouraging the students in their architectural education. Students are pushed to develop critical thinking skills. The students are given the opportunity to take on leadership roles within the School of Architecture through active participation in the Dean's Student Advisory Council and student organizations. Students have a variety of opportunities to choose different areas of study that appeal to their individual interests. An independent final project or master's thesis provides the students with the option of making choices that help them in the development of their own interest. Many of the students have been able to work towards a minor in an area outside of the architecture program. The collaboration between the students on their projects and research strengthens the program and better prepares them for the profession.

There is a concern from M. Arch students and the NAAB team that there is a lack of studio culture within the graduate program. The students of the graduate program have expressed a lack of distinctiveness that sets them apart from the undergraduate program. While they readily acknowledge positive exchange they share with their undergraduate colleagues, they clearly noted the need for more autonomy as a group and additional opportunities that celebrate and respond to their unique educational and social backgrounds and needs. Graduate M. Arch students have also asked to have a meeting area which is separate from the PhD students.

1.3 Architecture Education and Registration

The accredited degree program must demonstrate that it provides students with a sound preparation for the transition to internship and licensure. The school may choose to explain in the APR the accredited degree program's relationship with the state registration boards, the exposure of students to internship requirements including knowledge of the national Intern Development Program (IDP) and continuing education beyond graduation, the students' understanding of their responsibility for professional conduct, and the proportion of graduates who have sought and achieved licensure since the previous visit.

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This condition has been met. The School of Architecture has a good reputation of preparing graduates to become licensed architects. It starts with lectures explaining the Intern Development Program, and by the fourth year enrolling students in IDP. The students were well aware of the internship process with many students already enrolled in IDP.

The School of Architecture is ranked sixth among the 117 NAAB accredited schools in success rates for RPI graduates who took the Architectural Registration Exam (ARE). The professional practice course and the design development studio do a great job in helping students prepare for the profession of architecture.
1.4 Architecture Education and the Profession

The accredited degree program must demonstrate how it prepares students to practice and assume new roles and responsibilities in a context of increasing cultural diversity, changing client and regulatory demands, and an expanding knowledge base. Given the program’s particular mission, the APR may include an explanation of how the accredited degree program is engaged with the professional community in the life of the school: how students gain an awareness of the need to advance their knowledge of architecture through a lifetime of practice and research; how they develop an appreciation of the diverse and collaborative roles assumed by architects in practice; how they develop an understanding of and respect for the roles and responsibilities of the associated disciplines; how they learn to reconcile the conflicts between architects’ obligations to their clients and the public and the demands of the creative enterprise; and how students acquire the ethics for upholding the integrity of the profession.

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This condition has been met. The school’s mission statement clearly states that they are “seeking to prepare students for practice in the 21st century.” The evolving professional practice for the 21st century will force firms to change much about the way they conceive, develop, and produce architecture. The team found that both the undergraduate and the graduate programs are well positioned to meet these needs.

The Center for Architecture, Science and Ecologies (CASE) a joint research endeavor by the School of Architecture and the renowned architectural firm of SOM is a great example of a prototype model of this partnership. The school’s robust Lighting Resource Center (LRC) and advanced acoustical research programs provide resources not only to the School but to many advanced professional architectural practices. The school recognizes the advantage of Rensselaer’s larger scientific and engineering community. Programs like the Bedford Initiative which join engineering students and faculty with students and faculty of the School in interdisciplinary seminars and studios demonstrate this collaborative environment. The passion of both the graduate and undergraduate students to acquire and apply advanced knowledge is broadly evident in their work.

While the school’s desire to advance research is palpable, not all students will find themselves in the limited and advanced research practices associated with the school. If the school wants to help lead the entire profession—evidence of stronger bridges to the AIA and the broader base of professional practice are needed. Because the school benefits from the engagement of some of the profession’s advanced interest and funding for research, the school might consider enhancing its solidarity with the profession by having more of its faculty and administrative leaders commit to becoming licensed professionals and members of the AIA.

1.5 Architecture Education and Society

The program must demonstrate that it equips students with an informed understanding of social and environmental problems and develops their capacity to address these problems with sound architecture and urban design decisions. In the APR, the accredited degree program may cover such issues as how students gain an understanding of architecture as a social art, including the complex processes carried out by the multiple stakeholders who shape built environments; the emphasis given to generating the knowledge that can mitigate social and environmental problems; how students gain an understanding of the ethical implications of decisions involving the built
environment; and how a climate of civic engagement is nurtured, including a commitment to professional and public services.

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This condition has been met. The School of Architecture's view of the relationship between architectural education and society is undeniably shaped by Rensselaer's rich institutional values of global awareness and technological innovation. This viewpoint emphasizes the relevancy and value of architectural design as both an intellectual and material practice that has the power to generate new information and ways of making that contribute to societal advancement. In this way, the multiple interdisciplinary efforts and research found within the program both on campus and beyond stand as examples of civic engagement. The exceptional level of research evidenced in student work within the program reveals a dedication to the belief that good design can mitigate social and environmental problems. In addition to various curricular agendas this commitment is fostered by centers like CASE and the LRC. Moreover it is wholly evident that the confidence of a Rensselaer student comes in large part from the institutionalized belief that the skills sets they have obtained will prepare them to operate as stakeholders who shape built environments worldwide. While it is indisputable that global civic involvement is a valued theme intrinsic to the program, there continues to remain unrecognized opportunities for engagement within the Capitol District.

2. Program Self-Assessment Procedures

The accredited degree program must show how it is making progress in achieving the NAAB Perspectives and how it assesses the extent to which it is fulfilling its mission. The assessment procedures must include solicitation of the faculty's, students', and graduates' views on the program's curriculum and learning. Individual course evaluations are not sufficient to provide insight into the program's focus and pedagogy.

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This condition has been met. The School of Architecture has implemented a range of assessment procedures to solicit feedback from staff, faculty and students. Faculty retreats and meetings along with various program committees have occurred. A leadership team and Dean's Student Advisory Committee serve to provide feedback and mechanisms for problem-solving and communication. The Dean's Advisory Council provides invaluable assistance not only in development and fund-raising strategies, but offers professional perspectives and assistance in the review process for the strategic plan for the school. In addition, the APR included a self-assessment survey conducted via a web questionnaire. The results of the questionnaire provided feedback from 61 respondents from a pool of 250 students and faculty. All school meetings enable administrators, faculty and students to discuss the future of the school. A meeting has been planned by the School of Architecture to survey the graduating master's program students. The school understands that the masters program must continually evolve to reach the school's desired level of success.
3. Public Information

To ensure an understanding of the accredited professional degree by the public, all schools offering an accredited degree program or any candidacy program must include in their catalogs and promotional media the exact language found in the NAAB Conditions for Accreditation, Appendix A. To ensure an understanding of the body of knowledge and skills that constitute a professional education in architecture, the school must inform faculty and incoming students of how to access the NAAB Conditions for Accreditation.

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The School of Architecture cites on their program webpage the exact language found in the NAAB Conditions for Accreditation, and provides working links to the NAAB website for easy access to additional pertinent information.

4. Social Equity

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.

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This criterion was met with concern in the two previous visits and again in this visit. This team finds that 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.

5. Studio Culture

The school is expected to demonstrate a positive and respectful learning environment through the encouragement of the fundamental values of optimism, respect, sharing, engagement, and
innovation between and among the members of its faculty, student body, administration, and staff. The school should encourage students and faculty to appreciate these values as guiding principles of professional conduct throughout their careers.

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The school has met the condition for studio culture. As observed by the NAAB team and through discussions with the students and faculty it is evident that the school has a strong studio culture. There is a positive relationship between the students, faculty, and administration. The faculty has an open door policy for students from the top of the administration to the adjunct professors. The students have voiced that faculty members are available for advising in many areas pertaining to architectural studies as well as other issues that are characteristic to the needs of college students.

6. Human Resources

The accredited degree program must demonstrate that it provides adequate human resources for a professional degree program in architecture, including a sufficient faculty complement, an administrative head with enough time for effective administration, and adequate administrative, technical, and faculty support staff. Student enrollment in and scheduling of design studios must ensure adequate time for an effective tutorial exchange between the teacher and the student. The total teaching load should allow faculty members adequate time to pursue research, scholarship, and practice to enhance their professional development.

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The team finds this condition has been met, in part, because of the commitment by both the school and university administration to hire four new faculty members. It is expected these positions will be advertised in 2010 and filled no later than fall, 2011. These positions are essential for the growth and support of the Master of Architecture program. Additionally, it is expected additional faculty will support areas of need within the undergraduate program and allow current faculty to pursue research, scholarship, and practice to enhance their professional development.

Because the school has identified digital media and fabrication as areas of focus, current staffing has been overwhelmed. Pressures upon the digital fabrication workshop are immense and current personnel are unable to handle the increased student interest and instructional demands.

7. Human Resource Development

Schools must have a clear policy outlining both individual and collective opportunities for faculty and student growth inside and outside the program.

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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 understanding 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.

8. Physical Resources

The accredited degree program must provide the physical resources appropriate for a professional degree program in architecture, including design studio space for the exclusive use of each student in a studio class; lecture and seminar space to accommodate both didactic and interactive learning; office space for the exclusive use of each full-time faculty member; and related instructional support space. The facilities must also be in compliance with the Americans with Disabilities Act (ADA) and applicable building codes.

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This condition has been met. The Greene Building's central location on the campus, as well as, its iconic presence as the only home of the architecture program for its eighty-year existence is an important asset to the School of Architecture. The gallery, library, large central stair and loft like studio space form the bones of a great academic building. As an older building it does suffer from many infrastructure deficiencies. The most glaring is the lack of appropriate women's restroom facilities (one located on the second floor). This is of particular concern as the women's room represents a third of the fixture allocation by sex in a building whose student population is more than 50% female and where 75% of the staff are women.

The building does successfully provide space for a wonderful architectural library that offers both state-of-the-art digital access and staff support while housing an impressive collection of books and journals and quiet study spaces. The basement fabrication lab which provides ceramics lab, laser cutters, a 3D printer, CNC milling machine and a traditional wood shop is a great asset to the program. To accommodate the growth in technical equipment, infrastructure, and studio space, faculty office space has been reduced. The lack of studio space has forced total co-location of the graduate and undergraduate programs and while some co-location is very desirable, the team is concerned that the lack of any differentiation could retard the development of unique studio cultures for the graduate and undergraduate programs. Additional space must be
provided to replace pin up space that has been lost to repurposing. As the program continues to
grow proximal additional space must be identified to both support growth and to address existing
deficiencies.

9. Information Resources

Readily accessible library and visual resource collections are essential for architectural study,
teaching, and research. Library collections must include at least 5,000 different cataloged titles,
with an appropriate mix of Library of Congress NA, Dewey 720–29, and other related call
numbers to serve the needs of individual programs. There must be adequate visual resources as
well. Access to other architectural collections may supplement, but not substitute for, adequate
resources at the home institution. In addition to developing and managing collections,
architectural librarians and visual resources professionals should provide information services
that promote the research skills and critical thinking necessary for professional practice and
lifelong learning.

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This condition has been met. The Architecture Library, a branch of Rensselaer Libraries, is the
gem of the School of Architecture. The School of Architecture Library is conveniently located in
the Greene Building making it easily accessible for faculty and students. The library seems well-
staffed and is the best kept room in the building. The one concern was the need for more space
to allow for expansion of the resource collections.

10. Financial Resources

An accredited degree program must have access to sufficient institutional support and financial
resources to meet its needs and be comparable in scope to those available to meet the needs of
other professional programs within the institution.

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This condition has been met. There are sufficient financial resources to support the accredited
professional programs within the school. Paralleling the university and most of the economy, the
School of Architecture has undergone budget reductions and restrictions. While recognizing the
challenges of budget restrictions, the team also understands the value of investment. In order to
build the graduate program and to advance the reputation of the School of Architecture at
Rensselaer as envisioned by the administration and others, it is important to promote activities
which support external communication. This includes commitments by the university for on-going
funding for lecture series, exhibitions, publications and recruiting materials.

11. Administrative Structure

The accredited degree program must be, or be part of, an institution accredited by one of the
following regional institutional accrediting agencies for higher education: the Southern Association
of Colleges and Schools (SACS); the Middle States Association of Colleges and Schools (MSACS);
the New England Association of Schools and Colleges (NEASC); the North Central
Association of Colleges and Schools (NCACS); the Northwest Commission on Colleges and
Universities (NWCCU); and the Western Association of Schools and Colleges (WASC). The
accredited degree program must have a measure of autonomy that is both comparable to that afforded other professional degree programs in the institution and sufficient to ensure conformance with the conditions for accreditation.

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This condition has been met. Rensselaer Polytechnic Institute is accredited by Middle States Association of Colleges and Schools through 2011. The vision and mission of the Institute are set by its president and 13 cabinet members support the president. The university consists of five schools, each having a dean who is the head and reports to the provost, the chief academic officer. The new dean, Evan Douglish, appears to have an active and positive relationship with the faculty, students, and administration. The School of Architecture has a measure of autonomy that is comparable to that afforded other professional degree programs at Rensselaer. The associate dean, Mark Mistur, has helped to provide a transition for the new dean and plays an important and valued role within the administrative structure. The visiting team would also like to note the effectiveness and dedication of the faculty who serve as the chair of the undergraduate professional program (David Beil) and the chair of the graduate programs (Ted Krueger) for their organizational and leadership efforts. Faculty and students expressed that there is an atmosphere of inclusiveness in the decision-making process.

12. Professional Degrees and Curriculum

The NAAB accredits the following professional degree programs: the Bachelor of Architecture (B. Arch.), the Master of Architecture (M. Arch.), and the Doctor of Architecture (D. Arch.). The curricular requirements for awarding these degrees must include professional studies, general studies, and electives. Schools offering the degrees B. Arch., M. Arch., and/or D. Arch. are strongly encouraged to use these degree titles exclusively with NAAB-accredited professional degree programs.

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The Bachelor of Architecture program has 168 credit hours which meets the curricular criteria for general studies, professional studies and electives. A general survey of students showed an overwhelming majority of undergraduate students within the Bachelor of Architecture program are completing minors in an area of interest.

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 masters 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.
13. Student Performance Criteria

The accredited degree program must ensure that each graduate possesses the knowledge and skills defined by the criteria set out below. The knowledge and skills are the minimum for meeting the demands of an internship leading to registration for practice.

13.1 Speaking and Writing Skills

Ability to read, write, listen, and speak effectively

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This criterion has been met. Multiple courses in the history/theory sequence are mostly if not solely dependent on speaking and particularly writing skills to demonstrate ability to engage course content critically. Evidence of these abilities can be found through the form of short essays, written responses to given prompts, and individual and group presentations performed at commendable levels by B. Arch and M. Arch students.

13.2 Critical Thinking Skills

Ability to raise clear and precise questions, use abstract ideas to interpret information, consider diverse points of view, reach well-reasoned conclusions, and test them against relevant criteria and standards

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This criterion has been met. Arch 2140, The Building and Thinking of Architecture, Arch 4040, Cities/Land and Arch 4140, Modernity in Culture and Architecture, present a high quality sequence of courses which compares and contrasts popular canons and recognizes subtle distinctions between them. Students are able to express themselves clearly, rationally and intelligently.

13.3 Graphic Skills

Ability to use appropriate representational media, including freehand drawing and computer technology, to convey essential formal elements at each stage of the programming and design process

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The criterion has been met. Student work displays an ability to create quality graphics through the use of computers and free hand drawings. Students use both types of media to represent a variety of architectural drawings that communicate both the design and its process.
13.4 Research Skills

Ability to **gather, assess, record, and apply relevant information in architectural coursework**

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This criterion has been well met. Students have shown on many occasions that they can conduct research and apply it in their architectural courses. Specifically, the ARCH – 4690 Case Studies course exhibits the students’ high level of skill in gathering, assessing, and recording information through group case studies assignments.

13.5 Formal Ordering Skills

Understanding of the **fundamentals of visual perception and the principles and systems of order that inform two- and three-dimensional design, architectural composition, and urban design**

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This criterion has been met. Both the Building and Thinking of Architecture series and First and Second year studios create an opportunity for understanding formal ordering systems through graphic analysis and a survey of architectural compositional principles in historical examples. Student work demonstrating ability in this area can be found specifically at the undergraduate and graduate level.

13.6 Fundamental Skills

Ability to **use basic architectural principles in the design of buildings, interior spaces, and sites**

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This criterion has been met. Fundamental Design skills are clearly evident in student work. Particularly, entry level design studios in the undergraduate design sequence accommodate the need for students to consider basic site, building design, and interior spaces as a central focus in smaller scaled projects.

13.7 Collaborative Skills

Ability to **recognize the varied talent found in interdisciplinary design project teams in professional practice and work in collaboration with other students as members of a design team**

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This criterion was well met. This judgment is based on a well-documented saturation of collaborative projects that occurred throughout the graduate and undergraduate curriculum. Specifically evidence can be found of student collaboration within the undergraduate program initially in the fall design studio in which students work in teams to realize full-scale structures. Later, the fall Design 2 studios and the Graduate Architecture Design 2 studios provide opportunities for students to collaborate on site consideration as a precursor to design. Additionally undergraduate students work in teams to conduct research and analysis of materials in the Materials and Design course.

Recognition of the talent found in interdisciplinary project teams is demonstrated in the design development course which refutes the notion of architectural design as an isolated practice by teaming architecture students with a range of civil and acoustical engineering students who join the studio in the Spring semester along with the Bedford Visiting Professor (a practicing engineer).

13.8 Western Traditions

Understanding of the Western architectural canons and traditions in architecture, landscape and urban design, as well as the climatic, technological, socioeconomic, and other cultural factors that have shaped and sustained them

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This criterion has been met. There is a strong commitment to Western traditions throughout the curriculum in both lecture and studio courses. With the exposure by some faculty and students through the study abroad program in Rome, Italy, there is an exceptional strength of Roman and Italian architectural study within Western architectural canons and traditions.

13.9 Non-Western Traditions

Understanding of parallel and divergent canons and traditions of architecture and urban design in the non-Western world

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This criterion has been met. Arch 2110/2120 and 4040 are well organized and present the content in using a well integrated and comparative methodology. These courses provide a basic introduction for possible future international studies in India, Turkey and China.

13.10 National and Regional Traditions

Understanding of national traditions and the local regional heritage in architecture, landscape design and urban design, including the vernacular tradition

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This criterion has been met. The team found evidence in Arch 4140, Modernity in Culture and Architecture. The course provides undergraduate and graduate students the intellectual ability to understand and interpret national traditions and local regional heritage in architecture, landscape design and urban design. Though this understanding may meet the criterion, the team was disappointed that the school did not respond to the previous team’s recommendation:

“RPI’s position in Troy places unusually rich traditions and context at the school’s disposal. A greater effort should be made to recognize the opportunities offered by these resources and to use them as a springboard for a greater discussion of national architectural history and character and of the possibilities of regionalism throughout the country.” 2004 Visiting Team Report.

13.11 Use of Precedents

Ability to incorporate relevant precedents into architecture and urban design projects

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This criterion has been well met. The use of precedents is apparent in the level of understanding and use of materials and structural systems in student projects. The journal entries that were part of the ARCH 459C Materials and Enclosures class were exceptional. Students look at precedents to better understand architectural principles pertaining to Materials and Enclosures. Students documented Precedents through sketching and diagrammatic exercises while drawing their own conclusions.

13.12 Human Behavior

Understanding of the theories and methods of inquiry that seek to clarify the relationship between human behavior and the physical environment

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This criterion has been met. The human condition is considered and understood in coursework through an examination of theoretical texts in the Contemporary Design Approaches course and applied in lower level design studios through notions of perceptual experience and anthropomorphic affordance.

13.13 Human Diversity

Understanding of the diverse needs, values, behavioral norms, physical ability, and social and spatial patterns that characterize different cultures and individuals and the implication of this diversity for the societal roles and responsibilities of architects

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This criterion has been met. The diversity of the human condition with respect to culture, behavior, and physical ability is evidenced as understood through coursework that examines canonical texts in architecture in addition to an application of these sensitivities in lower to upper level design studios.

13.14 Accessibility

Ability to design both site and building to accommodate individuals with varying physical abilities

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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 nonexistent in the majority of the design projects.

13.15 Sustainable Design

Understanding of the principles of sustainability in making architecture and urban design decisions that conserve natural and built resources, including culturally important buildings and sites, and in the creation of healthful buildings and communities

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This criterion has been met. Two courses present materials on the topic of sustainable design. Environmental and Ecological Systems teaches students how to evaluate air quality and the impact of thermal heat islands. Case studies and studio projects analyze the effect of green roofs. The course Building Systems and Environment addresses Indoor Air Quality and Sick Building syndrome. Student exercises demonstrate ventilation considerations and shading options.

13.16 Program Preparation

Ability to prepare a comprehensive program for an architectural project, including assessment of client and user needs, a critical review of appropriate precedents, an inventory of space and equipment requirements, an analysis of site conditions, a review of the relevant laws and standards and assessment of their implication for the project, and a definition of site selection and design assessment criteria

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The team concluded that this criterion was well met. The materials presented a thorough process for program preparation. Student work in this area was extensive, clear, organized and complete. The programs were graphically strong and included appropriate citations of sources.

Specifically, the criterion is addressed in the undergraduate and graduate curriculum first at a smaller scale with a simple house project in the Architectural Design 2 studio (taught in conjunction with Graduate Architecture Design 2) and later at a larger scale with the design of an infrastructural facility in the Architectural Design 3 studio (taught in conjunction with the Graduate Design 3 studio). In both studios, programming is considered comprehensively. The work demonstrated an insightful and critical assessment of the qualitative (site conditions, client and user needs, and the derivative patterns, conditions, and precedents germane to a particular building type) and quantitative (space and equipment requirements, and relevant standards and codes) implications for the building project. Lastly, the Design Development course allows for in-depth assessment of the building program in relationship to design intention within a comprehensive project.

13.17 Site Conditions

*Ability to respond to natural and built site characteristics in the development of a program and the design of a project*

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This criterion was not met. Many projects were presented with sites 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.

13.18 Structural Systems

*Understanding of principles of structural behavior in withstanding gravity and lateral forces and the evolution, range, and appropriate application of contemporary structural systems*

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This criterion has been well met. A number of courses contribute to a strong program in understanding structural behavior. The team was impressed with the introduction of structural behavior with basic design principles at full scale beginning in the first semester of first year. Additionally, the Bedford A/E Studio is an outstanding example of an interdisciplinary approach to teaching structural principles. The Bedford Studio engages students from architecture and engineering departments and exposes students to
important collaborative methods. Arch 2330/4330 Structures is a thorough series of courses which actively involves students in their ability to understand structural systems. In addition to numerical analysis, students learn principles through the physical testing (and failure) of bridge design.

13.19 Environmental Systems

Understanding of the basic principles and appropriate application and performance of environmental systems, including acoustical, lighting, and climate modification systems, and energy use, integrated with the building envelope

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This criterion is well met. The team found evidence of advanced thinking in all environmental systems courses and integration of these systems into the design work represented in 4300, Design Development. Arch 2360 Environmental and Ecological Systems and Arch 4740 provide an outstanding understanding and application of environmental systems. The use of ECHOTECH as a model for analysis is consistent with the high level of technology adopted by the architecture program.

13.20 Life-Safety

Understanding of the basic principles of life-safety systems with an emphasis on egress

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This criterion has been met. The subject matter is covered in the lecture and required reading materials in 4540, Professional Practice. On the other hand, the team saw limited evidence that the students gained an understanding of the material based on the feedback provided by only two quizzes. A more robust evaluation process would assure the team that understanding has occurred. Some life-safety information was also presented as part of 4300, Design Development. While this material was addressed, the team found a lack of rigor in the project documentation, such as the direction of swings of egress doors represented by the majority of student projects.

13.21 Building Envelope Systems

Understanding of the basic principles and appropriate application and performance of building envelope materials and assemblies

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This criterion has been well met. The construction systems course creates a good foundation for how buildings go together. The design development course shows an understanding and ability of students to design and produce competent technical
documents. Full-scale drawings showing plan and section views of building envelope systems were impressive.

13.22 Building Service Systems

Understanding of the basic principles and appropriate application and performance of plumbing, electrical, vertical transportation, communication, security, and fire protection systems

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The criterion has been met. Arch 4300, Design Development provides the evidence for meeting this criterion. The ARCH 4740 Building Systems and Environment course specifically meets the criterion. The use of case studies guides students to develop and design their own building service systems.

13.23 Building Systems Integration

Ability to assess, select, and conceptually integrate structural systems, building envelope systems, environmental systems, life-safety systems, and building service systems into building design

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This criterion has been met.

13.24 Building Materials and Assemblies

Understanding of the basic principles and appropriate application and performance of construction materials, products, components, and assemblies, including their environmental impact and reuse

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This criterion has been met. The Materials and Enclosure course prepares students to understand building materials and demonstrates how the materials are assembled into wall sections. The Design Development course demonstrates the students' ability to research and design a structure and detail large wall sections showing how various materials go together. This is a very realistic approach to architectural education.
13.25 Construction Cost Control

Understanding of the fundamentals of building cost, life-cycle cost, and construction estimating

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This criterion has been met. As part of the ARCH 4540, Professional Practice, students perform construction cost analysis on several of their own projects using the RS Means Cost Guide. The students are required to take the assignment one step further by communicating with construction companies and suppliers to check against the results from their initial cost guide analysis.

13.26 Technical Documentation

Ability to make technically precise drawings and write outline specifications for a proposed design

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This criterion has been well met. The design development course demonstrates the ability of students to design a project and develop highly detailed wall sections and plans.

13.27 Client Role in Architecture

Understanding of the responsibility of the architect to elicit, understand, and resolve the needs of the client, owner, and user

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This criterion has been met.

13.28 Comprehensive Design

Ability to produce a comprehensive architectural project based on a building program and site that includes development of programmed spaces demonstrating an understanding of structural and environmental systems, building envelope systems, life-safety provisions, wall sections and building assemblies, and the principles of sustainability

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This criterion has been met. The school has committed significant resources to meet this criterion. Arch 4300 is an outstanding series of coordinated courses which clearly demonstrate the ability to meet or exceed the requisites of programmed spaces, structural/environmental systems, building envelope, wall sections and building
assembles. Less well-addressed are the issues of site, life-safety provisions and the principles of sustainability.

13.29 Architect’s Administrative Roles

Understanding of obtaining commissions and negotiating contracts, managing personnel and selecting consultants, recommending project delivery methods, and forms of service contracts

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This criterion has been met. It appears that this subject matter is covered in the lecture and required reading materials in 4540, Professional Practice. However, the team found this material barely adequate and there was limited feedback to indicate that the students gained an understanding of the material by the test results from two quizzes. A more robust process is necessary to more effectively demonstrate understanding and a more complete treatment of issues such as managing personnel and selecting consultants.

On the other hand, some of the criterion was ostensibly addressed during the required New York site visits to the professional offices of SHoP, Grimshaw, SOM, and Snohetta as part of the 4300 Design Development course. The team was presented with written reports by students who attended the visits. The reports provided evidence that understanding of the architect’s administrative roles was gained from the visits. The team concluded that the opportunity to visit multiple professional offices and learn on-site the aspects of the differing practices was a strength of the program.

13.30 Architectural Practice

Understanding of the basic principles and legal aspects of practice organization, financial management, business planning, time and project management, risk mitigation, and mediation and arbitration as well as an understanding of trends that affect practice, such as globalization, outsourcing, project delivery, expanding practice settings, diversity, and others

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This criterion has been met. It appears that principles and legal aspects of practice of organization are covered by the lecture and required reading materials in 4540, Professional Practice. While the materials are adequate, there was limited feedback that the students had gained an understanding other than that provided in two quizzes. The team did not find that topics of financial management, business planning, time and project management, risk mitigation, and mediation and arbitration as well as an understanding of trends that affect practice, such as globalization, outsourcing, project delivery, expanding practice settings, diversity, and others were clearly identified as part of the syllabus for the course. However the some of the material was covered during the required New York city site visits to the architectural offices of SHoP, Grimshaw, SOM, and Snohetta that were part of course 4300 Design Development. Students’ written feedback demonstrated that an understanding of the issues was gained from the visits.
13.31 Professional Development

Understanding of the role of internship in obtaining licensure and registration and the mutual rights and responsibilities of interns and employers

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This criterion has been met. The subject matter is covered primarily in the lecture and required reading materials of course 4540 Professional Practice. While the materials are clear, current, and concise, there is limited evidence of understanding from the two quizzes. In the team's meeting with the entire student body there was evidence that the students had gained an understanding of the material.

13.32 Leadership

Understanding of the need for architects to provide leadership in the building design and construction process and on issues of growth, development, and aesthetics in their communities

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This criterion has been met. The design courses along with the support classes, especially the Professional Practice course demonstrate that students have an understanding of the leadership role of architects in the design process.

13.33 Legal Responsibilities

Understanding of the architect's responsibility as determined by registration law, building codes and regulations, professional service contracts, zoning and subdivision ordinances, environmental regulation, historic preservation laws, and accessibility laws

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This criterion has been met. The subject matter is covered primarily in the lecture and required reading materials of course 4540 Professional Practice. While the materials are clear, current, and concise, there is limited feedback that the students have gained an understanding other than that provided in two quizzes. The material was also addressed as part of course 4300 Design Development. Student work from this course demonstrated that issues of building codes and regulations, zoning and subdivision ordinances, environmental regulation, historic preservation laws, and accessibility laws were met.
13.34 Ethics and Professional Judgment

Understanding of the ethical issues involved in the formation of professional judgment in architectural design and practice

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This criterion has been met. The subject matter is covered primarily in the lecture and required reading materials in 4540, Professional Practice. The team found this material barely adequate and found limited feedback that the students had gained an understanding of the material. The team did not find a clear indication that course 2360 Environmental and Ecological Systems overtly addressed the topic.
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III. Appendices

Appendix A: Program Information

1. History and Description of the Institution

The following text is taken from the 2010 Rensselaer Polytechnic Institute Architecture Program Report.

The Rensselaer School was established in Troy, New York, 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). 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 and Technology, as well as interdisciplinary degrees in information technology.

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. Rensselaer maintains an online archive of seven rare books covering the Institute's early history. Published between 1855 and 1968, the books detail Rensselaer's founding and development, and place the school in the context of scientific and technological education in the 19th and 20th centuries.

One Legacy — Many Pathways
Rensselaer is a diverse community of dreamers and doers who share several characteristics. They are drawn to the sciences and technology, and to disciplines ranging from architecture and engineering to business and the arts. They love to tackle complex problems, and they have a sincere desire to improve the world. Yet the people of Rensselaer are true individuals: everyone who comes here seeks a pathway to greatness that is uniquely his or her own.

Bold Exploration
When students come to study at Rensselaer, they will benefit from a proud legacy of bold exploration. Rensselaer Polytechnic Institute was established in 1824 as the first technological university in the English-speaking world. The Institute was organized around a concept considered quite radical for the time: that students should actively engage with their studies by performing experiments and exploring other participatory forms of learning, rather than sitting passively in lectures.

A Fully Realized University
Over time, as Rensselaer has evolved into a fully realized university of 5,350 undergraduates and 2100 graduate students, this groundbreaking approach to education has generated wave after wave of innovation and discovery. One Rensselaer graduate masterminded the first moon landing; another, the building of the Brooklyn Bridge. Our alumni invented e-mail and helped develop sunscreen. They have established and led successful enterprises, from Texas Instruments (inventors of the first silicon transistor) to Vicarious Visions (creators of Guitar Hero III).

Become A Pioneer
Rensselaer students, will walk in the footsteps of these pioneers — and become one. They will enjoy access to world-class research facilities, and work alongside exceptionally talented researchers on challenges that range from eradicating cholera to combating
global warming. Whether you study architecture or arts, mechanical engineering or music, bioinformatics or business, Rensselaer is a paradise for people who yearn to fulfill their dreams, and improve the world in the process.

Enrollment
Resident Undergraduate Students (Fall 2008)
Full-time: 5,357, Part-time: 10
Undergraduate Total: 5,367

Graduate Students (Fall 2008)
Resident Full-time: 1,092 Resident Part-time: 108
Resident Total: 1,200
Non-Resident: 887 Non-Matriculated: 67 Graduate Total: 2,154

Total Students Enrolled: 7,521 (Fall 2008)

2. Institutional Mission

The following text is taken from the 2010 Rensselaer Polytechnic Institute Architecture Program Report.

Rensselaer's Mission Statement:
Rensselaer educates the leaders of tomorrow for technologically based careers. We celebrate discovery, and the responsible application of technology, to create knowledge and global prosperity.

Rensselaer pursues this goal: To achieve greater prominence in the 21st century as a top-tier world-class technological research university with global reach and global impact.

Spectrum and Nexus
These two concepts help explain the unique environment that is Rensselaer. Our university promotes excellence across a broad continuum of disciplines — from engineering and biotechnology to athletics and the arts. Rensselaer’s creative spirit also fosters limitless opportunities for diverse disciplines — and people — to connect, intersect, and enrich one another in ways that benefit the larger world.

Rensselaer’s mission statement was approved by the Board of Trustees in May 2000. Its adoption along with the Rensselaer Plan articulates a strategic vision and delineates the means to achieve it. An "evergreen" plan designed to be revised on a regular basis, "The Rensselaer Plan will guide our decisions and provide the framework for school and divisional performance plans that will serve as the basis for each year’s operating plan and budget. Performance plans will define means and metrics, and when prioritized, will create the case for major new resources." A copy of the Rensselaer Plan can be found following this section.

3. Program History

The following text is taken from the 2010 Rensselaer Polytechnic Institute Architecture Program Report.

In 1848, Rensselaer’s senior professor and director Benjamin Franklin Greene travelled to Europe to undertake the first systematic study of educational models, examining among others the Ecole Des Beaux Artes and L’Ecole Politechnique in Paris. Upon his
return in the 1850's he wrote, "The True Idea of a Polytechnic" premised on looking forward, toward the creation / building of a new world, and proposed that The "Rensselaer School" become "The Rensselaer Polytechnic of Engineering and Architecture", asserting architecture to be essential in any polytechnic "worthy of the name". While fulfillment of this vision would have made Rensselaer's School of Architecture the first in North America, Greene's recommendation finally became reality in 1929 and the first architecture students graduated in 1933.

The Department of Architecture (later the School of Architecture) remained small in its early years, placing its emphasis upon a pragmatically oriented professional program. Professor Turpin Bannister, one of the founders of the Society of Architectural Historians, introduced the study of history into the program in the 1930s (the Society of Architectural Historians was founded while he was on the faculty at Rensselaer). After the Second World War, the program grew in size and developed depth in structures and building construction. A design emphasis emerged in the 1960s, with concern for urban and community issues.

The School of Architecture offers two professional degree programs leading to NAAB-accredited Bachelor of Architecture (BArch) and Master of Architecture (MArch) degrees. The Bachelor of Architecture program has been continuously accredited by NAAB since 1945. The Master of Architecture (first professional degree) was accredited by NAAB in 1979 and has since been continuously accredited.

It is through architecture that a future shaped by technology and imagination in response to contemporary challenges will be made real. Though architecture is the most public of the arts, it is also in these times a context for the most needed and far-reaching creativity that can positively affect urbanizing societies and threatened environments. To enable, inspire and equip its graduates an education in architecture must deal with the physical, structural and performance demands of building(s); must equip students to be capable and creative in advanced computational techniques that empower design imagination, while enhancing predictability, performance and the integration of multi-disciplinary concerns integrated within buildings (complex systems) and, must provide experience of the global context within which architects practice. Such issues are at the core of the undergraduate and graduate programs in architecture at Rensselaer.

The School of Architecture offers its professional degree student's semester long international programs in Italy, India and China, complemented by numerous short international academic travel workshop opportunities. The semester-long Built Ecologies program, embedded within Rensselaer's Center for Architecture Science and Ecology [CASE] at Skidmore Owings and Merrill [SOM] in New York City, creates the context for undergraduates and graduates to work together with faculty from multiple disciplines, practicing architects and engineers on the development of emerging, next-generation, sustainable building technologies.

Faculty and programs at the School encourage study and research between disciplines. The studio environment supports the most ambitious applications of information-based design and technology and places high value on creativity. Design is central to architectural education, and at Rensselaer it is taught by 17 permanent faculty complemented by clinical and adjunct professors drawn from research and practice throughout the region and beyond.

The Greene Building
Home of the School of Architecture, Greene has its own Architecture branch library, houses the studios, faculty offices and administrative spaces, a Fabrication Lab (digital and non-digital shop), Ph.D. spaces and research labs as well as a gallery for showing
and reviewing students’ work, seminars and lectures. In Greene one multimedia equipped classroom and several seminar rooms may be scheduled for classes or meetings however many of architecture’s lecture classes are scheduled in other classrooms on campus.

The Fabrications Lab was relocated and expanded to 4000sf in 2008-09. It includes a 380sf ceramics laboratory, a 440sf laser 13D printing suite with two laser cutters and a 3D printer, and a 430sf milling suite with a 4’x8’ bed, 3-axis, and CNC milling machine. A general shop/machine room is equipped with traditional hand and power tools and an 840sf class I bench room space accommodates shop-based classes and project assembly work.

Undergraduates and Masters degree students in our NAAB accredited professional programs experience an exceptional combination of material engagement and advanced computational design with emphasis on techniques that enable a progressive agenda within the rapidly ever-changing conditions of the architecture discipline and world. Supporting subject areas in emerging technologies, sustainability, history and theory are taught as integrated knowledge and skill sets for the designer and professional. Over 57% of undergraduates participate in one of our semester-long programs in Italy, India or China, and together with the New York City semester program, all undergraduate students have opportunity to spend at least one semester embedded in a second dynamic learning setting.

The M.Arch I is a 3 1/2-year first professional degree program for students holding bachelor’s degrees in alternative fields. Applicants with previous architecture study will be considered for advanced standing. By competitive application M.Arch I students can also participate in several international programs of study, or for a semester in New York City in the Built Ecologies program at the Center for Architecture Science and Ecology (CASE).

The undergraduate program has, in recent years increasingly benefited from the development of new Masters of Science and Ph.D. graduate programs in Lighting, Architectural Acoustics and Built Ecologies. They have attracted to the school gifted faculty from architecture and kindred fields, the majority of whom have advanced degrees in areas of specialization significant to architecture. They have added minor areas of concentration to the undergraduate curriculum in acoustics and lighting and an opportunity to study for a semester in NYC at CASE. The expanded student body is more diverse and mature, and the research culture of these programs creates a healthy respect for research in architecture and for the benefits of bringing knowledge from other disciplines.

In addition to the M.Arch I, the graduate program also offers Masters Degrees in Architectural Acoustics, Built Ecologies and Lighting, all of which can lead to the Ph.D. in Architectural Sciences. The Lighting program is taught within the Lighting Research Center, the preeminent setting for lighting research nationally, and a model for graduate research and scholarship. The Architectural Acoustics program is one of only a few in the nation with an exemplary reputation for student work and scholarship. Built Ecologies, linked to Rensselaer’s Center for Architectural Sciences and Ecology in New York City, is a research and education program focused on emerging materials and technologies for a next generation of sustainable building and building system design that are driven by issues of energy and the environment. The Built Ecologies program, collocated in Troy and in NYC provides a structured opportunity for upper level B.Arch and M.Arch I students to join graduate research initiatives in the SOM I CASE context while completing related course and studio-work.
The School of Architecture offers the Doctor of Philosophy degree in Architectural Sciences to candidates who are prepared to undertake innovative and substantive research that adds to the body of knowledge drawn on by the design disciplines. The Sciences in this context refer to those disciplines that support and shape our understanding and production of the built environment including its physical, biological, environmental, social, cognitive and cultural contexts. The Ph.D. is an inherently interdisciplinary degree in which concentrations can be elected in Architectural Acoustics, Built Ecologies, and Lighting where distinguished faculty from within the School and across the Institute collaborate on research projects that are informed by both disciplinary depth and trans-disciplinary integration.

The Ph.D. is intended for those who desire a career in teaching, research, specialized professional practices or consulting. The program is intended to build knowledge, skills, insight and experiences that will enable these individuals to make an original and lasting contribution to their chosen field beginning with their dissertation and continuing into their professional lives. 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.

The School of Architecture has two Centers, the Lighting Research Center, now in its 20th year and the much younger Center for Architecture and Ecology, launched in 2008.

The Lighting Research Center
The Lighting Research Center (LRC) is the leading university-based research center devoted to lighting and offers the world's premier graduate education in lighting, including one- and two-year master's programs, and a Ph.D. program. Since 1988, the Center has built an international reputation as a reliable source for objective information about lighting technologies, applications, and products. It provides training programs for government agencies, utilities, contractors, lighting designers, and other lighting professionals.

Its mission is to advance the effective use of lighting and thereby to create a positive legacy for society and the environment. We investigate lighting issues and educate the next generation of lighting leaders. Our programs cover a range of activities including both laboratory testing of lighting products and real-world demonstration and evaluation of lighting products and designs. We conduct research into energy efficiency, new products and technologies, lighting design, and human factors issues.

The Center for Architecture Science and Ecology
The Center for Architecture Science and Ecology (CASE) is addressing the need for accelerated innovation of radically new sustainable built environments through the development of next generation sustainable building systems. Co-located on the Rensselaer campus and in lower Manhattan, 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. In partnership with Skidmore, Owings & Merrill (SOM), the School of Architecture is pushing the boundaries of environmental performance in urban building systems on a global scale, through research using actual building projects as research test beds.

By bringing together ambitious building design professionals with research faculty and advanced students dedicated to the exploration of emerging building technologies, the research center creates an intellectually vibrant educational setting for advanced degree and professional program students. The School has focused its built Ecologies program on the development of next generation performance driven building technologies to
support clean, self-sustaining built environments aimed at innovating and implementing changes to building practices in three priority areas: energy consumption; sustainable resource management; and quality of access to essential resources.

4. Program Mission

The following text is taken from the 2010 Rensselaer Polytechnic Institute Architecture Program Report.

Mission: To prepare the most effective practitioners of architecture and its related fields, for international practice in the 21st Century.

The most effective 21st century practitioners will have to be

■ capable in their craft and
■ knowledgeable and aware of the many and increasing numbers of integrated concerns that affect what buildings are, how they perform and how they are conceived, developed and constructed.

To be leaders in the profession, Rensselaer graduates need to be

■ creative innovators
■ quick to recognize and discern the most important and emerging criteria, and
■ confident and able to respond effectively in the context and control of a larger vision.

To participate in internationally and have global impact, architects must,

■ be prepared to recognize and address different situations
■ value difference and diversity
■ be aware of the environment we all share

Vision: Restructure the School of Architecture to become an international center for the integration of innovations in technology and science into design at many scales from products to community.

To facilitate innovations in technology into design the school seeks to create a larger intellectual context for architecture studies, integrating first principles, allied disciplines, and interdisciplinary enterprise in the creation of a vibrant settings which support knowledge integration, vision and sets a trajectory for lifelong learning and research.

Our current mission statement was developed in late 2001 as part of the initial performance planning process. It was approved by the faculty and administration within the process and has been reaffirmed as we move through the annual performance planning process. We have since strengthened the LRC to National preeminence, been recognized for exceptional scholarship nationally in Architectural Acoustics and realized a new advanced degree and research program in Built Ecologies which integrates our professional stucents. We have created a Ph.D. in Architectural Sciences and launched the Center for Architecture Science and Ecology CASE at SOM in New York City – all consistent with our vision for the School.
5. Program Self Assessment

The following text is taken from the 2010 Rensselaer Polytechnic Institute Architecture Program Report.

The strengths of the school as follows:
- An intellectually diverse and distinguished Faculty
- Quality of students
- Access to Internationally Renowned Research Centers within the School of Architecture
- Situated within an Institute with a world-class reputation for Science and Engineering Research
- Access to the Experimental Media Performing Arts Center (EMPAC) for lectures and interdisciplinary events
- A commitment within the curriculum to environmental awareness

Balance between professional capacity and creative and critical skills
The professional programs' balance between building professional capacity and creative and critical skills is one, which prepares students for leadership in diverse practices. The program is professional and it is progressive, accomplished in equipping students with intellectual skills and knowledge that create confidence and form a trajectory for lifelong learning and leadership in a changing profession and world.

Performance and Rankings
In the profession high pass rates on the ARE (6th among NAAB schools in 2007)\(^1\) speak to proficiency and based significantly on how graduates are perceived in the workforce, Rensselaer’s School of Architecture is ranked 20th in 2008 by Design Intelligence Magazine.

Access to Technology

\(^1\)NCARB website – latest data - 2007

The Polytechnic setting, and in particular Rensselaer’s research platforms, infrastructure and intellectual capital provides an immensely rich setting for the development and integration of new techniques, systems and materials into the Architecture enterprise.

International Programs
Rensselaer offers many exceptional international program and travel opportunities that are built into the curriculum and provide every student the opportunity to broaden their exposure to various settings and cultures.

Area Strengths
Area strengths include computational design, technology-design integration, fabrication and interdisciplinary initiatives chief among which are the Bedford initiatives joining engineering and architecture faculty and students in collaborative learning settings, and the Built Ecologies education and research program focused on developing next generation sustainable building systems. Built Ecologies is located within CASE, the Schools newly launched Center in partnership with and at the offices of SOM in New York City.
Challenges facing the School and plans to address them

Faculty Loading
Challenges facing the school in recent years include faculty loading and in particular staffing the undergraduate final project / master’s thesis in a manner that serves the students well without overloading faculty and impacting their ability to excel in scholarship, research and advancement. While the final project and master’s thesis has been covered, coupled with the already high teaching load, time to commit to other important activities is constrained. Administrators in the school also carry full teaching loads.

Plan to address challenge:
- Two new faculty hires have been authorized
- Change the standard base teaching load for design teachers
- Change the teaching load expectation for administrators
- Seek several more faculty lines in association with changing teaching load expectations

B. Arch Final Project and M. Arch 1 Thesis
The B. Arch Final Project I M. Arch Thesis is a faculty guided independent endeavor which expects each student to identify develop and execute a critical project. While the caliber of student projects has improved from one year to the next we feel there is significant room for improvement. A change in faculty over loading and a reassessment of the current coursework structure is a priority in order to strengthen this area in the professional curriculum.

Plan to address challenge:
- Reassess the research component of Final Project in order to increase critical thinking and overall preparation for the final design proposal
- Reassess the criteria for student group clustering in the context of linking faculty and students together as productive units

Faculty Diversity
Our student body diversity is strong with well over 50% women students and approximately 15% underrepresented minority students. While we have had women and underrepresented minority tenure track faculty hires in the past several years and women faculty have advanced in rank and responsibility, we do not consider progress sufficient. We have in the same period lost women faculty to other positions, one to a Deanship and one to an aspirant research an education program.

Plan to address challenge:
- Proactively recruit women and minority candidates to future full time and adjunct positions
- Improve our mentoring of all rising faculty, with a particular focus on women and minority faculty.
- Invite lecturers that celebrate as role models the achievements of women and minorities within our profession.

Re-Populating the M. Arch 1
By 2006 any and all financial aid for Masters of Architecture students within our education and general funds had been reduced and/or rebudgeted, dramatically impacting our ability to bring in students. At a private university full tuition over 3-1/2 years leads to a cost of education at over $125k (not including living expenses). As a result, in 2006 we had only three entering students, in 2007, only four and none in 2008. Given that a NAAB
accredited professional program cannot possibly integrate research in the same way as a PhD program, a different graduate tuition/financial model is required. In 2008, the Institute implemented a merit scholarship model later in the institution. It yielded 66 excellent students in the first year. Our intent is first to expand to one section (12 students) per year, by Fall 2010, and two sections per year (24 students) per year by 2013.

**Plan to address challenge:**

- Implement a Merit Scholarship model to compete with cost of attendance similar to programs in peer and aspirant institutions. (began in 2009 yielded six new student\(^2\))
- Reassess the current curriculum model of our 3 Y year 112 credit NAAB accredited program to offer a contemporary and critical educational experience for our students based upon maximizing our unique research based resources here at Rensselaer.
- Create Rensselaer distinction by formalizing concentrations and International and NYC semester options.

\(^2\) Anticipate the ability to yield 12 well qualified students per year beginning in FY10
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Appendix B: The Visiting Team

Team Chair, Representing the AIA
Linda Klisk, AIA, LEED® AP, NCARB
3008 Kaumana Drive
Hilo, HI 96720
(307) 760-1625 mobile
lkiisk@hotmail.com

Representing the ACGA
Daisy-O’lce Williams, Assistant Professor
Hampton University
School of Engineering and Technology
Department of Architecture
Hampton, VA 23666
(850) 443-8436
daisy.williams@hamptonu.edu

Representing the AIAS
Jeremy W. Rogers
1200 N. Perkins Road
Apt. #6
Stillwater, OK 74075
(405) 973-4004 mobile
jeremy.rogers10@okstate.edu

Representing the NCARB
Norman L. Lach, CSI, CCS, AIA, ALA, FPCI
Program Director, Architectural Studies
School of Architecture
Southern Illinois University
414 Quigley Hall, MC-4337
875 South Normal Avenue
Carbondale, IL 62901
(618) 453-1128
(618) 453-1129 fax
nlach@siu.edu

Representing the ACSA
Clark E. Llewellyn, AIA, Dean
School of Architecture
University of Hawai‘i at Mānoa
2410 Campus Road, Room 201-B
Honolulu, HI 96822
(808) 956-3469
(808) 956-7778 fax
cllarkle@hawaii.edu

Observer
James H. Collins, Jr., FAIA, LEED® AP
President, Payette
285 Summer Street
Boston, MA 02210
(617) 895-1000
info@payette.com
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Appendix C: The Visit Agenda

Saturday, March 20

3:00pm Team Arrival, Check-in at the Hilton Garden Inn, Hoosick Street
5:00pm Team Dinner at hotel

Sunday, March 21

8:00am Team Breakfast at Hotel
9:00am Arrive at Rensselaer – APR Review and Assembly of Issues & Questions – Greene 117
10:00am Overview of Team Room w/ Program Head
   (D. Bell, UG Chair)
11:45am Initial Review of Exhibits and Records
12:30pm Team Lunch with Program Admin - Greene 117
   (D. Bell, UG Chair, T. Krueger, Grad Chair)
2:00pm First Tour of Facilities – Greene Building
3:00pm Entrance Meeting w/ All Faculty - Fischbach Room, Folsom Library
4:30pm Continued Review of Exhibits and Records
6:00pm Team Dinner – Team Room
8:00pm Debriefing Session – Team Room

Monday, March 22

8am Team Breakfast w/ Program Heads – Greene 117
   (D. Bell, UG Chair, T. Krueger, Grad Chair)
9:00 am Entrance Meeting w President and Provost – Troy Building, 3rd Floor Conf. Room
11:00am Entrance Meeting w/School Administrator – Greene 117
   (E. Dougis, Dean + M. Mistur, Assoc. Dean)
12:30 pm Lunch w/ Selected Faculty – Faculty Dining Hall RSDH
   (J. Braasch, A. Dyson, F. Garba, T. Mical, M. Oatman, D. Riebel)
2:00pm Observations of Studios
4:00pm School-wide Entrance Meeting w/ Students– Biotech Auditorium
   (T. Mical, A. Saunders)
5:00pm Reception w/ Faculty, Admin, Alum, Local Practitioners – RSDH Banquet Room
7:30pm Team Dinner – Greene 117
9:00pm Continued Review of Exhibits & records / Debriefing Session
Tuesday, March 23

8:00am  Team Breakfast w/ Program Heads – Hotel
         (D. Bell, UG Chair; T. Krueger, Grad Chair)

9:00am  Tour of Facilities – LRC/Lighting Research Center
         (Escorted by M. Figueiro to LRC)

10:00am Tour of Facilities - EMPAC/Experimental Media and Performing Arts Center
         (Escorted by M. Oatman)

11:00am Review of General Studies, Electives, Related Programs
         Observations of Lectures and Seminars
         Continued Review of Exhibits and Records

12:00pm Team Lunch with Undergraduate Student Representatives – Greene 117

1:00pm  Team Meeting with Graduate Student Representatives – Greene 117

1:30pm  Meeting with Staff – Greene 117

2:30pm  Complete Review of Exhibits and Records

5:00pm  Team Dinner – Team Room
         (E. Dougis, Dean)

7:00pm  Accreditation Deliberations and Drafting the VTR – Team Room

Wednesday, March 24

7:30am  Check out of Hotel

8:00am  Exit Meeting w/ Provost – Troy Building, 3rd Floor Conference Room

8:30am  Team Breakfast w/ Program Heads – Greene 117
         (D. Bell, UG Chair + T. Krueger, Grad Chair)

9:30am  Exit Meeting with College Administrators – Greene 117
         (E. Dougis, Dean; M. Mistur, Assoc. Dean)

10:00am School-wide Exit Meeting w/ All Faculty + Students – EMPAC Concert Hall
IV. Report Signatures

Respectfully submitted,

Linda Kisk, AIA, LEED® AP, NCARB
Team Chair
Representing the AIA

Daisy O'lice Williams
Team member
Representing the ACSA

Jeremy W. Rogers
Team member
Representing the AIAS

Norman L. Lach, CSI, CCS, AIA, ALA, FPCI
Team member
Representing the NCARB

Clark E. Llewellyn, AIA
Team member
Representing the ACSA

James H. Collins, Jr., AIA, LEED® AP
Observer
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