University of California at Berkeley
Department of Architecture

Visiting Team Report

Master of Architecture

Track I: (pre-professional undergraduate degree (*120* undergraduate credit hours) plus *48* graduate credit hours)

Track II: (non-architectural undergraduate degree plus 72 graduate credit hours)

The National Architectural Accrediting Board
21 April 2010

Table of Contents

This page is left blank intentionally.

I.   Summary of Team Findings

1.   Team Comments

The team thanks the Department of Architecture and the College of Environmental Design for their hospitality, cooperation and interaction provided by the college's administration, faculty, staff and students.

There is excitement in the air at UC Berkeley's department of architecture. Within the past year the college has brought on a new dean and is in the process of finalizing the hiring of a new chair for the department of architecture. The administration and faculty, under the leadership of its interim chair, have done an admirable job in creating this positively charged atmosphere.

While there are a number of faculty openings due to a hiring freeze, the faculty appears united in their optimisn that the new chair will bring positive outside leadership. In discussions with the provost and vice-provost, we have been led to believe that the university (and the department) will be adding faculty over the next two years. The department has a critical need for adding one faculty member in sustainable design, which is its top priority.

The uniqueness of the program is evident in the broad variety of exceptional courses offered to students as electivies. While not part of our evaluation, the learning experience gained in these courses can be found in many of the program's core requirements. Examples of these electives include ARCH 249 –high performance facades, and ARCH 249x- green studio companion.

It was well evident that students are engaged. The studios displayed a vitality (due in part to the semester ending shortly) as students worked collaboratively to finalize their team projects. Studio assignments appeared to be challenging, requiring a great deal of critical thinking and research skill, basic requirement for future leaders.

Significant opportunity exists within and outside the college for collaboration that could greatly enhance current learning efforts. Observations of student and faculty in the studio environment demonstrated positive examples of successful collaboration among students. The college is undertaking aggressive interdisciplinary collaborative initiatives in the near future that show much potential to take advantage of the rich knowledge resources of the University.

Students are well aware of their own impact on the environment, in particular water use and energy use, through the technological advances in the monitoring devices established throughout Wurster Hall.

2.   Progress Since the Previous Site Visit

Criterion 12.14, Accessibility (2003): Ability to *design both site and building to accommodate individuals with varying physical abilities*

Previous Team Report (2003): The visiting team was not able to find consistent evidence to demonstrate each student has the ability <u>or</u> understanding to accommodate individuals with varying physical abilities.

> **2010 Visiting Team Assessment:** Criterion 12.14, Accessibility is now met. The visiting team found evidence of the students' understanding of, and ability to accommodate individuals with varying physical abilities in the comprehensive design studios.

Criteiron 12.19, Life-Safely Systems (2003): Understanding of *the basic principles that inform the design and selection of life-safety systems in buildings and their subsystems*

Previous Team Report (2003): The visiting team was not able to find consistent evidence to demonstrate each student has the understanding of the basic principles that inform the design and selection of life-safety systems.

> **2010 Visiting Team Assessment:** Criterion 3.13.20, Life Safety Systems: Understanding of the basic principles of life-safety systems with an emphasis on egress is now MET.

Criterion 12.21, Building Service Systems (2003): Understanding of *the basic principles that inform the design of building service systems, including plumbing, electrical, vertical transportation, communication, security, and fire protection systems*

Previous Team Report (2003): The visiting team was not able to find evidence that all students are provided an opportunity to obtain an understanding of the principles of vertical transportation, plumbing, communication, security, and fire protection systems.

> **2010 Visiting Team Assessment:** Criterion 13.22, Building Service Systems remains UNMET. The visiting team was not able to find evidence that all students are provided an opportunity to obtain an understanding of the principles of vertical transportation, plumbing, communication, security, and fire protection systems.

Criterion 12.22, Building Systems Integration (2003): Ability to *assess, select, and integrate structural systems, environmental systems, life-safety systems, building envelope systems, and building service systems into building design*

Previous Team Report (2003): While course work was able to demonstrate students' understanding and ability regarding structural, environmental and exemplary building envelope systems, the visiting team was not able to find consistent evidence of the students' ability to integrate building service systems into building design.

> **2010 Visiting Team Assessment:** Criterion 13.23, Building Systems Integration: Ability to assess, select, and conceptually integrate structural systems, building envelope systems, life-safety systems, and building service systems into building design remains UNMET. While there is clear evidence of ability to integrate structural, and envelope systems into design solutions, life-safety, environmental and some building service systems were not evident in the student work.

Criterion 12.24, Building Code Compliance (2003): Understanding of *the codes, regulations, and standards applicable to a given site and building design, including occupancy classifications, allowable building heights and areas, allowable construction types, separation requirements, means of egress, fire protection, and structure*

Previous Team Report (2003): The visiting team was not able to find consistent evidence of student understanding of building code compliance.

> **2010 Visiting Team Assessment:** This criterion has been removed from the NAAB SPC as a separate item and incorporated into other criteria so is now MET.

Criterion 12.29, Comprehensive Design (2003): Ability to *produce an architecture project informed by a comprehensive program, from schematic design through the detailed development of programmatic spaces, structural and environmental systems, life-safety provisions, wall sections, and building assemblies, as may be appropriate; and to assess the completed project with respect to the program's design criteria*

Previous Team Report (2003): The nature of the Berkeley architecture program provides faculty and students rich opportunities to investigate and explore rich and individual interests in research, theory and design. Flexibility to pursue individual interests is reinforced by a combination of vertical studios and the opportunity to investigate a theoretical thesis topic. The visiting team was not able to find consistent evidence that all students have the ability to produce a comprehensive architecture design project.

> **2010 Visiting Team Assessment:** Criterion 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 remains UNMET. While there is clear evidence of ability in comprehensive design in some student work, it was not consistently demonstrated.

> Beginning in the fall 2010 semester, the comprehensive design studio (Arch 201) will be compulsory for all first semester MArch students. The syllabus of the course, to be taught in three or four studios, indicates that all students will be able to produce an architectural project meeting the requirements of this criterion.

Causes of Concern taken from VTR dated October 8, 2003:

- There is without a doubt a great richness in the opportunities that students have to build their own curriculum based on a wide range of course offerings and research topics offered by the faculty, however the opportunity would benefit from more structure to assure compliance with the NAAB Performance Criteria.

> **2010 Visiting Team Assessment:** This is no longer a Cause of Concern. Structure has been added. Students as well as faculty use a checklist to assure that all NAAB Student Performance Criteria are met through courses taken by each student before graduation.

- The College of Environmental Design and the Campus Facilities Department continue to miss the chance to benefit from a closer relationship during a very active campus redevelopment program.

> **2010 Visiting Team Assessment:** This is no longer a Cause of Concern. Actions have been taken to build educational relationships between CED and Facilities. Significant cutbacks in financial resources make this connection less beneficial than has been the case in more robust economic times.

- While students are exposed to the different disciplines within the college through course offerings and research of the faculty, the team did not see evidence that program was taking advantage of a formal relationship between itself and the other two departments in the college.

2010 Visiting Team Assessment: This is no longer a Cause of Concern. Several examples of inter-departmental collaboration have been demonstrated in recent years. Expanding these opportunities has been described as a priority of the new Dean of CED.

- There does not seem to be in place the necessary Information Technology support in the studio or to support the newly acquired digital equipment for the shop or to support the future strategic vision of the program.

    2010 Visiting Team Assessment: This is no longer a Cause of Concern. Changes in technology have resulted in a move away from department provided computers to the use of student lap-top computers. There is software and system support and peripherals are provided in each studio. Economic conditions have made these services less than robust but the program is commended for responding successfully to student needs even under tight budgetary constraints.

- Based on the evidence presented in the Team Room there is an inconsistency in meeting the NAAB requirement for the comprehensive design.

    2010 Visiting Team Assessment: This is removed as a Cause of Concern as it is addressed in Conditions Not Met.

3.   Conditions Well Met
   6.   Human Resources
   9.   Information Resources
   13.4   Research Skills
   13.11   Use of Precedents
   13.19   Environmental Systems
   13.21   Building Envelope Systems

4.   Conditions Not Met
   3.   Public Information
   13.16   Program Preparation
   13.22   Building Service Systems
   13.23   Building Systems Integration
   13.25   Construction Cost Control
   13.28   Comprehensive Design

5.   Causes of Concern

   A. Practice-Related Criteria: Student Performance Criteria numbers 29-34 rely heavily on Arch 207: Introduction to Methods & Conventions of Practice and, for the past two years since Arch 120 ceased being offered, Arch 208: Introduction to Construction Law, which historically was an elective. The depth with which these two courses treat the subjects appears to vary, with the prior offering just a single hour or less on a given subject. Thus, they are not equal. The addition of Arch 207 into the curriculum is commendable, but needs to be expanded in order to more convincingly satisfy the multiple practice-related Student Performance Criteria that it seeks to address.

B. Life Safety: Increased efforts need to be made to integrate exiting related life safety issues into coursework that is clearly provided to all students

C. Studio Culture: Though there is a clear and positive culture within the student body, there is concern that the Studio Culture policy was developed and implemented by the faculty in a top down approach, rather than taken on as a student initiative from the bottom up. As the studio culture policy is noted as a living document, its maintenance by the student body remains a critical component to its eventual success within the walls of Wurster Hall.

D. Freehand Drawing: There is a concern that as the technology tools continue to become more advanced, and an even more common tool within the design profession, that the evidence and importance of freehand drawing as part of the design process will further be dismissed within the curriculum.

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.*

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.

Met	Not Met
[X]	[ ]

There is a mutual respect of students and faculty, as the two parties consider themselves as peers to one another. The faculty admires the leadership qualities that exist within the student body, and in general the team observations support these claims. The college has funding available for new student groups to begin; however, there is no long-standing student leadership organization specifically for the MArch students.

At the college level, there appears to be greater student leadership, reaching across disciplinary boundaries. Jennifer Wolch, the new dean, is seeking to further support the student involvement both at the college and university level.

Though some of the Option 2 students were members of the AIAS during undergraduate years, there are no (zero) MArch students who are currently members of the AIAS chapter, as it is seen as a solely undergraduate student organization.

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.

Met	Not Met
[X]	[ ]

Student leadership was confirmed in our discussion with students throughout our visit.

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.

	Met	Not Met
	[X]	[ ]

Students are aware of the requirements of licensure, and the need for the accredited degree as a requirement for licensure in most states. Data in the APR indicates relatively high pass rates on the AREcompared to national statistics.

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.

	Met	Not Met
	[X]	[ ]

Engagement of the profession with the program is rich and diverse. Many of the faculty members are also engaged in practice, so bring the perspective of the practitioner to their educational endeavours. Several continuing lecturers come from practice. Endowments bring nationally and internationally recognized practitioners into the studio for semester-long commitments. Practitioners are brought in for studio reviews as well as thesis review and speakers in several classes. The college's and program's lecture series brings a diverse cross-section of leaders within or associated with the profession to the students, faculty and public. Members of AIA SF and AIA East Bay periodically have mentoring relationships with students.

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.

	Met	Not Met
	[X]	[ ]

Coursework, faculty research, and independent thesis pursuits as well as both departmental and college-level initiatives demonstrate a firm commitment to environmental and social sustainability. These efforts could be further strengthened by additional engagements with other departments within and outside of the college.

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.

	Met	Not Met
	[X]	[ ]

Self-Assessment occurs at many levels within the university, college and department. It seems however that the assessment events are primarily driven from outside rather than being driven internally by the unique needs of the program. Internal efforts at self-assessment appear more *ad hoc* than proactive. The mission of the program might be expected to drive a strategic plan, the details of which would influence the shorter term objectives guiding refinements of actions emerging each semester. Yet clarity in the understanding and pursuit of the programs mission was not strongly evident. Measurement of incremental progress is not clearly articulated, yet the overall success of the program outcomes cannot be denied. The strategic vision for the College of Environmental Design is emerging as an inspiring motivator for future accomplishment under the new dean who began her role last July 2009. It is likely that the arrival of the new architecture department chair in mid 2010 will provide an opportune time for defining and articulating clarity between the school's mission and the strategy for advancing that mission in the future.

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*.*

	Met	Not Met
	[ ]	[X]

As of this review, the language from NAAB 2004 Conditions – Appendix A has not been revised in the General Catelog.

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.

	Met	Not Met
	[X]	[ ]

The administration continues to make efforts to expand diversity within the constraints of Calfiornia law, and with the competitive environment for a limited number of candidates. Recent faculty hires attest to the department's successful efforts. In addition, over one-third of the faculty is female.

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.

	Met	Not Met
	[X]	[ ]

Through observation and discussion within the studio environment it is clear that the faculty and students have a very informal and proactive means of mutual respect for each other's work and time. The students collaborate on projects (both formally, and informally), and share particular skill sets with each other through the nature of the studio environment. The student body has little animosity and competition towards one another's work, which helps in creating a positive work environment for all parties.

However, though there has been an effort made by some, both students and faculty show inconsistent and inadequate time management skills. Furthermore, even though there is a Wurster Pledge that is signed by all students in Wurster Hall, the students lack proper studio etiquette and respect for the physical resources.

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.

	Met	Not Met
	[X]	[ ]

The new dean of the College of Environmental Design is committed to the advancement of the college and the Department of Architecture. Faculty and students indicated that since her appointment in July, several program enhancements were implemented. A new external department chair has been identified and is awaiting university approval to start in September. This has been met with faculty anticipation and excitement.

Currently an interim chair, Gail Brager, is completing her one-year term and is responsible for assigning teaching loads, reviewing sabbatical/leave requests and assigning committee service. Under her leadership it seems that the collegiality among the faculty has improved. The interim department chair and the M. ARCH chair lead the department efforts in admissions and student advising on degree plans.   A student services advisor is responsible for recruiting and is dedicated to support the M. ARCH students with all non-degree issues.

Faculty teaching loads are two courses per semester, though it may be usual to find faculty teaching three design studios per year on a regular basis. Depending on student population demands, a number of courses require multiple instructors. There is a concern that no teaching credit is given for supervising independent study, M. Arch thesis and MS/PhD advising. Faculty may be granted a reduced teaching load if they teach two large classes with an intensive lecturing load, or lead multiple-section undergraduate studios.

Currently, the Department of Architecture is seeking one new faculty position with specialization in sustainability, energy and the environment, who can also teach in design. This is clearly an area of great interest to the students and it has not been taught by the same person semester-to-semester since the most senior faculty in this area retired in 2004.

Despite the budget challenges that UC Berkeley is facing and the reduction of staff, the Department of Architecture has adequate support staff positions to sustain the needs of administrators, students and faculty. These positions are: audio visual and classroom support; student services advisor; customer service support analyst; department manager for finance; electronic communication specialist; academic personnel analyst and shop manager. Also the department shares a web manager and a facility manager with the college. Additionally, the college is in the process of hiring a CAD lab specialist.

The team found that the student body contains remarkably high achievers who have been recognized for their scholarly pursuits and accomplishments.

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.

Met	Not Met
[X]	[ ]

The Department of Architecture benefits greatly from the extensive campus policies established through the University Human Resources Center. Faculty promotions have been uniformly successful. Faculty performance evaluation process is in place and faculty performances are reviewed every three years. Faculty members receive funds to travel and present papers at conferences. They have good support from outside the department to pursue their scholarly works and travel. Because it is a research based university, it is inherent in their work to fulfill funding for this endeavor.

There is a great opportunity for student scholarships, though they may be under-utilized. Generous endowments have been established and money and support are set aside to allow respected professionals to visit the campus to give lectures and participate as studio critics. The team applauds the strong administration and faculty support for and facilitation of student travel abroad. The learning opportunities for studio options are tremendous. Good funding resources are and continue to be made available for this part of the program that is truly valued.

There are no internship programs available to students through the department, but the students have not asked for help getting placed in offices. Student access to professional societies such as AIAS is available but not utilized in the graduate program as much as in the undergraduate.

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.

	Met	Not Met
	[X]	[ ]

The visiting team found adequate physical resources for students, including design studio space for each student.   A computer lab, devoted to the architectural department had over 24 workstations as well as two plotters and other printing equipment. Shop areas for CNC and laser cutting, wood and metal working areas were sufficient, and had state of the art equipment. The college's library facility is centrally located within the college. Faculty offices for full and part-time faculty were observed. The department's research laboratories were impressive, and reflect the university's leadership role in architectural research.

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.

	Met	Not Met
	[X]	[ ]

The information resources of the program's environmental design library, archives and visual resources center are clearly one of the most extensive in the nation with collections that provide enviable resources to the students.

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.

	Met	Not Met
	[X]	[ ]

California, like many states, has undergone great financial stress. This has resulted in significant reductions to state funding at UC Berkeley. In order to make up for the difference, UC Berkely

has made a conscious effort to increase the number of out-of-state students to increase its tuition revenues. Over the past four years out-of-state student population has increased from about 10% to over 20%. The M.Arch student population is predominately made up of out-of-state applicants. After admission to the program, those students can become residents after one year of residency in California.

The university has also encouraged cost savings that will help offset the reduction in state aid. Discussions witht the provost indicate that over the next two years the university will add up to 90 new faculty positions, even though the total faculty may decrease slightly. The university has made a major commitment to the new dean of the CED to fund not only a new department chair, but to add critical staff. The team believes that the architecture program will be adequately funded.

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.

Met   Not Met
[X]   [ ]

The department is a critical part of the college of environmental design. The interim department chair has done an excellent job throughout the recent period of the chair search. The new dean has been on board for about one year, and is very supportive of the department, which have full access to her.   The department is well run, and its staff are to be complimented for their efforts to support of the program.

The search for a new chair has been completed, and is expected to be on board by fall 2010. Faculty and administration appear genuinely supportive of the new chair.

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.

Met   Not Met
[X]   [ ]

The department, and university as a whole, prides itself for providing a flexible curriculum with multiple paths towards completion. When initially enrolled, the students are presented with a checklist stating the list of courses required for graduation. These courses are broken into sub-areas, where the student (with faculty advising) has the choice to select the sequencing of their own personal curriculum.

The department offers a great variety of interesting and well sought after electives. Students are also able to take elective classes in other departments within the college as well the larger university setting.

The department faculty expects to implement a slightly more rigid sequence in the coming year, in particular where all students will be required to take the Comprehensive Design Studio during the fall semester (Option 2 – studio 1 of 4, Option 3 – studio 3 of 6), which is currently in the process of integrating the Pro-Practice course, and an additional Structures course. This mandatory sequencing is believed to help address missing educational components that are currently part of the curriculm.

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*

| Met | Not Met |
| [X] | [ ] |

This criterion is met as demonstrated through observations of students in discussion within the studio environment, numerous course papers, and work presented through the thesis work presented in ARCH 204, and ARCH 205.

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*

| Met | Not Met |
| [X] | [ ] |

This criterion is met as evidenced by student work in many courses including ARCH 201, ARCH 203, ARCH 204 and ARCH 205.

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*

| Met | Not Met |
| [X] | [ ] |

The student work exhibited from ARCH 201 and ARCH 204 demostrates use of both digital and physical drawing and models. The college's facilities and equipment support the opportunity for students to experiment with different types of model making materials. As observed in the studio environment, the students consistently demonstrate the use of

a variety of representation techniques, including freehand drawing, throughout the entire design process.

13.4 Research Skills

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

	Met	Not Met
	[X]	[ ]

This criterion is clearly met as evidenced by student work in ARCH 140, ARCH 203, ARCH 204, and ARCH 205. Research skills are a valued asset of the program and intricately linked throughout the intire curriculum.

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*

	Met	Not Met
	[X]	[ ]

A series of graphic presentation exercises in ARCH 201 studio introduce students to an understanding of principles and systems of order that inform two and three-dimensional design, architectural composition, and urban design.

13.6 Fundamental Skills

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

	Met	Not Met
	[X]	[ ]

This criterion is met by the students in ARCH 200A, 200B and 201 studios, who use several effective ways of conveying ideas, concepts, and designs through use of digital media, and physical models.

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*

	Met	Not Met
	[X]	[ ]

Team-based exercises in studios and courses engaging collaborative efforts of two to four individuals with coaching from Graduate Student Instructors are evident. These teams are however not typically interdisciplinary.

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*

	Met	Not Met
	[X]	[ ]

This criterion is met as evidenced by student work in ARCH 170A and 170B.

13.9   Non-Western Traditions

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

	Met	Not Met
	[X]	[ ]

This criterion is met as evidenced by student work in ARCH 170A and 170B.

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*

	Met	Not Met
	[X]	[ ]

This criterion is met as evidenced by student work in ARCH 170A and 170B. It is also supported by student exhibits in ARCH 140.

13.11   Use of Precedents

Ability to *incorporate relevant precedents into architecture and urban design projects*

	Met	Not Met
	[X]	[ ]

Studio projects and the thesis work clearly demonstrate the use of relevant precedents. Diagramming and analysis of these precedents lead to the conceptual ideas that continue through into the design work.

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*

	Met	Not Met
	[X]	[ ]

Evidence of meeting this criterion is presented in several courses in the sub-areas of Theories and Methods and in History**.**

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*

	Met	Not Met
	[X]	[ ]

Students' understanding of human diversity is found in the sub-areas of Theories and Methods and in History. Such as in the coursework of ARCH 111 – Housing an International Survey, ARCH 211 – Theory and Methods in the Social Basis of Design and ARCH 218 - Housing Urbanization and Urbanism in Developing Countries.

13.14   Accessibility

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

	Met	Not Met
	[X]	[ ]

Evidence of the students' ability to accommodate individuals with varying physical disabilities was found in the comprehensive design studios, ARCH 201.

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*

	Met	Not Met
	[X]	[ ]

This criterion is met as evidenced by student work in ARCH 140.

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*

	Met	Not Met
	[ ]	[X]

Evidence of ability in programming was found in several instances, but was not consistently observed for all students.

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*

	Met	Not Met
	[X]	[ ]

This criterion was found to be met in the design sections as well as in thesis projects.

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*

	Met	Not Met
	[X]	[ ]

This criterion is met as evidenced by student work in ARCH 150 and ARCH 260.

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*

	Met	Not Met
	[X]	[ ]

This criterion is met as evidenced by student work in ARCH 140.

13.20 Life-Safety

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

	Met	Not Met
	[X]	[ ]

This criterion is addressed for structural life safety issues of wind, seismic and live/dead loading as evidenced by student work in ARCH 150. Life safety issues involving exiting and fire safety are less evident but apparent in some sections of studio work ARCH 201. Sensativity to lifesafety concerns was observed within the studio visits.

13.21 Building Envelope Systems

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

	Met	Not Met
	[X]	[ ]

This criterion is met as evidenced by student work in ARCH 140.

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*

Met   Not Met
[ ]   [X]

Understanding of building service systems was not consistently observed in student work.   Awareness of building service systems was observed in the studio visits.

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*

Met   Not Met
[ ]   [X]

While there is some evidence of the students understanding of structural and building envelope systems, there is insufficient evidence of the student's abilitiy to integrate these systems. The team did not find consistent evidence of the ability to assess and integrate building service systems.

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*

Met   Not Met
[X]   [ ]

Understanding of building materials and assemblies is demonstrated in ARCH 260 – Introduction to Construction, through research paper assignments, quizzes, tests and final reports. It is also evident in students design projects ARCH 201 – Comprehensive Design Studio, where they explore architectural expression as well as constructional sufficiency in their material and assembly proposals.

13.25   Construction Cost Control

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

Met   Not Met
[ ]   [X]

The team was unable to find sufficient evidence of building cost, life-cycle cost or construction estimating prepared by students.

13.26   Technical Documentation

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

	Met	Not Met
	[X]	[ ]

Evidence of the ability to make technically precise drawings was found in the comprehensive design studios (arch 201), as well as throughout other specialized coursework.

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*

	Met	Not Met
	[X]	[ ]

This criterion is met by syllabi for ARCH 207 and ARCH 208, and confirmed through discussions with students.

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*

	Met	Not Met
	[ ]	[X]

While abiliity is demonstrated as evidenced by student work in some sections of of the comprehensive design studio, ARCH 201, it is lacking in other sections.

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*

	Met	Not Met
	[X]	[ ]

This understanding is met through Arch 208, which has historically been an elective, but covered in significantly less depth in Arch 207.

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

	Met	Not Met
	[X]	[ ]

This understanding is met through Arch 208, which has historically been an elective, but covered in significantly less depth in Arch 207.

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*

	Met	Not Met
	[X]	[ ]

Students appear to understand the role of internship as well as the requirements for licensure in the state of California and interstate reciprocity. The recent appointment of an IDP Educator Coordinator should further solidify this understanding.

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*

	Met	Not Met
	[X]	[ ]

This understanding is apparent and implied through coursework as well as visiting lecturers and class speakers, starting early in the program and progressing through students' independent theses.

13.33 Legal Responsibilties

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*

	Met	Not Met
	[X]	[ ]

This understanding is met through Arch 208, which has historically been an elective, but covered in significantly less depth in Arch 207.

13.34 Ethics and Professional Judgment

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

	Met	Not Met
	[X]	[ ]

This understanding is evident in a variety of classes dealing not only with architectural design and practice, but also environmental and social sustainability.

This page is left blank intentionally.

III.   Appendices

Appendix A: Program Information

    1.   History and Description of the Institution

The following text is taken from the 2010 University of California at Berkeley Architecture Program Report.

Our institution was established in 1869. As the oldest and the largest campus in the University of California system, we are considered its flagship. The University of California Berkeley is a state-chartered and partially state-supported institution. At the time of this writing, the President of the ten-campus University of California system is Mark G. Yudof, who is directly answerable to a 26-member Board of Regents appointed by our Governor, Arnold *Schwarzenegger.* The Chancellor of our campus is Robert J. Birgeneau. The Executive Vice Chancellor and Provost is George W. Breslauer.

The many and varied California public institutions of higher learning, which include all the campuses in the University of California system, 23 campuses in the California State University system and 110 community colleges, are organized under a structure set forth in the State of California's Master Plan for Higher Education from 1960 – nearly half a century ago – which identified differing functions for each tier in the system. The University of California was charged with emphasizing graduate and professional education and given the sole authority to award doctoral degrees. In the Fall of 2008 (the most recent semester for which we have statistics), there were slightly more than 35,000 students studying at UC Berkeley. Greater than 10,000 graduate students are on our campus on a typical semester. In the 2007-2008 academic year, UC Berkeley awarded 6,960 Bachelor's degrees; 2,406 Master's degrees; and 865 Doctorates and PhDs. UC Berkeley awards more Ph.D.s annually than any other university in the United States.

Our students benefit from their access to internationally-renowned faculty throughout the campus, in disciplines such as engineering, business, law, environmental economics and policy, and art history, but also in less obvious areas like Chinese language, and "Peace and Conflict Resolution." The 2,131 faculty on our campus are organized into more than 130 academic departments and over 80 interdisciplinary research units. UC Berkeley ranks first nationally in the number of graduate programs in the top ten in their fields, according to the most recent National Research Council study. In the study, 35 of Berkeley's 36 graduate programs ranked in the top ten in their fields in terms of faculty competence and achievement; a third are ranked in the top five. These statistics are evidence of Berkeley's extraordinary "breadth and depth".

There are also eight museums and a multitude of field stations supporting research efforts. Faculty appointments often overlap, individuals associated with multiple complementary components of the campus. Cutting-edge theoretical developments at the Earthquake Engineering Research Center, the U.S. Department of Energy's Lawrence Berkeley National Laboratories (managed by our university), the Center for the Built Environment, the Doreen B. Townsend Center for the Humanities, and numerous other research centers influence our daily discourse.

We are a wellspring of innovation. In 2006, the UC system as a whole, for example, accounted for a total of 410 patents – followed by MIT with 139, California Institute of Technology ("CalTech") with 115, the University of Texas with 107, 101 to the Wisconsin Alumni Research Foundation, and Stanford with 98. Twenty-one Nobel Prize Laureates have taught on our campus since 1901, when it was first awarded; eight Nobel Laureates are still actively associated with Berkeley, including Steven Chu, the current U.S.

Secretary of Energy and 2009 Laureate Professor Emeritus Oliver E. Williamson. Three hundred and fifty nine faculty have received Guggenheim Fellowships and seventy-four have been Fulbright Scholars; members of our department have received both of these two prestigious awards in the last decade.

We have a tradition not only of innovation, but also of embracing unconventional ideas that ultimately influence the nation and the world. In 1887, faculty on our campus set up the Western Hemisphere's first string of seismographical stations, at a time when scientific understanding of earth movement was still ultimately influenced the development of a National Parks system. Those antecedents of scientific innovation and influence on public policy and popular opinion are still seen today across our campus. Our campus also has a tradition of advocacy. Berkeley ranks first in the nation in alumni who have served in the Peace Corps.

- "A deep interest in social welfare drives the pioneering research of Nobel Laureate Daniel McFadden. McFadden ushered Berkeley's Nobel tradition into the 21st century when his econometric methods for studying behavioral patterns in individual decision-making were recognized. Applications of McFadden's statistical tools include predicting the BART's [Bay Area Rapid Transit's] initial ridership and measuring the economic damage to individuals from an oil spill."

- Professor Kris Pister of the Robotic Lab "…has taken the theory of microscopic wireless sensors and made it a tiny reality with vast potential. He has figured out how to build millimeter-sized computers that can detect anything from light and heat to temperature and vibrations, and send that information on. The sensors—collectively, "smart dust"—have endless potential. They could monitor the humidity and temperature … of each individual office in a 50-story building, increasing comfort and saving power."

- "Thanks to Associate Professor of Chemistry Peidong Yang, we may soon channel sunlight to power everything from houses to laptops. The technology is solar paint, an external coating made from layers of nanoparticle solar cells."

- Berkeley's Active Tectonics Research Group is developing a technique, the Interferomic Synthetic Aperture Radar, which they hope will reliably predict earthquakes.

- "Bozidar Stojadinovic, Associate Professor of Civil and Environmental Engineering, is working on a computer system that can collect sensor readings from a building after an earthquake, analyze them, and provide an overview of the building's structural state."

The university has long encouraged scholarship regardless of our students' wherewithal; as early as 1897, financial aid was available for the 'needy and deserving.' More than a century later, UC Berkeley remains committed to broad access for students from all strata of society — educating more federal Pell Grant recipients, who come from low-income families, than all eight Ivy League universities combined. Nearly one third of our students receive Pell Grants; our impact on upward social mobility (and its benefits to society as a whole) was a reason that the 2009 *Washington Monthly College Guide* ranked UC Berkeley first in the nation, above any other universities, private or public – followed by two other UC campuses. You can see the Times scores at: *http://www.timeshighereducation.co.uk/Rankings2009-Top200.htm*]

Out of step with the era of our founding, women were admitted to our university without restriction or quota from its earliest years. One of those early women, Lillian Moller Gilbreth, received her B.A. from UC Berkeley in 1900 and an M.A. in 1902. A pioneer in the field of motion studies – and using language no longer acceptable today – Gilbreth was also an early advocate for accessibility, authoring *Motion Study for the Handicapped*

and "Putting the Cripple on the Payroll." The International House, opened in 1930, was the first co-ed, interracial college residence west of the Mississippi River. A 1996 ballot measure prohibited our university from considering race in admissions, causing a radical transformation in the character of our campus. By 2008, 40.8 percent of all students on our campus were Asian Americans, now our largest ethnic group, followed by whites at 40 percent. (Asians as a whole make up 46 percent of the campus population.) Many of our students are first- or second-generation immigrants. Our unusually diverse undergraduates go on to contribute significantly to the diversity of professional graduate schools throughout the nation.

As a university, we endeavor – first and foremost – to educate the students of our state; undergraduate enrollment of out-of-state and international students has until recently been limited to only ten percent of the population. This will most likely increase in the years ahead as we move, inevitably, to a hybrid model with greater reliance on private, out-of-state sources of support to compensate for declining state funding.

Already today, California hosts more international students than any other state; architecture is one of the top five majors for undergraduates from abroad on our campus, though the official statistics for international students (which do not include our many students whose families have immigrated to the U.S.) are small.

Our graduate and professional schools already play a proportionally high role in educating the world, with 18 percent of graduate students on the UC Berkeley campus from outside the U.S. The greatest number of international students seeking degrees come from the Asian continent: South Korea, China, and India – followed in numerical rankings by Canada to the north and then back to Asia: Taiwan, Japan, Singapore, Hong Kong, and Indonesia.

RECENT ECONOMIC CHANGES
Today, we find ourselves in the midst of an economic transition of historic consequence. Because of the ongoing financial crises in State funding over the last 20 years, the Campus has had no alternative but to transition, reluctantly, from a largely (85%) publically funded institution to an increasingly private, hybrid financial model. During this period, State support has fallen from (85%) of the annual budget in (1990) to (23%) in 2009/10 with an additional 20-25% cut in State funding anticipated for fiscal 2010/11.

The Campus has responded vigorously to this challenge through an aggressive fundraising campaign for endowed chairs and student support. The total Campus endowment has grown from ($133m) in 1990 to ($561m) in 2009. Unfortunately, the Campus has also had to raise student fees from ($2,400) per year in 1990 to ($7,000) in 2009/10 in order to maintain excellence. While the proportion of State support has dropped precipitously, it is still a significant component in the campus budget; thus, reductions in State funding have a real impact on staff support, operating budgets and academic planning.

The recent cycle of budget cuts has been particularly severe, forcing staff layoffs, program consolidation and efficiencies, faculty salary cuts by furlough (averaging 8%), a slower rate of faculty replacement and the highest increase in student fees (30%) approved for next year.

In spite of these hardships, the faculty and Campus have responded creatively by focusing on our core mission, rethinking teaching loads, rallying alumni support and fundraising, instituting Professional Differential Fees for appropriate Professional Schools and seeking additional forms of income aligned with our programs' goals. UC Berkeley is a jewel in the crown of public higher education. We, as educators and innovators, are

committed to maintaining and enhancing its excellence – as demanding as the current situation may be.

2.   **Institutional Mission**

The following text is taken from the 2010 University of California at Berkeley Architecture Program Report*.*

The University's fundamental missions are teaching, research and public service, but at UC Berkeley there is a remarkable tradition of using these fundamental modes of inquiry to tackle the biggest challenges facing society with new knowledge and innovation.

WE TEACH - educating students at all levels, from undergraduate to the most advanced graduate level. Undergraduate programs are available to all eligible California high-school graduates and community college transfer students who wish to attend the University of California. Instructional programs at the undergraduate level transmit knowledge and skills to students. At the graduate level, students experience with their instructors the processes of developing and testing new hypotheses and fresh interpretations of knowledge. Education for professional careers, grounded in understanding of relevant sciences, literature and research methods, provides individuals with the tools to continue intellectual development over a lifetime and to contribute to the needs of a changing society. Through our academic programs, UC helps create an educated workforce that keeps the California economy competitive. And, through University Extension, with a half-million enrollments annually, UC provides continuing education for Californians to improve their job skills and enhance the quality of their lives.

WE DO RESEARCH - by some of the world's best researchers and brightest students in hundreds of disciplines at its campuses, national laboratories, medical centers and other research facilities around the state. UC provides a unique environment in which leading scholars and promising students strive together to expand fundamental knowledge of human nature, society, and the natural world. Its basic research programs yield a multitude of benefits for California: billions of tax dollars, economic growth through the creation of new products, technologies, jobs, companies and even new industries, agricultural productivity, advances in health care, improvements in the quality of life. UC's research has been vital in the establishment of the Internet and the semiconductor, software and biotechnology industries in California, making substantial economic and social contributions.

WE PROVIDE PUBLIC SERVICE, which dates back to UC's origins as a land grant institution in the 1860s. Today, through its public service programs and industry partnerships, UC disseminates research results and translates scientific discoveries into practical knowledge and technological innovations that benefit California and the nation. UC's agricultural extension programs serve hundreds of thousands of Californians in every county in the state. Open to all Californians, UC's libraries, museums, performing arts spaces, gardens and science centers are valuable public resources and community gathering places. The University's active involvement in public-school partnerships and professional development institutes help strengthen the expertise of teachers and the academic achievement of students in communities throughout California.

The University of California's mission is published at
http://www.universityofcalifornia.edu/aboutuc/mission.html
The Office of the President informs us that it dates to the 1974-1978 Academic Plan.

3.   **Program History**

The following text is taken from the 2010 University of California at Berkeley Architecture Program Report*.*

Limited instruction in architecture began in Berkeley in 1884 under the direction of Bernard Maybeck. In 1903, John Galen Howard, selected to be the supervising architect charged with realizing the Campus Plan chosen by the 1900 International Beaux Arts Competition sponsored by Phoebe Hearst, established an atelier next to his office. In 1913, this atelier was moved to a new building, and the School of Architecture was formally established, later becoming a department in the College of Letters and Science. In 1953, in recognition of architecture's professional status, the College of Architecture was founded under the direction of William Wurster.

The history of our college began in 1950, when then-President Sproul had requested a review of the Department of City and Regional Planning, suggesting its possible consolidation with other departments. In 1952, a review committee, chaired by Professor T.J. Kent, Jr., with support from Professor Wurster, recommended that the university establish "a new College of Planning and Design." A second committee, including Professor .L. Vaughan of Landscape Architecture, Professor Francis Violich of Landscape Architecture and City and Regional Planning and Professor Vernon DeMars of Architecture, explored the feasibility of this recommendation. In 1957, a formal proposal for a "College of Environmental Design" was made to the university. The proposal was accepted in April 1959, with Architecture becoming a department of the College of Environmental Design in the fall of the year. In 1965, the college and the department moved to its new building, William and Catherine Bauer Wurster Hall.

Also in 1964, the department chose to phase out the five-year Bachelor of Architecture degree program and to replace it with a liberal arts four-year Bachelor of Arts in Architecture, and a Master of Architecture degree program as its professional program. This program is organized in three options: Option III, three years, for students with degrees in fields other than architecture (degree + 3 program); Option II, two years, for students with an A.B. degree with a major in architecture (4 + 2 program); and Option I, one year and non-accredited, for students wit a previous professional degree in architecture. Options II and III have been continuously accredited since they were established.

In 2000, an extensive renovation of Wurster Hall began to seismically upgrade the building. All departments were relocated throughout the campus. In the Spring of 2003, we re-occupied Wurster Hall In 2000, an extensive renovation of Wurster Hall began to seismically upgrade the building. All departments were relocated throughout the campus. In the Spring of 2003, we re-occupied Wurster Hall and in the following Fall we had our last Visiting Team followed by the Focused Evaluation Team in 2007.

The academic history of any architecture program is a summary of the teaching, research/creative production and service of each individual faculty member. Nonetheless, it is not uncommon to have specific themes and traditions emerge which come to be identified with programs as a whole. So it is with the Department of Architecture at Berkeley. From the founding of the College, the Department has conceived of its mission as bringing **research and design together** to provide " a synthesis of ……….the functional and aesthetic qualities of our surroundings". (Wurster) We **design and write** and are written about.

• The Department has long been associated with the **social activism** of the sixties, leading to research and design activism which focuses on improving the quality of peoples' everyday lives, recognizing the diversity of voices and needs from farm-worker housing to housing for the homeless to design for accessibility. The research and design in social factors and ethnography are seen as important forms of advocacy and a catalyst for social change.

• A concern for **process, from design through fabrication and construction**, has informed the work of designers and researchers from the Department's inception – currently leading to the exploration of digital form generation, new materials, fabrication techniques (including digital), and an analysis of construction systems. The tradition makes 'process' a part of the design imagination with the goal of enhancing design and performance.

• Unparalleled strengths in **building science** have focused on the performance of buildings through integrating the design of the building envelope and environmental systems with an emphasis on empirical performance of both energy and human satisfaction. This focus on empirical evaluation has led to groundbreaking research in studies of thermal comfort, dynamic facades, and innovative environmental control systems. The integration of building science and human response provides a robust perspective on how to provide measures of sustainability leading to innovative whole systems designs.

• The Department's teaching of **architecture history** has transformed the discipline by insisting on a more international canon, teaching not only the formal/spatial qualities of buildings, but also the cultural, social and economic context and the technical processes, which enabled their construction. This tradition provides a more rich and complete range of precedents, from high art to everyday cultural landscapes, expanding students' design imagination.

4.   Program Mission

The following text is taken from the 2010 University of California at Berkeley Architecture Program Report*.*

Our mission in the Master of Architecture program at Berkeley is to further the critical position of architecture within a larger cultural framework. We engage this mission through the integration of a rigorous professional education with other disciplinary pursuits. Thus we seek to advance and expand the concerns of the profession, even as we prepare our students to operate successfully within it.

It is important to us that our students ask questions as well as answer them. We are constantly seeking to improve our curriculum, such that research disciplines, design exploration, and cultural inquiry intersect in provocative ways. We want our students to be agile in their ability to adapt to changing professional requirements, but also cognizant of their own systems of values. We want them to be as willing to propose as to react, and open to the increasing rate of change in architecture's ways and means. The increasingly complicated challenges that cross and intersect the arenas of ecology, politics, economy, technology and aesthetics demand this fluid approach to architectural education.

It is also part of our mission to make sure that students engage the other intellectual resources both within the College of Environmental Design, and across this great public research university campus. We encourage interaction with the PhD students within the department, with students and faculty in the departments of Landscape Architecture and

City Planning, and across the university. Our relatively open curriculum allows students the opportunity to take classes outside the department.

At the heart of our mission is the development of students' awareness of built space in all its aesthetic dimensions and at a multiplicity of scales, its physical parameters in a larger context of environmental stewardship, and its consequences for social and political frameworks both locally and globally.

(This mission statement was revised by the M.Arch Committee on October 25, 2009, and endorsed by the Department on November 30, 2009)

5. **Program Self Assessment**

The following text is taken from the 2010 University of California at Berkeley Architecture Program Report.

We believe that education occurs in the classroom and in a critical response to the world around us. Our faculty approaches the discipline and the profession from a variety of intellectual outlooks; we attempt to balance support for a student's individual growth and insight with the overall mission of our larger academic community. Our graduates thus absorb and reflect a multiplicity of values: aesthetic, social, and ethical. They go on to become leaders in practice-- as registered architects, as influential consultants in engineering and technical roles, as innovative educators in accredited institutions here at home and elsewhere around the world, and as individuals who shape public policy and practice through their social activism.

Our program has a long history, and a depth of purpose that links many academic disciplines with the design mission. Several of our long-standing areas of emphasis have grown and evolved in recent years, in correspondence with emerging political and technological developments. We are in the midst of both synthetic and new initiatives that draw upon these strengths; at the same time we are searching for new modes of support for our program, in this period of decreasing resources. The following sections describe our recent program innovations, our ongoing intellectual and curriculum strengths, the challenges currently facing the department, and our strategic plan for the future.

1.5.1 PROGRAM STRENGTHS

Over the past few years, several new and significant themes have emerged within the M.Arch curriculum. They are at once the product of larger developments in culture and technology, and of the additions of individual faculty to the department. In spite of a diminished number of faculty over the past decade, there is the emergence of themes that inspire current and future collaborations in teaching and research; these themes are thus finding intersections in new classes and new initiatives. The themes include: international contexts for architectural study; design and policy in support of urban ecology; workshops in materials research; emerging applications for digital design, and design-build studios. Other innovations in the department are related to continuing strengths: opportunities for research, recognition for creative work, teaching opportunities, engagement with the professional community of California, and cross-disciplinary team-teaching.

INTERNATIONAL CONTEXTS FOR ARCHITECTURAL STUDY
In the last ten years, the Department has used endowments to substantially subsidize student travel for design studios based on international sites and reflecting global trends in architectural practice. Even in today's economically constrained times, we are able

offer students rich educational experiences that recognize the diverse cultures or the world. Through a variety of funding sources, individual studios and seminars over the last few years have traveled to China, Japan, Brazil, Mexico, Thailand, and Argentina with Professors Nezar AlSayyad, Dana Buntrock, Raveevarn Choksombatchai, Renee Chow, René Davids, and Harrison Fraker. These international studios often reflect and support faculty members' creative production as well as students' educational goals. (For a more complete discussion of student opportunities in this area, see Section 3.7.5 "Student Participation in Off-Campus activities.") Particular examples of international study include:

•   The entering class of students in our three-year M.Arch program (in its Spring studio, 200B) travels with faculty for a two-week period over Spring Break, subsidized by the Department through endowments. Most often, these trips have been to Europe and reflect an urban orientation, allowing students to understand buildings in a broad international context. In both 2007 and 2008, students traveled to Venice with Nicholas de Monchaux; they also traveled to Paris and Rome in 2008.

•   In 2006, Dana Buntrock and René Davids also arranged for studios here in Berkeley to be taught by professionals from Japan and South America. These were supported by the Friedman funds; the effort to bring practitioners from abroad was temporarily suspended while the conditions of the award were reviewed. Recent agreements with the Friedman family make us optimistic that there will be further examples of such opportunities in the future, allowing us to complement the primary intention of the Freidman support, which continues to be a desire to bring California-based architects into the classroom. The complete list of Friedman Fellows is included in Section 3.1.4, "Architectural Education and the

•   Renee Chow has taken Arch 201 studio groups to China four times in the period under review, often working in collaboration with local universities. In Spring 2004, Chow's studio collaborated with Tongji University, traveling to ZhuJiaJiao, a canal village outside Shanghai. (Former Dean Harrison Fraker returned to Tongji University with a new group of students in Spring 2007.) A year and a half later, in Fall 2005, Chow brought a studio to Shanghai in parallel with another M.Arch studio from Hong Kong University. In Fall 2006, Chow and students worked in Tianjin, the port city of Beijing, collaborating with Tianjin Institute for Urban Construction and the Tianjin Art College, and in Fall 2007, she returned to ZhuJiaJiao with a studio group. In these trips, Chow emphasizes the relationship between the city fabric and architecture, with a heightened awareness derived from comparisons between Western and non-Western traditions. Students are introduced to both vernacular and contemporary architecture. The mixed-use, large-scale developments students observe in China are unlike those in established cities in the developed world, and these experiences prepare graduates for global practice. The studios' work, along with that of Chow's professional practice, were exhibited at the Hong Kong Shenzhen Bi-City Biennial on Architecture and Urbanism in Hong Kong from January to March of 2008. The work of the studios only was again exhibited from August - September 2009 in the Beijing Urban Planning Centre, an exhibit curated by the USC American Academy in China. The costs of student and faculty travel for these studios were significantly subsidized by Departmental funding and discretionary support linked to the endowed chair Chow holds, with only modest costs to students.

•   René Davids has taken M.Arch students to Central and South America in three consecutive semesters. The first was a Spring 2007 Arch 201 called the "MXDF" Studio, involving students not only from UC Berkeley, but also those from the California College of the Arts and *Universidad Iberoamericana*. During a trip to Mexico, "Students were asked to research Mexican culture, artists, and architects; study precedents; create films; and collect rubbings and photographs of the building / construction site in Mexico. They were also required to draw and research twenty pieces displayed at the Anthropology Museum in Mexico City…" Student work was exhibited in the Main Gallery of the

Consulate of Mexico, San Francisco and at the *Universidad Iberoamericana*. A bound
book is available on this work and it can be seen on a Course Gallery at:
http://arch.ced.berkeley.edu/courses/gallery/arch201-sp07-davids

•   In Spring 2008, Davids brought his studio to São Paulo, Brazil. On a web site
summarizing the course, Davids outlined its objectives:
- to analyze and understand the forces that created the São Paulo megalopolis;
- to contribute ideas to São Paulo's latest reform efforts and participate in the awakened
interest in ecological issues and the relationship between nature, topography , the city
and its people.
- to visit some of Brazil's Modernist masterpieces
- to re-enforce the links between the department of architecture at U.C. Berkeley and the
University of São Paulo , Mckenzie University in Rio and peoples of the Americas.

•   In the Spring 2009, Davids and his M.Arch students based their investigations in
Buenos Aires, Argentina, "[c]ontinuing the investigation of the relationships between
architecture, infrastructure and urban waterways previously explored in Xochimilco,
Mexico and in the Tamanduatei River Basin in São Paulo, Brazil…" Students in this
studio used Flickr to share photography and produced short, skillful movies (now
available on YouTube) that acted as their own critical problem statements for their goals.
These films and their subsequent design projects can be seen on the Course Gallery at
http://www.ced.berkeley.edu/courses/sp09/arch201/davids/

ARCHITECTURE, POLICY AND URBAN ECOLOGY
Our department is connected to the growing national and international efforts to integrate
broader social, ecological and political agendas into the architecture curriculum. There
are a number of recent courses, both studios and seminars that address aspects of
zoning, biodiversity, urban water supply, public process and financing in relation to the
design of the built environment. New initiatives at the College level promise to bring
together faculty from the three departments to design new offerings that integrate these
issues into the design studio. Recent offerings in the M.Arch curriculum include:

•   Mark Anderson's studio in Fall 2008, "Refugio San Francisco," explored the
introduction of animal habitats into the city, as both ecological and aesthetic responses to
intensive research on ideal species habitats and localized site analysis.

•   Nicholas de Monchaux and Jill Stoner offer graduate studios that emphasize the
use and reuse of underclaimed sites. In de Monchaux's studio, the students formulate
policies to engage San Francisco's 'unaccepted streets.' ' In Stoner's, they analyze
patterns of vacancy and propose jobs programs to dismantle underused paved surfaces
and return the ground to a permeable condition. They also draft policy proposals for
returning elements of the corporate landscape to public use.

•   M.Arch students are increasing choosing themes in urban ecology as their thesis
subjects. These thesis projects often include faculty advisors from the Department of
Landscape Architecture, and address such issues as urban agriculture, adaptive reuse,
new modes of infrastructure for urban energy production, aspects of design connected to
urban health, issues of water reclamation in cities, and the reintroduction of natural
elements to the urban landscape.

MATERIAL AND BUILDING SUSTAINABILITY
In recent years, concerns about sustainability have been increasingly a focus of design
studio projects and construction technology seminars in the M.Arch. sequence. Susan
Ubbelohde, Raveevarn Choksombatchai, René Davids, Jill Stoner, Renee Chow,
Harrison Fraker, Paz Gutierrez, Mark Anderson, and Ron Rael have all offered design
studios dealing with issues of sustainability at various scales, including urban
infrastructure and a range of technology applications driving sustainability options in

building design, city development, preservation or reconstruction of natural landscapes. With particular regard to materials, in the 269X construction courses Mark Anderson and Ron Rael have both worked with M.Arch students in exploring sustainability issues in fine scale, hands-on technology experiments.

• Mark Anderson has taught several 269X workshop courses in which students have worked in "sub-contractor" teams to build relatively complex structures. Most recently, mark's students built a large rainwater catchment and water filtration system constructed entirely of discarded plastic bottles. The project is intended as a prototype for under-developed locations with limited resources and urgent need for potable water. A previous project involved the construction of a prototype emergency housing structure that could protect 12 people as well as provide water catchment and filtration of waste water for re-use, in order to afford longer term self-sufficiency in disaster situations.

• Ron Rael has conducted a series of hands-on construction technology workshop projects with M.Arch students, focusing on research and experimentation applying new digital fabrication tools in prototyping sustainable material building components, primarily cast from traditional earth and clay materials. These workshops have produced remarkably creative and functional results with clay-based modular construction components shaped to provide multi-functional performance including water catchment and habitat for plants and animals. Students in these workshops have learned to integrate and apply new tools and interests in advanced design geometries to basic issues of construction material sustainability.

SUSTAINABILITY AND BUILDING PERFORMANCE
Berkeley has long been recognized as a leader in teaching and research related to issues of sustainability, with a particular focus on energy and environmental quality. In all the classes, there is a strong emphasis on the connection between design decisions and the performance of buildings in operation. Students engage in a variety of exercises that combine methods of design, physical monitoring and observation in real buildings, experimentation, and simulation. Just a few examples of our offerings include:

• Gail Brager's ARCH 243, Natural Cooling and Sustainable Design, focuses on how one can design for zero-and low-energy cooling in both residential and commercial scale buildings, focusing on person-centric design approaches that give users a role in controlling their own environments. In addition to case studies, design, and analysis exercises, students also have the opportunity to use the Building Science Wind Tunnel to build models and explore design solutions for natural ventilation.

• Cris Benton's ARCH 244, The Secret Life of Buildings, is structured around a series of field assignments that engage students in direct experience with how buildings work. Students ask and test critical questions about the relationship between architectural, lighting and mechanical systems in existing buildings, with attention to energy use occupant well-being, and architectural spacemaking. Personal experiences are compared to physical data, and simulation tool results, to better understand the foundation for understanding the more abstract tools and standards used by designers in practice.

• In another class taught by Cris Benton, ARCH 245, Daylighting, students utilize experiential and photographic exercises, and physical models, to explore a series of increasingly complex issues regarding daylighting in architectural space. Architectural issues include perception, vision, daylighting techniques, precedents and codes.

• Susan Ubbelohde teaches ARCH 249, High Performance Facades, in collaboration with researchers from the Building Technologies Dept of Lawrence Berkeley National Laboratory. In this class, students explore whether the aesthetics of transparency are necessarily in conflict with thermal and visual performance of the

building skin. They define criteria for high performing buildings, and then engage in an iterative process of design exercises that evaluate and redesign for energy use, human comfort, amenities, and practice.

EMERGING APPLICATIONS OF DIGITAL MEDIA
Beginning with the hiring of Lisa Iwamoto and Mark Anderson in 2001, and the subsequent hires of Nicholas de Monchaux, Paz Gutierrez, Ron Rael and Kyle Steinfeld, the department has continued to pursue the addition of faculty at the cutting edge of digital media. In this rapidly changing field, we have been consistent in bringing to our students new talent and new opportunities for inquiry. Each of these faculty has been awarded 'start-up' funds as part of the hiring package, and has used these funds to purchase relevant up-to-date hardware for the department's use. Several are active liaisons with the Berkeley Center for New Media, which effectively increases the resources available to our students. Examples of recent initiatives include:

•   In two recent advanced studios, and in the current year's group research alternative to the design thesis, Nicholas de Monchaux has been developing methodologies and applications for urban-scale GIS analysis in the generation and manipulation of architectural form. The first stage of this research, which focused on the discovery and utilization of leftover urban spaces in San Francisco and other cities, was recently featured as a finalist in the national "WPA 2.0" competition sponsored by UCLA's citylab (http://wpa2.aud.ucla.edu). The current stage of research, advanced as part of this year's thesis-level work, examines the possibilities presented by location-based optimization for low-energy prefabricated housing, specifically addressing the creation of density in suburban landscapes.

•   Paz Gutierrez's studios develop experimental models of environmental building systems addressing new scales of analysis and "associative parametrics". The exercises provide a critical and integrative overview of complex interdisciplinary data analysis and the rise of scripting in architecture beyond geometrical analysis. The parametric integrative models incorporate bio-physics & environmental data to develop multi-disciplinary visualization datasets that can inform design strategies that respond to these forces.

•   The recent hire of Assistant Professor Kyle Steinfeld (starting Fall 2010) promises new initiatives in digital design instruction and research. His aim is to ensure that students are not only able to explore a range of formal devices offered by computational methods, but are able to fully embrace the potential for creativity that computational methods offer, and are able to understand the cultural positions engendered by them as well. To that end, he has proposed to develop an entire digital design curriculum that is tightly integrated with the teaching of architecture. Such an integrated approach will ensure that the teaching of design tools is not disassociated from the context of the architectural design studio, and that students can understand the technology's social, cultural, and formal implications for the design process.\

DESIGN-BUILD STUDIOS
Design-build studios give students the opportunity to engage with real clients, produce contract documents, the necessity of collaboration with colleagues, meeting with engineering consultants and other advisory professionals, and the budgeting of materials and time. These studios require intensive faculty preparation and a greater than usual commitment of time, and are not offered on a regular basis. We would like to find sponsorships for these studios that made them a more consistent part of the curriculum. Here are examples of design-build studios offered over the past six years:

•   In Spring 2005 and 2006, Mark Anderson led seminars (ARCH 269X) involving the development of small portable structures: *Hot-White Orange* in 2005 and *LifeBean* in 2006. These were extremely well received by the profession and media. *LifeBean* was given a $2500 prize for best group project in the 2006 competition *2x8:SWELL,* sponsored by the AIA Los Angeles Chapter, and both structures were selected for exhibition at the Architecture + Design Museum in Los Angeles during the summer of 2006. *Hot-White Orange* also received a design award from *I.D.Magazine* in 2006 and was published in the Annual I.D. Design Awards issue of the magazine. A photo of *Hot White Orange* was additionally published in the *Journal of Architectural Education* as part of a discussion of the value of designing and building installations in students' education. Both projects were also exhibited at the University of Texas Dallas Gallery in 2008.

•   In Spring 2004, in Anderson's ARCH 201 , students worked as a group to design and build four components for the alternative learning programs at the Tinkers' Workshop, offered to at-risk and disadvantage youth form Oakland and Berkeley. These components were massive rammed earth walls; a rammed earth stage for performances and events; concrete work slabs; and a security fence made of salvaged bicycle parts.

•   Jill Stoner has offered two studios that engaged actual clients and resulted in small built projects. The first, as set of interior additions to an apartment building in Berkeley, into which students constructed small interventions in the public zones of the building. These included elements added at the ends of corridors, in laundry rooms, and on balconies. The process included all five phases of architectural design, and concluded in a one-week construction period supervised by the building developer, who is a former M.Arch graduate. The second, a set of outdoor additions to the Don Edwards Nature Preserve, also proceeded through design development, construction documents and construction. Initial proposals were submitted to the staff of the refuge for approval.

•   Stoner also supervised a thesis project that resulted in a constructed project at a public school in Oakland

OPPORTUNITIES FOR RESEARCH
The range and quality of faculty research is described more fully in Section 3.1.1 (Architectural Education and the Academic Context) Our M.Arch students participate fully in important and influential research, often in topic-specific studios and seminars and also as Graduate Student Researchers (GSRs). In the years between 2004 and 2009, there were 174 distinct Graduate Student Researcher hires, involving M.Arch, M.S., and Ph.D. students, often working together. Examples specifically demonstrating how our research is evidenced in graduate student work include:

•   Studios regularly engage in landscapes and cultures throughout the world, and many of these deliberately engage issues of sustainability (as seen in studios in India offered by Nezar AlSayyad and Susan Ubbelohde or China, offered by Harrison Fraker) or new models of large-scale development (Renee Chow in China). In each of these, the faculty used the M.Arch studios as a means to test and transmit important theoretic positions related to their work here in Berkeley.

•   Cris Benton's regularly offered and extremely popular seminar Arch 244, The Secret Life of Buildings, conducts a series of case study exercises involving the collection of background information, survey of those associated with a building (e.g. designers, operators, occupants), measurement of physical parameters, analysis, and writing reports. Students examine architectural, lighting, and mechanical systems in existing buildings with attention to energy use, occupant well-being, and architectural spacemaking.

• Through the study concentration entitled "Environmental Design and Urbanism in Developing Countries," and related ties to the International Association for the Study of Traditional Environments (IASTE), directed until recently by Nezar AlSayyad, students conduct vital research on rapidly vanishing indigenous architecture and on the complex cultural ramifications of traditional environments becoming enmeshed in modern development. (More on this study concentration can be seen at *http://arch.ced.berkeley.edu/areas/designdevcountries*) Although the study concentration is intended for MS / PhD students, M.Arch students participate in these opportunities through seminars, Graduate Student Researcher positions, thesis work and presentations at IASTE. AlSayyad also edits *Traditional Dwellings and Settlements Review*, which has provided a venue for many UC Berkeley faculty and students to publish work alongside an international cast of authors.

• Mary Comerio, teaching Arch 253, Seismic Design and Construction, and team-teaching with now-retired Stephen Tobriner in Arch 259X seminar offered opportunities for students to observe and assess the unfolding seismic retrofitting of our campus starting in the year 2000. With the assistance of Graduate Student Researcher Arianne Fehrenkamp (M.Arch '07 / Opt. 3) and research support from the Pacific Earthquake Engineering Research Center, the group produced a 2006 guide to the changes seen on campus, *Bracing Berkeley: A Guide to Seismic Safety on the UC Berkeley Campus*. In it, Tobriner rightly noted, "The campus in now a museum of the most advanced seismic retrofit and construction strategies employed in the late twentieth and early twenty-first centuries…"

RECOGNITION FOR CREATIVE WORK
Our students and recent graduates regularly receive national and international recognition for their work, also acknowledged as innovative leaders. While student work clearly demonstrates our commitment to the basic nuts and bolts of the profession, we believe that the cutting-edge character of some of this work addresses the future of the profession, where our department has traditionally had its greatest impact. These are only a few examples of outside recognition for student work received very recently, of which we are understandably proud:

• Joe Pang (M.Arch '09 / Opt. 2) was awarded Grand Prize in the *2x8:SHIFT 2009* competition organized by the AIA Los Angeles Chapter. The *2x8* Program recognizes and supports exemplary student work from architecture and design schools throughout California. Pang's project, "Algae Air Purification System," was developed during a Fall 2008 seminar, ARCH 269, Material Bio-Intelligence, taught by Assistant Professor Maria Paz Gutierrez. An exhibition of the *2x8:SHIFT* entries was held at the Pacific Design Center in conjunction with WESTWEEK. Pang continued this work in his thesis.

• Son N. Nguyen (M.Arch '07 / Opt. 1) received the Grand Prize for his "Unnatural Selections," developed under the guidance of Raveevarn Choksombatchai in the 2008 *2x8:SKIN,* organized by the AIA Los Angeles. Mark Pembroke's (M.Arch '07 / Opt. 3) thesis project, "Filling the Void: Addressing the Under-representation of Minorities in Architecture" received an award 2007 *2x8:VERT*.

• In the 2006 *2x8: SWELL*, the first year our department participated, UC Berkeley swept all the awards, with the work exhibited at the AIA National Convention. The $6000 Grand Prize went to collaborative work from Maybeck Fellow Georgina Huljich's studio; works done in seminars taught by Mark Anderson, *Lifebean* and *Hot-White Orange*, were also acknowledged, with *Lifebean* winning a $2500 award for best group project. All three collaborative efforts were selected for a subsequent summer exhibition at the Museum of Architecture and Design in L.A.

• Alan Tse's (M. Arch '09 / Opt. 2) design for an Urban Food Market received a 2009 Bronze "Spark" Award, selected from 360 finalists. Tse's work will be exhibited at

the Autodesk Gallery in San Francisco, and then shown at Goungzhou Design Gallery in China in December. The work can also be seen at
http://www.sparkawards.com/Galleries/09_Entries.htm?appid=2523 The model for this project is also one of thirteen finalists in the 2009 Open-Satellite Super Model Competition, and will go on display in Seattle in January for final judging. The design and presentation were developed in a Fall 2008 ARCH 201 Studio taught by René Davids, which traveled to São Paulo, Brazil. (International travel opportunities for studios and seminars are discussed in Section 3.7.5 Student Participation In Off-Campus Activities.)

•   Natalia Echeverri's thesis (M.Arch / Opt. 2 + MCP '09) was selected for exhibition between September 2009 and January 2010 at the Fourth International Architecture Biennale in Rotterdam, The Netherlands. Hers was among 44 entries selected out of 160 submitted projects. Echeverri was also a 2008 Branner Traveling Fellow. (The fellowship is further discussed in Section 3.1.2, Architectural Education And The Students).

•   Grant Chang, LEED AP (M. Arch '07 / Opt. 3) redesigned the San Francisco Transbay Terminal for his thesis; it was published in Surface magazine's 2007 "The 10th Annual Avant Guardian Issue" (no. 68) which included student work around the country. The design was also included in a local publication called *TODO* (June 2007, no. 18). Chang is now at SOM, working on a transit hub with office towers located in Shanghai.

•   In 2007, UC Berkeley won the Urban Land Institute's Gerald Hines Student Urban Design Competition, an award totaling $50,000. In the competition, graduate student teams comprising at least three disciplines have two weeks to devise a comprehensive design and development program for a real, large-scale site fraught with challenges and opportunities. The 2007 winning proposal, "Tectonics" engaged metamorphic processes in creating new landscapes by forming connections between disparate fragments of Los Angeles' neighborhoods. The urban plan proposed flowing green spaces leading to a new park decked over railyards, and connecting to a greenway. This urban-scale swath of green space continued into the residential neighborhoods in Boyle Heights, up to Mariachi Plaza, which was redeveloped with residential rental and ownership units, both market-rate and affordable, built above neighborhood-scale retail spaces. The 2007 team included Aditi Rao (M.Arch / Opt. 3 + MCP '08). Since the competition began in 2003, Berkeley teams were finalists in two other years: in 2006, with William Oren (M.Arch '07 / Opt. 3) and in 2005, in a team that included students from Stanford, with Jeffery Carney (M.Arch / Opt. 2 + M.C.P. '07).

•   Marie Sorensen (M.Arch / Opt. 3 + M.C.P. '07) and Jill Stoner were one of three teams to win the 2009 "Imagining Recovery" international competition, which coincided with the first 100 days of the Obama presidency. Sorensen was a Branner Fellow in 2006.

•   Student work was selected for the first and one of the second place awards in the 2008 43rd Central Glass Architectural Design Competition: "Architecture Coexisting with World Heritage Sites," co-sponsored by *Shinkenchiku-sha*; the annual international competition attracted 733 entries. The ¥2-million first place entry was designed by Professor René Davids, and Taylor Medlin (M.Arch '10 / Opt. 2). One of two ¥300,000 second place prizes was also taken by graduates from the Department, Mizuki Osawa (B.A. '06) and Chia Chieh "Jessica" Lee (B.A. '06). Both teams' work was published in *Shinkenchiku* and Japan Architect.

•   In Spring 2009, Harini Rajaraman (M.Arch '11 / Opt. 2, chose to switch to Option 3), working in a 201 studio with Associate Professor Mark Anderson), developed a design that was shortlisted for the Wildlife Design Competition, organized by Holbeck Urban Village, Leeds, England. The competition sought habitat designs to sustain dwindling populations of local house sparrows, swifts, insects, otter, butterflies, bees, and bats. Rajaraman's Butterfly Pillow is a multi-layered haven for butterflies that responds to local

climatic conditions, responding to the competition's call to prove that "development of new homes for humans doesn't have to mean eviction for animals."

• "Water Border," a paper and design proposal by Adriana Navarro-Sertich (M.Arch / Opt. 2 + MCP '11), was accepted for inclusion in the proceedings *Unspoken Borders: Ecologies of Inequality* (University of Pennsylvania, 2009) and presented at a related Unspoken Borders Conference, sponsored by the PennDesign Black Student Association at the University of Pennsylvania in April 2009. The conference and publication included articles and design proposals from professionals in the fields of architecture, landscape architecture, urban design, and city planning addressing a range of topics related to race, class, and culture. Navarro-Sertich examined "the systems, infrastructure and design processes that create or perpetuate the socio-economic and environmental stratification of our society," focusing on the hydro-politics of the U.S.-Mexico border as part of an ARCH 201 Studio with Ronald Rael. Navarro-Sertich was also awarded a 2010 Branner Fellowship.

• The 2007 "Next Generation" competition, sponsored by *Metropolis Magazine*, was won by Anton Willis (M.Arch '07 / Opt. 3), working with Catherine "Kate" Lydon (M.Arch '07 / Opt. 3) and others. Their proposal, lunar-resonant streetlights, was initially developed by Willis in his M.Arch thesis, and has since been featured in the *New York Times,* in the Buckminster Fuller Challenge, shown on the Discovery Channel, discussed on NPR, and widely published on-line.

TEACHING OPPORTUNUTIES
We regard our M.Arch students as both designers and scholars, and this is evident not only in our support for their research, but also for their teaching; many of our large undergraduate classes rely on Graduate Student Instructors (GSIs) as part of the teaching team. Unlike the norms elsewhere for a teaching assistant, our GSIs operate with a high degree of autonomy and independent authority. These GSIs are crucial to our large undergraduate program; the teaching positions are also important assets within our college because they support graduate students financially in addition to inspiring them intellectually.

• Even with recent budget setbacks, we have been diligent in retaining as many Graduate Student Instructor positions as possible. GSIs support our teaching in construction, structures, building science, social and cultural factors, the use of digital tools, and in undergraduate studios. In 2008-2009, seventy-two students in the M.Arch, M.S. and Ph.D. programs were GSIs, with appointments ranging from 0.25 FTE to .40 FTE.

• Mentorship is crucial to the Graduate Student Instructors' effectiveness. In addition to working closely with the head of the teaching team, both the campus and the Department require all Graduate Student Instructors to undergo pedagogical training in a class called ARCH 300, Seminar in the Teaching of Architecture. This is further discussed in Section 3.4.1 Social Equity In The Graduate Programs.

• In addition, all students on campus, whether freshmen or finishing a dissertation, are able to propose and teach one- or two-credit pass-fail classes without prerequisites, through a program casually referred to as DeCal (short for "Democratic Education at Cal"). The system offers classes both silly and serious, each one supervised by a member of the faculty. In both Spring and Fall 2009, relevant offerings included Affordable Housing Issues (sponsored by the Chair of the Department of City and Regional Planning, Karen Christensen). While these resources tend to be appreciated more by our undergraduates, after taking "LEED and Green Building Study," taught by Lindsay Baker (M.S. '09, PhD candidate), twenty-five students self-reported becoming

LEED certified; of these, ten were in M.Arch programs. Baker plans to offer the class again in Spring 2010.

ENGAGING THE PROFESSIONAL COMMUNITY OF CALIFORNIA
The metropolitan regions of San Francisco and Los Angeles are a source of enormous architectural talent, and our school is deeply engaged with this community in a variety of ways.

•   The Friedman Fellows, supported with endowments, are often leading professionals based in San Francisco or Los Angeles, such as Larry Scarpa of Pugh & Scarpa; Wes Jones; Michael Maltzan; Brett Terpelik of the Renzo Piano Building Workshop; William Fain & Scott Johnson; Mary Griffin, FAIA, of Turnbull, Griffin, Haesloop; and Anne Fougeron. For more on how we work closely with California's professionals, see Section 3.1.4, Architectural Education And The Profession.

•   The Esherick Fellows, supported with endowments, have so far been leading professionals based in major cities within easy reach by air: Frederic Schwartz, Peter Testa, Neil Denari, David Erdman, Tom Wiscombe. For more, see Section 3.1.4, Architectural Education And The Profession.

•   Local professionals from HOK, Genlser, ARUP, and McDonough and Partners speak in our Colloquia. For more, see a complete listing in Section 3.1.4, Architectural Education And The Profession.

•   Studio and seminar professors invite other department faculty and visitors, especially practicing professionals, and (for major reviews) faculty from other architecture programs around the country to participate in reviews. Final reviews of Master's thesis projects are multi-day events. Studio reviews are important occasions for disseminating information and for the exchange of ideas among faculty as well as between faculty and students.

•   Similarly, the Department's exhibitions, its public evening lecture series and exhibitions provide exciting forums for interaction, forging connections between the M.Arch and research-based programs and between the M.Arch and other departments' professional programs. Information on recent evening lectures is included in Section 3.7.2 Visiting Lecturers And Critics; information on exhibitions follows in 3.7.3 Public Exhibitions Since 2003.

CROSS-DISCIPLINARY TEAM TEACHING
In the last external Academic Program Review (1993), and in NAAB reviews, Department faculty and outside commentators alike often note the great potential for cross-disciplinary team-teaching here. The rich and varied expertise found on our faculty offers a strong argument for engaging with each other and our students across conventional disciplinary divisions. Examples include:

•   At least two ladder-rank faculty or continuing lecturers from the design faculty conventionally co-teach the two-semester Architecture 200A/B sequence, an intensive studio for first-year students in the three-year M.Arch program. In recent years, one experiment involved bringing architectural historians such as Greig Crysler or Andrew Shanken to the ARCH 200A/B teaching team.

•   An NAAB recommendation also initiated greater interest in other co-taught studios, including comprehensive studios. The most elaborate of these studios was the 2007-2008 Nano City studio initiated by Nezar AlSayyad, involving collaboration across the College, involving four faculty from Architecture and two from City Planning. The studio was offered to students in all three departments, at the M.Arch, MCP, MLA and PhD levels. It also brought $300K in funding to the College, some spent on Graduate

Student Researchers working during the summer months, and resulted in a major master planning project. For additional information on this studio, see 3.7.5 Student Participation In Off-Campus Activities. Our new Dean, Jennifer Wolch, is interested in finding the means to offer more of these "Super Studios." Two others are described in the following paragraph.

•   In Fall 2004 and Spring 2007, Harrison Fraker arranged for studios involving both undergraduate and graduate students from the departments of Landscape Architecture, Architecture, Urban Design, and Transportation Design at UC Berkeley and Shanghai's *Tongji* University, supported by the Gordon and Betty Moore Foundation. Faculty included Dean Fraker, Judith Stilgenbauer from Landscape Architecture, and two alumni from the Departments of Architecture and Landscape Architecture, David Baker and Clark Wilson. In Fall 2004, Harrison Fraker, working with David Dowall from the Department of City and Regional Planning and Tom Lollini, and also supported by the Gordon and Betty Moore Foundation, brought fifteen students to Beijing and Tianjin. Students in this group were from the Departments of Architecture, Landscape Architecture, and City and Regional Planning. More on these studios is included in Section 3.7.5 Student Participation In Off-Campus Activities.

1.5.2   CHALLENGES WITHIN THE M.ARCH PROGRAM

Simultaneous with this NAAB review, our Department is undergoing a University Academic Program Review (the visit took place in Fall 2009, and our response is being prepared in Spring 2010). As part of that process, we engaged in a series of conversations about the strengths and challenges of our program, and prepared a detailed Self-Study report. Based on that exercise, as well as the feedback we received from the external reviewers, we have a clear sense of our challenges. The ones that are specifically related to the M.Arch program are summarized here.

CURRICULUM
Historically, the Master of Architecture program has had a large and varied faculty able to offer a range of robust specializations (history, social processes, building science, design process, and a wide variety of design approaches) within the one-, two- and three-year curricular programs. Our diversity is our greatest strength, and also our greatest challenge. Our openness to a broad range of approaches to the discipline is part of the reason we have had such wide-reaching and pervasive impact in the field and why our students are recognized for their leadership at such an early stage of their own careers. Our current challenge is to evaluate these specializations in light of changing faculty and current developments in our field, in some case redefining their scope, in others perhaps finding ways to combine them.

STUDIO SEQUENCE & COMPREHENSIVE STUDIO
One specific challenge is the restructuring of the studio sequence, while maintaining a diversity of offerings at a multiplicity of scales. We are considering various options regarding more structured offerings. The M.Arch Committee has made this a focus of its 2009 – 2010 agenda, and will have a specific proposal in place at the time of the spring NAAB visit.

FACULTY INVOLVEMENT IN THESIS
Participation in thesis committees is unevenly distributed, with some faculty on as many as six or eight committees each Spring and others on none; inclusion on these committees is often not factored into the distribution of faculty teaching responsibilities. (A similar problem is also found in the M.S. / Ph.D. thesis committees.) The combination of thesis commitments and admissions responsibilities tends to take a great deal of faculty

time each Spring and was the impetus for Stoner and the 2008-2009 M.Arch committee to consider alternatives.

DESIGN FACULTY
Our department overall has had a significant decline in the number of FTE, and many areas of our curriculum are in need of more faculty. In particular, many design faculty are concerned that our department has an unusually small ratio of design faculty to other faculty, based on comparisons to other schools of architecture. Clearly, in a setting where only a professional degree is offered, the relative proportion of design faculty would be much higher; given the strength of our M.S. and PhD program, we may have a relatively larger number of faculty compared to other schools in specialized areas (such as history/theory), and that affects this ratio. In any case, there is a particular need for more design faculty whose strength is in professional practice and the design and construction of real buildings.

RESOURCES
Reduced general funding has had other numerous and unavoidable effects on our educational community. One area that has been impacted is our digital equipment and related staff support. Budget cuts have forced us to add fees for access to computers and fabrication equipment; students, as a result, are unable to use our facilities to the fullest. Revenue shortfalls have also decreased the number of workshop hours and time available for students to access CNC machines. Our students are deeply concerned about insufficient and/or inadequate printer and computer services, as well as easy access to this equipment.

•   We have tried to balance these needs with other support; Lisa Iwamoto deserves the greatest credit in this regard. She dedicated a significant amount of her start-up funds to equipment purchase and later brought in an impressive grant of nearly $100,000 from the National Science Foundation for CAD/CAM equipment in 2003, with additional matching funds of over $26,000 and $6,500 from other sources. Fees collected through 2007 were used for nearly $200,000 in hardware and software purchases in the 2008-2009 academic year. As explained elsewhere, however, the practice of collecting these fees was restructured, and such funds will not be available in the future.

•   Ronald Rael employed some of his start-up support to establish a parallel Digital Ceramics Lab, a collaboration with Ceramics Professor Richard Shaw in the Department of Art Practice. Rael and Shaw share the costs of equipment for a digital ceramics research laboratory with two 3D printers, two computers and a 3D digitizer. Students enrolled in the digital ceramics course are given access to the equipment, printing sinuous clay bodies to that are then fired in the ceramics kilns.

1.5.3 THE FUTURE: OPPORTUNITIES, STRATEGIES AND PROPOSED INITIATIVES

The M.Arch committee, which since Fall 2008 has been headed by Chair of Graduate Advisors Jill Stoner, is aggressively addressing many of these issues. Stoner has guided the M.Arch committee in implementing more rigorous oversight of studios in general and the comprehensive studios in particular, in exploring new models for the capstone project, and developing new revenue streams.

CAPSTONE PROJECT
One of our requirements for the M.Arch degree is a final thesis project; we are the only professional school at UC Berkeley to require a thesis at the Master's level. Each graduate student developing a thesis, whether written or designed, usually takes part in one of three "thesis prep" courses offered in the Fall and then assembles a committee involving two departmental faculty and an outside member in the Spring. This year, we

have added a new option, a research studio. Complementary to the thesis option, this research studio will involve more collaborative inquiry around a set of intellectual questions designed by the studio leader, in this case Nicholas de Monchaux. While thesis students produce individual documents, the research studio will culminate in a single collaborative publication synthesizing the research and design components of the year-long course. At the end of this first year, we will evaluate the success and potential continuation of the research studio, which will in turn influence the future of the thesis option.

STUDIO SEQUENCE
Implementation of the comprehensive studio requirement for all M.Arch students, created in response to our most recent NAAB review, is another opportunity for improvements in our curriculum. NAAB requirements for comprehensive design describe this as intended to assure the "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." The underlying intent of the studio is to fully integrate programmatic, technical and aesthetic concepts throughout the full range of design activity from schematic proposal to design development to contract document. Although there have been some exciting versions of these studios since our last NAAB visit, many involving practicing faculty brought in with Freidman funds, there are faculty that feel the comprehensive studios offered in very recent semesters challenged us to change. Under our current Chair of Graduate Advisors, Jill Stoner, the M.Arch committee has taken a close look at the comprehensive studios, proposing the following: 1) creating an oversight committee to review both content and evaluation criteria, 2) examining opportunities for team teaching and other forms of collaboration to bring in more technical expertise, and 3) finding additional resources that could support the studios. Stoner will continue to develop these systems and there will likely be more to report on these developments with the NAAB team in Spring 2010.much has already been initiated. This is further discussed in Section 2.1 Summary of Responses To Team Findings, as the Comprehensive Design Studio was a source of concern to the NAAB team in 2004. We are refocusing the comprehensive design agenda, especially directed toward the new 2009 Conditions.

POST-BACCALAUREATE PROGRAM
The new summer post-baccalaureate program [IN]architecture will benefit the M.Arch program in at least three ways: 1) increasing financial resources that can be used for graduate student and program support, 2) helping us to advance a national reputation for an excellent post-baccalaureate program leading to graduate study in architecture, and 3) the nurturing of potential 'star' applicants that will then join our Master of Architecture Option 3 program. All these efforts serve to support our larger educational mission – while also financially subsidizing programs that are at the risk of being cut during these difficult times.

Namikas, Kiki. "Patents Gone Wild." *California Magazine* (January / February 2008) accessed at *http://alumni.berkeley.edu/California/200801/patents.asp.*

Burress, Charles. "Work in Progress" *California Magazine* (Fall 2009) p. 33. Downloadable from *alumni.berkeley.edu/California/200909/main.asp*

[1] From *http://www.berkeley.edu/news/features/nobel/*

[1] Watkin, Tim. "No. 11. Making Sense of it All" in "25 Brilliant California Ideas," *California Magazine* (January / February, 2008) accessed at *http://www.alumni.berkeley.edu/California/200801/ideas/11.asp.*

Berman, Molly. "No. 18. Powered by Paint" in "25 Brilliant California Ideas," *California Magazine* (January / February, 2008) accessed at *http://www.alumni.berkeley.edu/California/200801/ideas/18.asp.*

 "Lab + Field," *California Magazine* (Fall *2009)* p. 13. Downloadable from *alumni.berkeley.edu/California/200909/lab+field.pdf*

[1] Black Watkin, Eleanor. "No. 20. If These Walls Could Talk" in "25 Brilliant California Ideas," *California* Magazine (January / February, 2008) accessed at *http://www.alumni.berkeley.edu/California/200801/ideas/20.asp.*

[1] Burress, Charles. "Work in Progress" p. 30.

[1] Harmanci, Reuhan. "A Great Aspiration" *California Magazine* (Fall 2009) p. 37. Downloadable from *alumni.berkeley.edu/California/200909/main.asp*

[1] *http://internationaloffice.berkeley.edu/multiple_use/enrollment_data.php*

[1] *Ibid.*

[1] Davids, René. "Xochimilco Archeological Museum and Botanical Garden: The Mexico City Studio," *Frameworks*, no. 7 (Fall 2007) p. 28

 For more on this class, including examples of student work, see *http://arch.ced.berkeley.edu/courses/sp08/arch201/front-page2.html*

[1] *http://www.ced.berkeley.edu/courses/sp09/arch201/davids/*

[1] *I.D. Magazine*, July/August 2006, pp 152-163

[1] The 108-page guide can downloaded at *http://peer.berkeley.edu/publications/peer_reports/reports_2006/reports_2006.html*

This page is left blank intentionally.

Appendix B: The Visiting Team

Team Chair, Representing the NCARB
Daniel Redstone, FAIA, NCARB
President, Redstone Architects, Inc.
2709 S. Telegraph Road
Bloomfield Hills, MI 48302-1008
(248) 418-0990
(248) 418-0999 fax
(248) 320-3355 mobile
dan@redstonearchitects.com

Represeting the ACSA
Dr. Ikhlas Sabouni, Dean
Prairie View A&M University
School of Architecture
P.O. Box 519, M.S. 2101
Prairie View, TX. 77446
(936) 261-9810
(936) 261-9827 fax
isabouni@pvamu.edu

Representing the AIAS
Ryan McEnroe
801 Belmont Avenue
Charlottesville, VA 22902
(480) 244-9402
rtm8d@virginia.edu

Representing the AIA
Bruce E. Blackmer, FAIA
NAC/Architecture
1203 West Riverside Avenue
Spokane, WA 99201-1107
(509) 838-8240
(509) 838-8261 fax
bblackmer@nacarchitecture.com

Observer
John Cary
Executive Director
Public Architecture
(510) 757-6213 mobile
jcary@publicarchitecture.org

This page is left blank intentionally.

Appendix C: The Visit Agenda

U N I V E R S I T Y   O F   C A L I F O R N I A   –   B E R K E L E Y
N A A B   T E A M   V I S I T
A P R I L   1 7 - 2 1 ,   2 0 1 0

Date/Time	Activity	Location

Saturday April 17

Afternoon	Team arrival and check-in at hotel (no later than 4 pm)	Bancroft Hotel
2:00 – 3:30	Team Chair tours Team Room	104/108 Wurster
	w/ program Interim Chair Gail Brager	
5:00 – 6:00	Team meeting - introductions & orientation	Bancroft Hotel
6:30 – 8:15	Team dinner w/ Gail Brager & program administrators	TBD
8:30 – 9:30	Team meeting continues, if necessary	Bancroft Hotel

Sunday April 18

7:30 – 8:30	Team-only breakfast	Bancroft Hotel / Henry's
9:00– 10:00	APR review and assembly of issues and questions	Hotel or 104/108
Wurster		
10:00 – 10:30	Overview of the Team Room, Gail Brager	104/108 Wurster
10:30 – 12:00	Team-only - Initial review of student work	104/108 Wurster
12:00 – 1:30	Lunch (debrief)	TBD
	(Team choice → Team-only, or w/ program administrators?)	
1:30 – 3:15	Tour of facilities	Various
3:30 – 6:00	Continued review of student work	104/108 Wurster
6:00 – ??	Team-only dinner, followed by debriefing session	TBD

Monday April 19

7:30 – 8:30	Team breakfast w/ Gail Brager and program administrators	Bancroft Hotel / Henry's
9:00 – 9:45	Entrance meeting with Dean Jennifer Wolch	230 Wurster
10:00 – 10:45	Entrance meeting with Provost/Vice-Provost	200 California Hall
11:00 – 12:00	Entrance meeting with faculty	305 Wurster
12:15 – 1:45	Lunch with M.Arch Committee	TDB
2:00 – 3:00	School-wide entrance meeting with students	305 Wurster
3:00 – 4:30	Observations of studios	Various
4:30 – 6:00	Continued review of student work	104/108 Wurster
6:00 – 7:00	Reception with faculty, administrators, alumni,	Wurster Lobby
	and local practitioners	
7:30 – ??	Team-only dinner, followed by debriefing session	TBD

Tuesday April 20

8:00 – 9:00	Team breakfast w/ Gail Brager and program administrators	Bancroft Hotel / Henry's
9:30 -12:30	Continued review of student work	104/108 Wurster
	+ optional – observations of lectures / seminars	TBD
12:30 – 1:45	Lunch with M.Arch student representatives	TBD
2:00 – 3:00	Meetings with staff representatives	305 Wurster
3:00 – 4:30	Meetings with Librarian, Archivist, and Director of Visual	Various
	Resources Center; tours of related facilities	
4:30 – 6:00	Continued review of student work	104/108 Wurster

	+ optional – observations of lectures / seminars	TBD
6:30 – ??	Team-only dinner, followed by	TBD
	final review of work, accreditation deliberations,	104/108 Wurster or

Hotel

drafting the Visiting Team Report (VTR)

Wednesday April 21

7:30 – 8:00	Check out of hotel	Bancroft
8:00 – 9:00	Team breakfast & exit meeting w/ Gail Brager and program administrators	TBD
9:00 – 10:00	Exit meeting with Provost/Vice-Provost	200 California Hall
10:00 – 11:00	Exit meeting with Dean Jennifer Wolch	230 Wurster
11:00 – 12:00	School-wide exit meeting with faculty and students	TBD
noon	Team transfer to airport	

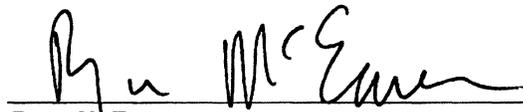## IV.   Report Signatures

Respectfully submitted,

Daniel Redstone, FAIA, NCARB   Representing the NCARB
Team Chair

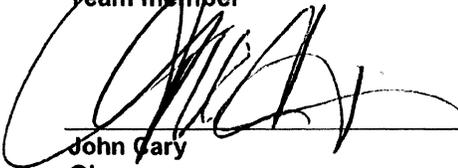Dr. Ikhlas Sabouni   Representing the ACSA
Team member

Ryan McEnore   Representing the AIAS
Team member

Bruce E. Blackmer, FAIA   Representing the AIA
Team member

John Cary
Observer

This page left blank intentionally.