Annual Key Assessment Findings and Curricular Improvements
School of Architecture and Planning
B.S. Program in Architecture

Key Assessment Findings

Specialized Accreditation Data

Architectural Accreditation: The National Architectural Accreditation Board (NAAB) reviews the school every six years. The most recent site visit, in February 2009, resulted in renewal of full accreditation. Of the 34 academic criteria used by NAAB, the visiting team found that thirteen were "well met" (exceeded expectations) and only three were "not met", one of which was dropped as a criterion in the revised criteria approved in July 2009. This is an unusually favorable outcome.

Professional Licensure: A multi-day examination (the ARE) is required for professional licensure in architecture. Since most graduates do not take this examination for at least three years after graduation, and often longer, passage rates for alumni are not cited here.

Certification: A small number of students opt to take certification exams to become LEED® APs (LEED® Accredited Professionals) or CDTs (Certified Documents Technologists). The former is a program of the United States Green Building Council (USGBC) while the latter is conducted by the Construction Specifications Institute (CSI). Passage rates are quite high for those who take the exams.

Comprehensive Exams

The Comprehensive Building Design Studio (CBDS) and Supplement

The school conducts no comprehensive exams *per se*, but completion of CBDS is required.

In CBDS, students are tested on their mastery of subjects learned in their professional studies through performance designing a real project for a real client. The courses are organized in a way intended to simulate the work environment of architectural practitioners, and therefore comes with professional performance expectations. It functions as a capstone for the accredited program – the four-year B.S.Arch program and the first two years of the M.Arch3 program.

The studio focuses on a rigorous semester-long team project that requires development of urban design, architectural design, construction systems, environmental systems, structural systems, and building envelope for a project with a moderately complex program.

The studio component stresses collaboration among members of each student design team and with outside professional consultants. Client interaction is also stressed. Those role-playing the clients come in to discuss the project at the beginning of the semester and come to the major reviews to give student teams feedback.

The supplement course reviews a broad range of undergraduate material from prerequisite courses. For the first half of the course, a mix of faculty and local practitioners lecture on the various topics. In the second half, the practitioners serve as consultants to the individual student teams. At the end, they return to evaluate individual students through oral exams.

Team Project: The Building Design (Studio: Arch 402/503)
The project is completed in teams much like an architecture project would be completed in a professional environment. In Spring 2010, twenty eight teams, totaling one hundred and thirty one students participated (although two withdrew from the course). Twenty seven of the twenty eight teams met or exceeded expectations for performance on all assessment traits. One team fell below expectation in two traits: formal design and research. Feedback from professional jurors and faculty suggested that a third of the teams exceeded expectations on formal design and communication; assessment on the other two traits was more divided between exceeding and meeting expectation. No group fell short of expectation on communication.

Individual Project: The Detail Design (Studio: Arch 402/503)
In Spring 2010, one hundred and twenty nine students completed the design of a set of construction details. Although the building as a whole is designed in teams, each student is required to design, in detail, one part of the building from foundation to roof, from one column to the next, and from the exterior wall to about ten feet inside the building. This way they can demonstrate their understanding of construction, structural, and infrastructural systems, of the coordination of those systems, and of building envelope. While most students met the requirements, there were a few students that did not.

Individual Examinations (Supplement: Arch 407/518)
In Spring 2010, one hundred and twenty nine students completed the Comprehensive Oral exams. We did not conduct Written Defenses for the Comprehensive Studio Supplement this past year. However we did expand the oral defense to categories in conceptual and formal design, environmental sustainability and detailing. At the end of the studio, before the final presentation, professional consultants return to administer the oral defenses, one on one with individual students. They assess how much each student understands the various disciplines involved in the project design, as well as the comprehensive whole. Given the results, the students need to improve in understanding in mechanical, plumbing, and electrical systems and in detailing, once again. There was an improvement from last year in the understanding of the design of MEP systems, however there is room for more improvement.

Comprehensive Building Design Studio								
	Exceeded Expectations (3 pts)		**Fully Met Expectations (2 pts)**		**Partly Met Expectations (1 pt)**		***Mean*[1]**	***SD*[2]**
Team Project: Building[3]								
Formal Design	8	29%	18	64%	2	7%	3.36	0.34
Research	4	14%	22	79%	2	7%	3.24	0.30
Technical Design	3	11%	24	86%	1	4%	3.27	0.29
Communication	9	32%	19	68%	0	0%	3.48	0.28

Individual Project: Details								
1/4" Bay and Envelope Model; 3-D Assembly Drawing; Wall and Building Bay Section	55	43%	71	55%	3	2%	3.4	0.43
Individual Exam[3]								
Conceptual and Formal Design	66	51%	59	46%	4	3%	3.38	0.54
Environmental Sustainability	54	42%	36	28%	5	4%	3.37	0.44
Structural Systems: Orals	76	59%	17	13%	2	2%	3.52	0.53
MEP[4] Systems: Orals	26	20%	60	47%	9	7%	3.19	0.61
Detailing	51	40%	31	24%	13	10%	3.21	0.72

Notes:
1) The mean is the average of all scores across the levels within the trait.
2) The standard deviation (SD) is a measure of the variability of the data set, indicating how "spread out" these data are from the mean value.
3) The total number of projects assessed was 28; the total number of individuals assessed was 129
4) Mechanical, Electrical, and Plumbing Systems

Curricular Improvements

Recent improvements to the CBDS program

Evaluation of student work: In recent years, an extensive grading spreadsheet has been developed and used to raise consistency in evaluations. In addition, we started soliciting self-assessment comments from individual students about their own work and that of their team and their team mates. The comments, with the writer's identity redacted, have been shared with all team members. Anecdotal evidence suggests that both innovations have raised communications and helped raise the quality of individual and team work. In addition, this year, adding more oral defenses was crucial to adequately assessing the student's knowledge in key areas of competency.

Scope and complexity of projects: As mentioned in the last assessment, finding ideal projects and fitting them to the CBDS pedagogy remains an important part of planning the course. This past year, the project was very small, just a few rooms. Many of the students and faculty felt the program and complexity was too limited. We continue to strive for the ideal project size, however as is the case for real projects, there is never an ideal.

Future planned improvements

Enforcement of prerequisites: We have undergone curriculum changes to ensure that pre-requisite classes are complete before students get to the Comprehensive Studio. It remains to be seen how these changes will play out.

Revision of the technical design curriculum: For many years, pre-design assessment, construction assemblies and materials, and digital documentation have been taught in two four-credit courses and one three-credit course. The faculty agreed to expand these courses while standardizing them to three-credit formats. In the new curriculum, pre-design is reduced to three-

credits (ARPL 221), but construction assemblies and materials each get a separate three-credit course (ARPL 333 and 434) and digital documentation has been expanded to a three-credit sophomore course (ARPL 201 in which students learn to draw, model, and animate their design work, and a three-credit senior course (ARPL 421) in which students learn to go beyond digital design documentation to being able to manage their design work through Building Information Modeling. The two-credits for the expansion of construction assemblies and materials came from eliminating the three-credit Design Thinking (ARCH 216), while the sophomore digital documentation course (ARPL 201) replaces a previous three-credit sophomore introductory studio (ARCH 201). Given the continuing strength of the conceptual design curriculum and the fact that research and technical design fell short in the assessments, we hope the new structure will help students gain the knowledge they need before the capstone studio.

Mixed teams (of graduates and undergraduates): Graduate students in the M.Arch3 program this past year were not mixed with undergraduate students in the B.S.Arch/M.Arch2 program, as in past years. There seemed to be much less friction in the groups because of this, although innovation in the graduate groups was more limited.

Team Building Exercises: This past year, we also did extensive team building exercises in the studio and supplement, which greatly reduced friction among team members. We will continue to build on the team building exercises in lectures and workshops as we did this past year so friction is once again reduced and students learn how to deal professionally with conflict.