



Outdoor Mid Review



Students at Work

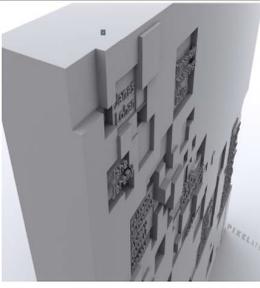
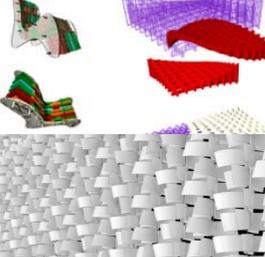
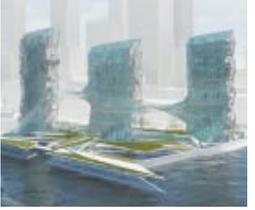
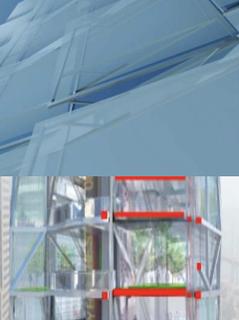


Cover of Fowler Studio Selected Design Studio Work '07-'10, Fowler (ed.) A&E Press '10

Thomas Fowler IV, AIA, NCARB

Portfolio

Portfolio Contents

| | | | |
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| <p>-Teaching Awards</p> |  |  |  |
| <p>CIDS Community Interdisciplinary Projects Connected to Teaching - Designed and Built Work</p> |  |  |  |
| | <p>Intimate Transactions Temporary Theatre Installation, Design and Built, Spring 2008</p> | <p>Modular Display Units – Student Work Archive Room, Designed and Built 2005 + Proposed HO:ME Community Center, '10</p> | <p>Poured-In-Place Concrete Appreciation Wall Poured May 2009 Waiting for Campus Approval for Installation</p> |
| <p>Research Grants and Exhibitions Connected to Teaching</p> |  |  |  |
| | <p>Research Grant - Proposed <i>Lumiere</i> Ghosting Portable Virtual Reality Design/Build Theatre Project, 2005 to Current</p> | <p>Research Grant - Proposed Full-Scaled Building Cladding System Installation for Teaching Demonstration, Designed 2003, Installation on Hold</p> | <p>Exhibitions – "Book Furniture", 2009 & "ReKinetic Skins", 2010</p> |
| <p>Award Winning Student Design Studio Work - 4th Year Interdisciplinary Design Studio - 3rd Year Studio Work</p> |  |  |  |
| | <p>Fourth Year Interdisciplinary Design Studio – "Urban Filtration" (08 ACSA/AISC Competition Winner)</p> | <p>Third Year Design Studio – "Exoskeleton" (10 ACSA/AISC Honorable Mention + 10 AIAS/MBI – 1st Place)</p> | <p>Third Year Design Studio - Emerge (10 "Best of Show" (1st Place) Dept. 3rd Year)</p> |
| <p>Independent Study Student Work - 4th Year - 5th Year - Furniture Prototypes</p> |  |  |  |
| | <p>"Project Iris", (10 "AISC/ACSA" & 10 "D3 Housing Tomorrow" Honorable Mentions) & "Urban Sanctuary" Pediatric Rehabilitation Center (08 AIAS 2nd Place Winner)</p> | <p>Independent Study 5th Year Thesis Project (09 AISC/ACSA Honorable Mention)</p> | <p>Boat Chair Prototype (Winner in the local 1st annual '07 "Vellum" Furniture Design Competition) & Mobile Design Studio Workstation Prototype '05</p> |
| <p>-Publications - Former Students</p> |  |  |  |
| | <p>ed. Fowler, <i>Design Collaboratory</i>, '07-'10 & Fowler Studio Selected Student Design Studio Work '08-'10</p> | <p>Essay, "On Teaching" <i>Becoming An Architect</i>, ed. Lee Waldrep, PhD</p> | <p>Former Students (Selected) + Misc</p> |

Design Collaboratory (DC) – A 4th Year Interdisciplinary (Architecture, Structural Engineering with periodic involvement with Construction Management) Building Design Studio:

Professor Thomas Fowler, IV, AIA in collaboration with Professors Mark Cabrinha, RA; James Doerfler, RA; Kevin Dong, SE, CE; plus a range of industry partners (Architects, Engineers, and Contractors/Fabricators) received a \$7,500 2010 NCARB Prize.

Jury comments: "Students were provided the opportunity to fully engage in a studio design project that was enhanced by the support and collaboration of leading architect practitioners. Students from all disciplines participated in the building design to learn the fundamental principals of negotiation and building systems integration. Practitioners interacted with students during lectures, design critiques, and technology training. The jury noted that the project recognized that integration of architecture education and practice leads to more informed and better outcomes and showed ways architects lead teams of professionals to common goals."

Student Project #1 (Selected) — Urban Filtration - Seattle, Washington's Coleman Ferry Dock Housing + Retail

Architecture Concept:
Seattle's weather forest frequently includes rain, and the Coleman Ferry Dock's location in a key point in the city's topography means the site receives rain off from the entire downtown area and surrounding parts of the city. Water also traces the paths of human circulation through the site, which flows from downtown Seattle to the Puget Sound. Both rainwater and run-off are collected on-site and filtered through the systems of each residential tower to provide clean water to the residents. The playful articulation of the ground plane provides retail space and pedestrian access to the ferry terminals as well as a park-like setting for residents and visitors alike. This inclusive project aims to create a sense of community through a balance of housing, greenery and retail space while speaking of Seattle's intimate connection between people and water.

Structure/Skin Concept:
An organically inspired three-dimensional steel mass system lifts the ground plane in slices to expose a network of retail leading to the three residential towers and ferry terminal. The playful language of articulated green roofs serves to provide protection from the sun, light to the lower parking level, and an extensive park as a new community social space. Using the varying heights of the roof and multiple beam spans, a system of triangulation was developed to determine the form. This system appears organic because of the constantly changing variables of span and load location but is in fact rationally derived. A smaller system through which down is used in the residential towers. The screen structure is designed not only to support the glass and concrete flooring system, but also some of the lateral forces experienced by the towers. A steel mega structure in a central diamond pattern spans four floors and establishes points that were used to define the screen structure pattern. Open faced frame cores filled with glass provide land stability and elevator access to the modules. Piling up and out from the ground is a water filtration system that drains storm and rainwater flowing into the site and delivers fresh water to the apartments contained in the residential towers. The runoff in first courtyard of urban and collected at the base of the screen where it is initially high, supported by a series of ramps up through the elevator cores to the top of the towers. As the dirty water runs through the concrete panels that are cast in place, the water is filtered through the screen's pores and by the time the water reaches the first floor of the towers it is clean. The water flows through break in the screen to trickle down a water wall into a collection area at the base of the residential towers.



Selected Reflective Comments From Architecture and Architectural (Structural) Engineering Interdisciplinary Team:
Collaboration:
I feel that as a team, my group came up with a much richer design, strengthened by the ARCE team's input to create something new and innovative in my school career. A group project that has transformed my own thinking and helped me to continue to develop my design skills and critical thinking. Group interdisciplinary project involvement is a skill that is important to learn for the architecture field while still in school.
Design Process:
The initial design challenge was a huge leap for our team, and the success of the first challenge propelled our team forward into developing theories of our screen filtration idea, organic structural system, research in developing materials system for the screen and the set up of the vertical circulation. In winter quarter, Rafael and I worked very closely, dividing the work between us, and meeting every few days to update the combined digital file, go-over ideas, and updating each other on our design development.
Learning:
I worked a lot on sketchbook drawing ideas for the design, and then once my colleagues and I had discussed them, we would implement it digitally. Initially we had the work divided up between the screen and the steel. I worked on form following up the landscape, parking level, and retail structure (which was extremely fun to do) while my colleagues worked on the structure for the residential towers and the screen. Later on, I also became involved in digitally drawing the screen, creating details, developing the patterns, and applying it to the screen model. I also worked extensively on the modular apartments, coming up with floor plans, modifying them in Rhino, and modifying them as necessary. As far as digital modeling, my colleague focused primarily on modifying the mega structure for the towers, placing the completed apartment modules, and modifying the finished screen that drove to create a more three-dimensional structure.
Learning:
I was motivated in this studio particularly because of the interdisciplinary aspect, but also because I had yet to enter a competition and wanted the experience before fifth year since it would enable me to sharpen my presentation skills. 1) I feel I have made huge strides in my communication and presentation skills. 2) I have also reinforced both design theory and developed a sense of structural understanding that I can use to better inform my projects and thus make them stronger. 3) I have learned that miscommunication is possible, despite valiant efforts to prevent it.

Student Project #2 (Selected) — Performance Driven - Phoenix, Arizona's Deck Park High School for the Performing Arts

Architecture Concept:
The site is Deck Park, just north of downtown Phoenix, Arizona and next to the Phoenix Central Library located in the art district of the city. The site is situated above Freeway 10 and can be seen when driving on the freeway. Considering that Phoenix has extreme climate conditions, it is probable that the building would be primarily cooled and heated to reduce the use of mechanical systems and thus, reduce the impact on the environment. The site is currently not in much use. With the introduction of a High School for the Performing Arts to this site, we will bring a sense of community back to the city. By developing this area that otherwise would be neglected, we can avoid the development of green lands and help preserve the natural environment.
Performance:
Performance can be a presentation of an artistic work to an audience or the effectiveness in which something functions, operates, or behaves. Why can't it be both? This High School for the Performing Arts is not only meant for performance, but also a performance in itself. The building is meant to house the tradition of performing students that attend the school to learn, rehearse, and ultimately perform. This idea became the basis for the programmatic organization of the school. The tradition the students go through in school because the circulation path to the site that faces from private to public as the students learn, rehearse, and perform for the community.
Structure/Skin Concept:
The primary structure, although at first glance appears as a chaotic web of steel members, consists of a series of standardized panels of steel tubes. Each panel is made up of a hollow square member and built elements that are added for additional support as well as complexity. The structure's redundancy allows the members to be smaller and it helps minimize the need for lateral support. The structural panels form the skin and create certain openings in that interaction and overlapping in order to control sunlight. The skin itself consists of series of factors, or flow, that is oriented either vertically or horizontally depending on the solar orientation. The skin is attached to the primary structure through a series of smaller members that are placed across the primary structure. The building's south and north walls tilt down towards the south at 10 degrees in order to prevent direct sunlight and reduce sunlight from the south and to maximize the amount of indirect north light that comes into the classrooms and rehearsal spaces.



Performance Driven: Phoenix High School for the Performing Arts
Programmatic Performance: Phoenix High School for the Performing Arts
Structured Performance: Phoenix High School for the Performing Arts
Façade Performance: Phoenix High School for the Performing Arts

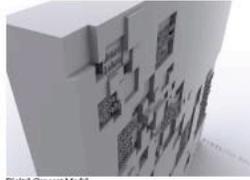
Selected Reflective Comments From Architecture, Architectural (Structural) Engineering and Construction Management Interdisciplinary Team:
The top three things that I learned in this studio experience include working efficiently with a group, the application of structural concepts in the design process, and the benefits of using advanced digital technology for the development and presentation of a project. Some of the things that contributed to this learning experience include the involvement of professors, the help from the one-on-one industry projects and the involvement of professionals in our design process.
By working in this interdisciplinary group I feel that we all greatly learned from each other. We were able to go outside our differences and work together as a team to achieve our project goals. Working with the Architectural Engineers and the Construction Management student helped to develop our structural and understanding of constructability issues so that we all were consistent with the project outcomes. I think this experience is unique here at this institution and I feel other majors should also collaborate with different disciplines. This is something that will benefit us in the future when we get into the workforce and have to work with many different fields of study.
Participating Professionals:
The participation of the different range of professionals greatly assisted our group to further develop our project. In person reviews with Practitioners were probably the best due to the ease of communication of our concepts and ideas. Through their critiques and suggestions we were able to make changes and take into consideration issues that we would not have thought of. I feel that the work was hands-on. Much Constructing in a great tool. Visiting the actual firms was probably one of the best experiences that I enjoyed about the class.

Selected NCARB Prize Work

Collaborative Integrative-Interdisciplinary Digital-Design Studio (CIDS):



Digital Concept Model



Digital Concept Model



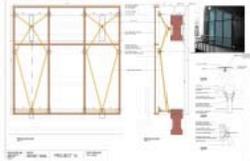
Digital Concept Model



Digital Concept Model



Full Scale Cladding MockUp Installation — Based on a CIDS research grant and several fall-on functions prepared for an International Cladding Course taught by Professor Jesse Chubb. Architects: Kevin Ding, Architectural Engineering, and Michael Reardon, Construction Management. International primary student teams designed the concrete facade to install a structural and construction wall system. Detailed details will be used as teaching tool for all College Architecture courses. Construction is in progress.



Modular Display Units Student Work Archive —

Overview: The modular display units were built to increase the efficiency of the student work archive room. The storage space was almost tripled in capacity for a relatively small space. The initial inspiration to do this was for the impending NAAB visit winter quarter 2005, so the program would not have to take off-line 2 studios for a period of an entire year and the program would also obtain a permanent student archive room. The design of the new MDUs used most of the 2x4s (30% reused in new design) from the existing shelving system. Archive room is open for faculty to bring students in for visits to see the range of work of the entire program.

Client: The College and Department of Architecture (Head + Student Fee Committee)
Course Linkages: Third Year Design (ARCH 351,352,353) and Building Technology Systems Activity (ARCH 341,342)
Faculty / Professional Consultants: Director of College Support Shop
Lead Students: Shoko Ibaragi and Elizabeth Gomes
Budget/Schedule: \$13,000 grant received from the Architecture Department's Student Fee Committee to build 13 modular display units. Project completed right before the last NAAB accreditation visit winter quarter 2005.

Appreciation Wall (Poured In-Place Concrete)—

Overview: Appreciation wall will recognize all of the individuals who worked on the design development and/or donated materials for the construction of a tensile structure for the College. The appreciation wall is also part of the structural support system for the tensile structure.

Client: The Construction Management and Architectural Engineering Departments

Course Linkages: Third Year Design (ARCH 353), Building Technology Systems Activity (ARCH 342) and Construction Management Senior Project Students

Faculty / Professional Consultants: Faculty: Elbert Speidel, Construction Management + Professionals: structural engineer, concrete subcontractor, campus facilities department

Disciplines Involved: Architecture (lead students: Jai Kumaran, Zhong Ren Huang, Chris Nikkel, Hilcia "Christy" Pena, Erika Peel), construction management, architectural engineering (structural engineering)

Budget/Schedule: \$200 + (plywood for form work + misc. other supplies), concrete being donated by local subcontractor. Schedule: 2 hour Charrette. Formwork design and construction several weeks. Concrete Pour and installation in a month.

Intimate Transactions Temporary Theatre Pneumatic Structure —

Overview: A pneumatic structure was designed and constructed to house the Intimate Transactions interactive technology system. This technology system allows for each participant to climb aboard a device called the Body Shelf. This Body Shelf device is kind of like a computer mouse that you stand on, and it tracks your movements as your travel through a virtual world to interact and collaborate with one another through a live Internet connection. This virtual collaboration is based on accomplishing a series of goals for sharing and sustainability. The participants are also each immersed in a complex sound environment comprised of an advanced surround sound system of eight large speakers combined with small wearable speakers that send sound vibrations directly to the body of each participant.

Clients: Electrical Engineer Inventor of the Intimate Transactions Technology System (Keith Armstrong), The Director of the New Media Arts Program (David Gillette)

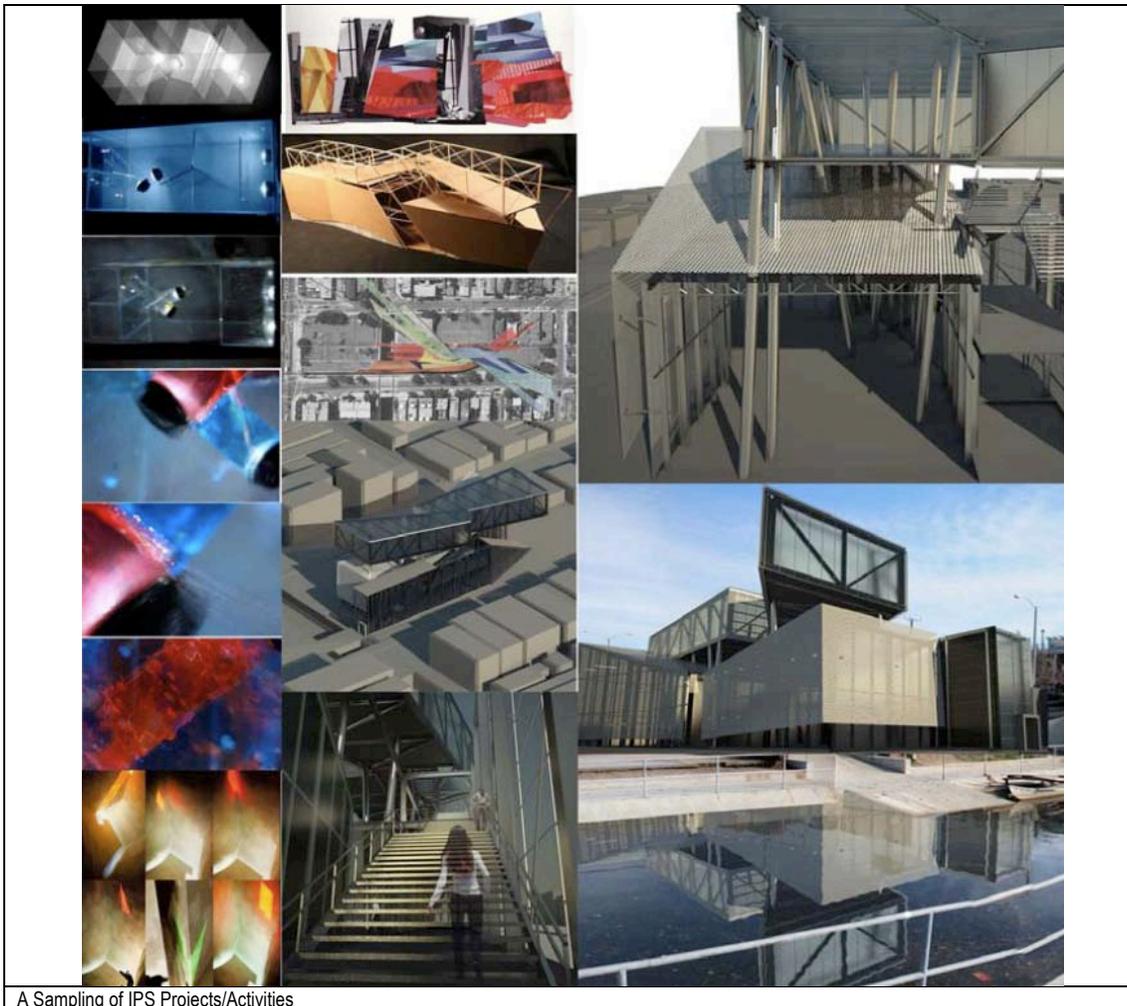
Course Linkages: Third Year Design (ARCH 353), Building Technology Systems Activity (ARCH 342), New Media Arts III (ENGL 413), Polymers in Construction (CM 470)
Faculty / Professional Consultants: Expert on Polymers and Pneumatic Structures (Elbert Speidel), Electrical Engineer Inventor of the Intimate Transactions Technology System (Keith Armstrong)
Disciplines Involved: Over 100 students involved in the design and construction of this project. Architecture, architectural engineering (a.k.a. structural engineering), art & design, construction management, computer science, new media arts/english, landscape architecture.
Budget: \$1,000 (Rolls of black and white Polyethylene [1/4 of a mile long] + misc. supplies).
Schedule: Four weeks total: 2 weeks to design and 1 week to construct.

Selected CIDS Projects

Integrated Project Studio (IPS) - 3rd Year Design Studio Integrated with an Environmental Control Systems Activity Course:

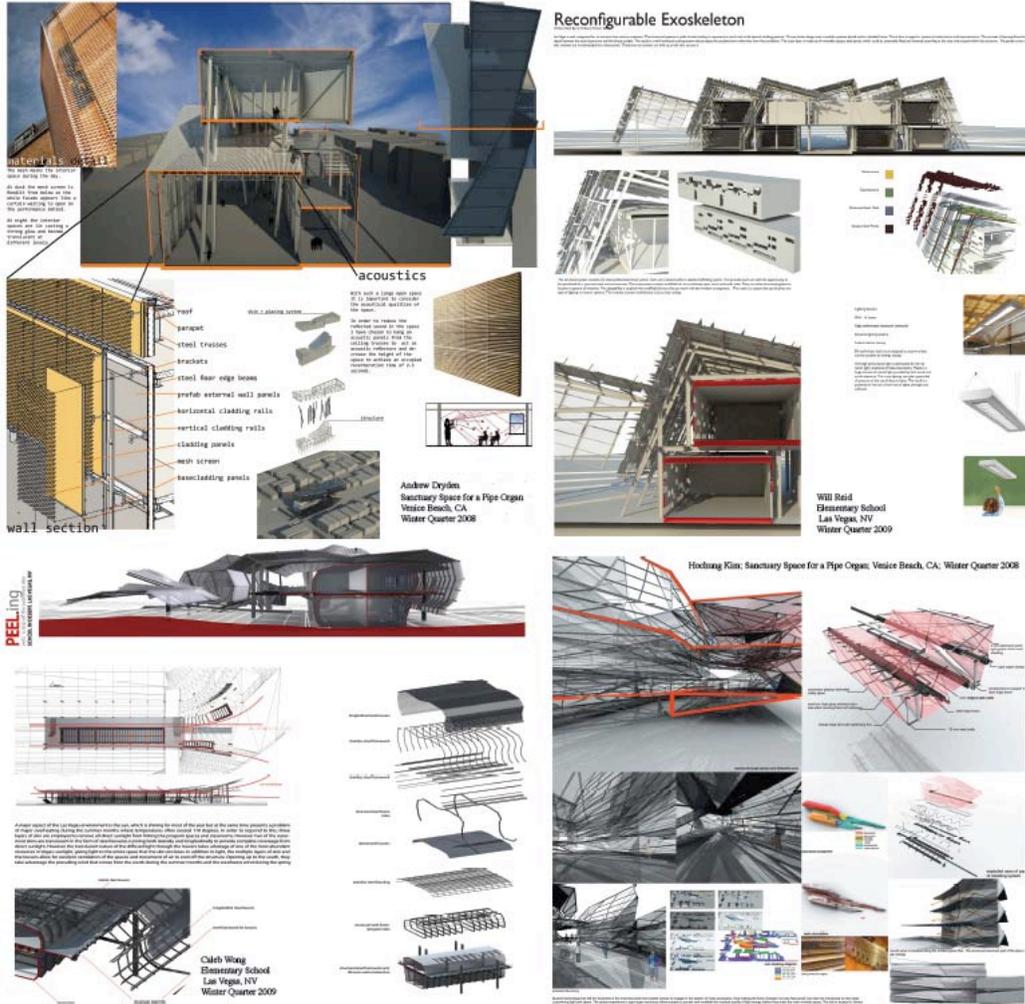
Professor Thomas Fowler IV, AIA, NCARB in collaboration with Full-Time Lecturer and managing principal of a local firm Barry Williams, received a 2009 American Institute of Architects Honors Award for work with their Integrated Project Studio (IPS).

Over a four-year period Professor Thomas Fowler, IV, AIA and Full-Time Lecturer and managing principal of a local firm Barry L. Williams, AIA have collaborated in teaching the Integrated Project Studio. The IPS combines the content of a third year building design studio (BDS) and that of a building environmental systems studio (BES). The difficulty of synchronizing the environmental systems lecture topics (taught by another instructor), with the building design and environmental systems studios (one of ten sections) are formidable in such a short 10-week period. So instructors linked and tightly choreographed these two studios by framing the coursework into thirds, to emphasize to the third year students that environmental content is not distinct from building design. In the first third of the quarter, students worked in collaborative case study project teams in BES to acquire a "rules of thumb" technical working knowledge of core topics such as day lighting, electric lighting, thermal performance of buildings, acoustics and water systems (building spaces and systems evaluated); and also teams worked on parallel assignments with the same topics in BDS for an understanding of the poetic implications for environmental systems (light/sound/water machines, day/electric light and acoustical installation activities). The second third of the quarter is the application of acquired technical and poetic knowledge for inFORMing each of the student's individual design projects in BDS. This is where students continued their understanding that buildings are not discrete objects but rather an assemblage of systems and elements that are connected to and interact with the larger world. Course discussions are focused less on the what (what it is, what it looks like) and more on the how (how it works, how it interfaces with the surrounding environment). The final third of the course time is the refinement of each student's individual building design project based on the input from both instructors.



A Sampling of IPS Projects/Activities

Integrated Project Studio (IPS)



The above architecture projects illustrate how third year students have integrated lessons learned from environmental control systems precedent studies (day/electric lighting, acoustics, thermal optimization, etc.) for informing the architectural outcomes of a range of projects. The project locations range in building types (Elementary School and A Sanctuary Space for a Pipe Organ) and site locations (Venice Beach, California and Los Vegas, Nevada). Projects show site configuration, cladding system development, component parts of buildings (structure, circulation, etc) and the vertical cross-section of spaces.

Selected IPS Projects

Community Design + Build Project:

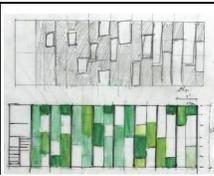
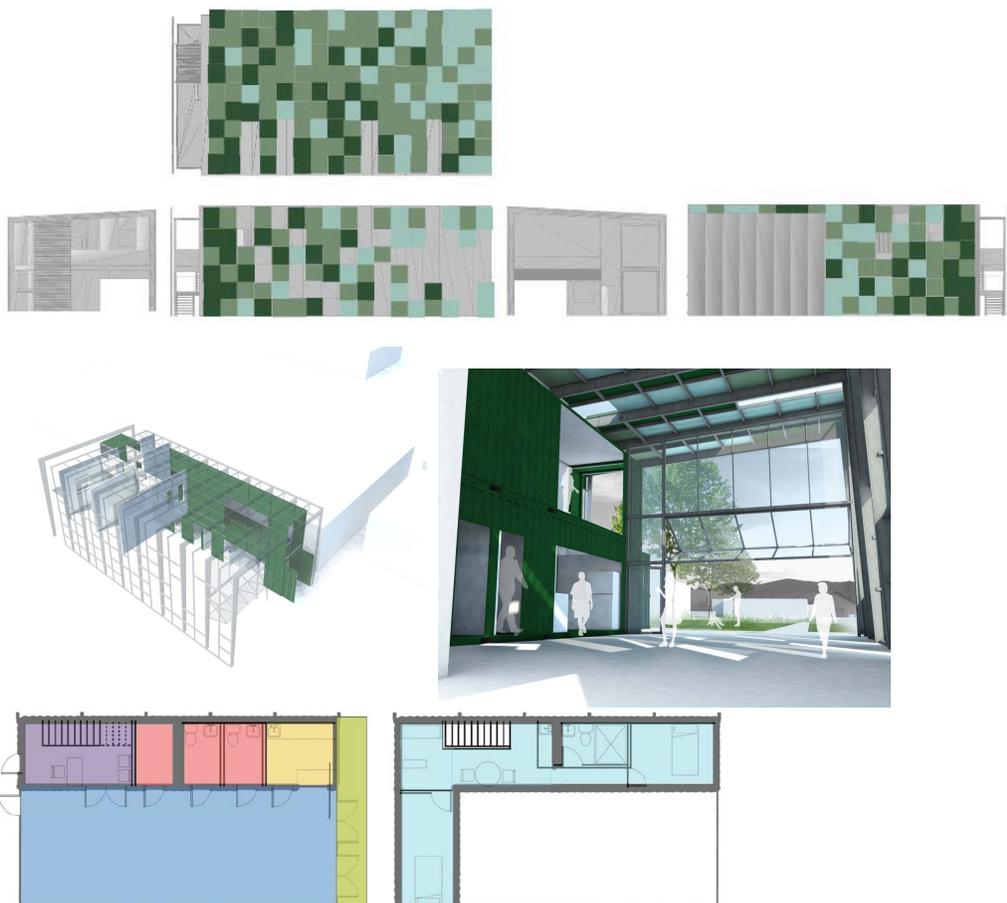
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| CIDS PROJECT CATEGORY: | SHORT-TERM (3-6 WEEKS LONG) DESIGN AND CONSTRUCTION PROJECTS |
| Project Title: | Intimate Transactions Temporary Theatre |
| Date: | Spring 2007 |
| Course Linkage(s): | Third Year Design (ARCH 353), Building Technology Systems Activity (ARCH 342), New Media Arts III (ENGL 413), Polymers in Construction (CM 470) |
| Disciplines Involved: | Architecture, architectural engineering (structural engineering), art & design, construction management, computer science, new media arts/english, landscape architecture. Over 100 students (architecture students: Bradley Chicoine, April Fame, Walter Garcia, Paul Goss, Matthew Granelli, Jeff Hammerquist, Ben Handy, Zhong Ren Huang, Tucker Huey, Jason Immaraju, Ahmadrza Kashani, Karen Kemp, Jai Kumaran, Ryan Lamb, Arthur Loh, Guillermo Perez, Jason Pignolet, Alexander Polzin, Lulu Saleh, plus other students from the other disciplines) involved in the design and construction of this project. |
| Technology Used: | Digital modeling, and heat sealer machine to construct pneumatic structure skin. |
| Design Studio Project Connection: | Students' in ARCH 353 & 342 used the Intimate Transactions Structure as point of departure for developing the third year design studio project (Satellite Automobile Assembly Plant Design Project). |
| Client(s): | Keith Armstrong, Inventor of Intimate Transactions, David Gillette, Director of Liberal Arts and Engineering Studies and Director of the New Media Arts Program. |
| Faculty / Professional Consultants: | Professor Thomas Fowler, CIDS Director, Elbert Speidel, Construction Management Instructor and Expert on Polymers and Pneumatic Structures. |
| Budget: | \$1,000 (Rolls of black and white Polyethylene [1/4 of a mile long] + misc. supplies) |
| Schedule: | Four weeks total: 2 weeks to design and 1 week to construct |
| Project Description: | A pneumatic structure was designed and constructed to house the Intimate Transactions interactive technology system. This technology system allows for each participant to climb aboard a device called the Body Shelf (it is like a computer mouse that you stand on), which tracks your movements as your travel through a virtual world and interact and collaborative with one another through a live Internet connection. This virtual collaboration is based on accomplishing a series of tasks of sharing and sustainability. The participants are also each immersed in a complex sound environment comprised of an advanced surround sound system of eight large speakers combined with small wearable speakers that send sound vibrations directly into the body of each participant. |

Community Design + Build Project:



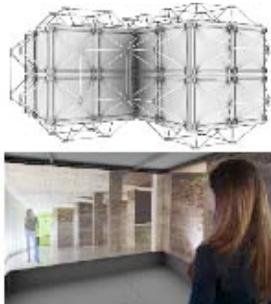
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| CIDS PROJECT CATEGORY: | SHORT-TERM (1-5 DAYS) CONCEPTUAL PROJECT GENERATION CHARRETTE |
| Project Title: | Appreciation Wall — Poured-In-Place Concrete |
| Date: | From Spring 2007 — Current |
| Course Linkage(s): | Third Year Design (ARCH 353), Building Technology Systems Activity (ARCH 342) and Construction Management Senior Project Students. Designed by students Zhong Ren Huang and Jai Kumaran. CIDS work study students Chris Nikkel, Christy Pena and Erika Peel refined concept and design formwork system for concrete pour. |
| Disciplines Involved: | Architecture, construction management, architectural engineering (structural engineering) |
| Technology Used & (Technology Learned About): | Digital modeling (form work design and concrete codes, the latest technology of concrete, and the facilities approval process) |
| Design Studio Project Connection: | Limited connection to design studio work since accomplished too late in the quarter to be of any integration help for student studio projects. |
| Client(s): | Construction Management and Architectural Engineering Departments |
| Faculty / Professional Consultants: | Elbert Speidel, Construction Management Instructor, Structural Engineering Department, concrete subcontractor, and campus facilities department |
| Budget: | \$200 + (plywood for form work + misc. other supplies), concrete donated by subcontractor (Hanson). |
| Schedule: | One-day charrette for 4 groups of architecture to develop proposals for appreciation wall. One solution selected to build and CIDS work-study students made refinements in formwork design to simplify construction, and constructed the formwork to prepare for pour. |
| Current Status: | Wall installation is waiting for the final approval from the campus facilities department to be installed in place. |
| Project Description: | Appreciation wall will recognize all of the individuals, who worked on the design development and/or donated materials for the construction of a tensile shade structure, which the appreciation wall is a part of the support for. |

Community Design + Build Project:

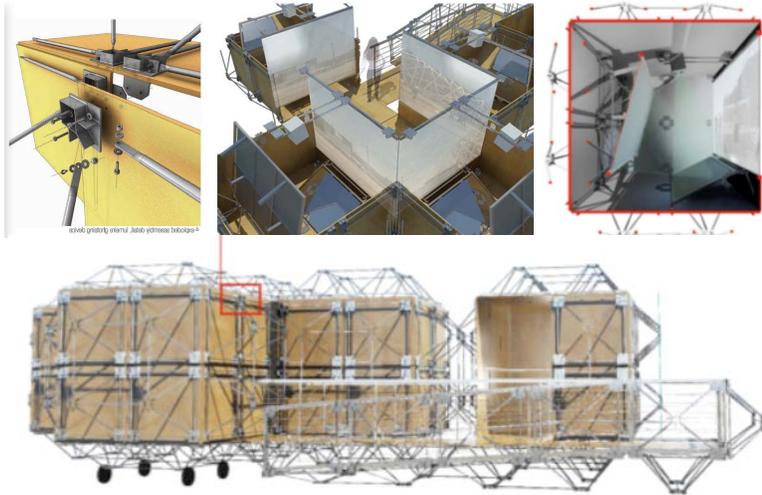
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|  |  |  |  <p>QUILT INTERACT RELAX SOCIALIZE RECREATE HEAL INTERVIEW MEET/DATE WORK/STUDY WEAVE SUPPORT READ ATRIUM TRANSITION</p> |
| CIDS PROJECT CATEGORY: | | SHORT-TERM (3-6 WEEKS LONG) DESIGN AND CONSTRUCTION PROJECTS | |
| Project Title: | | Local Housing Authority Community Center | |
| Date: | | Spring 2010 | |
| Course Linkage(s): | | Third Year Design (ARCH 353), and Building Technology Systems Activity (ARCH 342) | |
| Disciplines Involved: | | Architecture, Structural Engineering, Contractor/Estimator and Energy Consultant | |
| Technology Used: | | Digital modeling | |
| Design Studio Project Connection: | | Project provided students knowledge regarding structural and cladding systems for individual design projects that they were developing in the design studio. | |
| Client(s): | | Housing Authority of San Luis Obispo, CA + HO:ME Interdisciplinary Design Team | |
| Faculty / Professional Consultants: | | Professor Thomas Fowler, CIDS Director + HO:ME Design Team and Eco Steel Company | |
| Budget: | | Projected @ \$200,000 | |
| Schedule: | | Phase One (Spring 2010)- Three weeks total: students worked in groups and had three rounds of design proposals to select this final version. Phase Two (Fall 2010 – Spring 2011)- to develop construction documents of project. Phase Three (2011-2011) Construction. | |
| Project Description: | | Use of Shipping Containers for Developing Prefabricated Core Utility Components of the Building (Bathroom and Kitchen areas) and use of a structural steel frame system and composite cladding panel systems from Eco Steel. | |
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Components of Community Center: Skin Pattern Design, Axonometric Showing Structure and Program, Immersive View of Community Space and Plans

Research Grant:

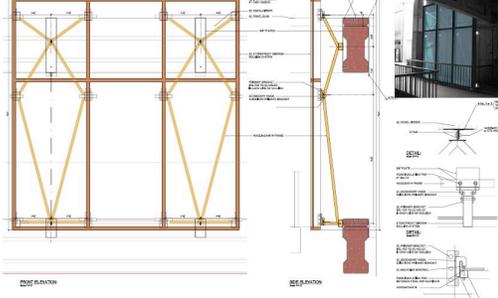


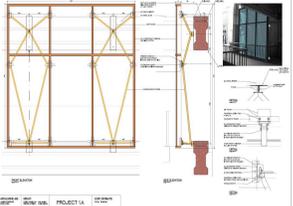
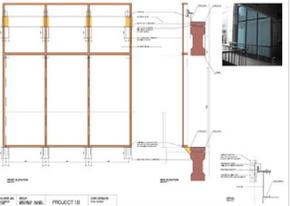
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| PROJECT CATEGORY: | SHORT-TERM (1-5 DAYS) PROJECT CONCEPT GENERATION CHARRETTE |
| Project Title: | Lumiere Ghosting Portable Virtual Reality Theatre |
| Date: | 2005 — Current |
| Course Linkage(s): | Third Year Design (ARCH 351, 352, 353) and Building Technology Systems Activity (ARCH 341,342) |
| Disciplines Involved: | Architecture, Architectural Engineering, Construction Management, and New Media Arts. |
| Technology Used and (Technology Learned About): | The construction documents are being developed using Revit, Building Information Modeling (BIM) software. |
| Design Studio Project Connection: | Design studio courses have had students work in groups to propose a range of solutions for this portable theater. |
| Client(s): | New Media Arts Department |
| Faculty / Professional Consultants: | Architecture and New Media Arts |
| Budget: | Projected cost of \$20,000 to build structure |
| Schedule: | Prototype of structure is currently being built. |
| Project Description: | This is a portable rear projection virtual reality theater that allows for persons to have picture captured for mapping onto avatar for interactive exchange with another person via this immersive room. |



Portable Theatre Components (cladding system detail, interior view of immersive projection screens, detail of rear projection system and overall structure showing exoskeleton system)

Research Grant:

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| <p>CIDS PROJECT CATEGORY: CIDS RESEARCH GRANT PROJECT</p> | | |
| <p>Project Title:</p> | <p>Proposed Full-Scaled Cladding Mock Up</p> | |
| <p>Date:</p> | <p>2003 Grant received from the College's Innovation in Teaching Fund</p> | |
| <p>Course Linkage(s):</p> | <p>Third Year Design (ARCH 353), Building Technology Systems Activity (ARCH 342), and Interdisciplinary (Arch, Arce and CM) Building Cladding Course (ARCH 460) [by other instructors]</p> | |
| <p>Disciplines Involved:</p> | <p>Original grant proposal (Architecture, Construction Management) Proposed installation of full-sized cladding system (Architecture, Construction Management, Architectural Engineering, and Cladding Subcontractor)</p> | |
| <p>Technology Used and (Technology Learned About):</p> | <p>Digital modeling (curtain wall technology)</p> | |
| <p>Design Studio Project Connection:</p> | <p>Architecture students in instructor's Third year Design Studio and architecture, construction management and architectural engineering students in Cladding Course have learned about building cladding systems in being involved with the work that has been done to date for installing the curtain wall system</p> | |
| <p>Client(s):</p> | <p>For the Installation: The College and University's Facilities Department</p> | |
| <p>Faculty / Professional Consultants:</p> | <p>Architecture (Building Technology Systems faculty), Construction Management, Architectural Engineering, and Curtain Wall Subcontractor</p> | |
| <p>Budget:</p> | <p>\$4,000 grant develop the framework for building a series of full-scaled cladding mockups, drawings, collecting materials for developing a database of cladding systems. Full Scaled Unitized Curtain Wall System Donated by Subcontractor.</p> | |
| <p>Schedule:</p> | <p>Schedule for installation currently on hold – waiting approval from the university's facilities department</p> | |
| <p>Project Description:</p> | <p>The grant provided funds to develop the framework for building a series of full-scaled cladding mockups, drawings, collecting materials for developing a database of cladding systems, so students in architecture, construction management and architectural engineering students can obtain a better understanding of the issues (from all the different discipline perspectives) associated with the design, construction and installation of building cladding systems. The Building Cladding Course had interdisciplinary teams design the connection details to hang this curtain wall system in a central location of the college so it can be used as a teaching tool.</p> | |

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| <p>More Expensive Cladding System Installation (with x-bracing) with Photo Montage installed (right)</p> | <p>Less Expensive Cladding System Installation (without x-bracing) with Photo Montage installed (right)</p> | | |

Exhibitions and Furniture:

reKinetic Design Studio

Thomas Fowler IV, Cal Poly Architecture Dept.



Architecture Students

- Jessie Biota
- Edgar Camarillo
- Grant Cogan
- Anthony Fossi
- Marcela Gutierrez
- Ben Hale-Campbell
- Emily Ho
- Breanna Howard
- Nathan Kiatkulpiroone
- Emily Kirwan
- Luis Mota
- Abigail Ng
- Nick Pappas
- Luis Ramirez
- Shannon Smith
- Karen Wang
- Rachel Janson
- Alicia Ginsberg
- Ian Carney






The reKinetic Studio led by architecture professor Tom Fowler, is a two-quarter (winter and spring) third year architecture course where students learn the practical implications of how to design buildings that effectively respond to the surrounding environment. The full-scaled kinetic sculptures provide a way to look at enclosure systems of space. The series of installations have been developed from a range of collaborative design studio experimental studies for building enclosure systems. During the third year of the architecture program, students in the practice portion of the curriculum learn about the building enclosure systems (typically referred to as 'skins', or 'cladding') through case study investigations accomplished in teams of 2-3 students. From this research, students are required to translate this knowledge in the design-development of their own quarter-long building design project.

There were four rekinetic installations:
 skINHALE
 We've Lost our Marbles!
 The Light Modulator
 Swarm
 Wind Wall

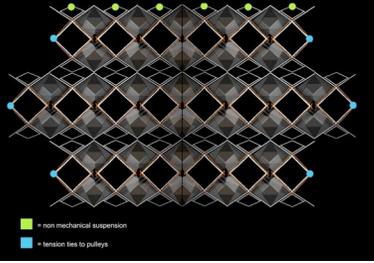
Estimated Cost

- 2 Umbrellas per module
- Height = 7 modules
- Width = 10 Modules
- Total with taper = 60 modules
- Cost per module: \$2.40
- Umbrella Total: \$144

Additional Materials

- Stings
- Brass aluminum spacers
- Pulleys
- Clamps

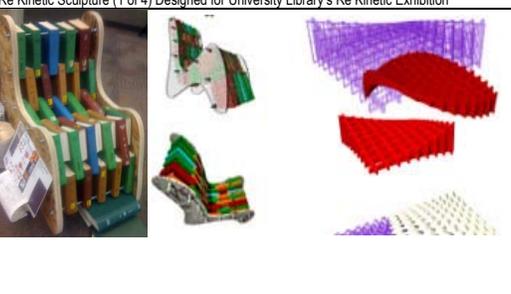
Estimated Total \$200



Re Kinetic Exhibition Poster



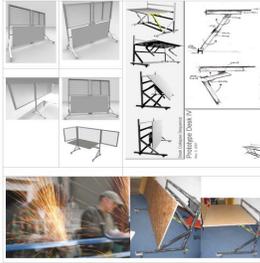
Re Kinetic Sculpture (1 of 4) Designed for University Library's Re Kinetic Exhibition

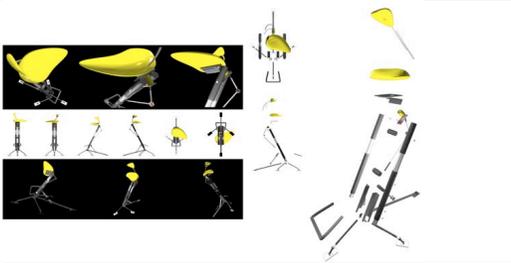


Cube Chair (Top Left) and Boat Lounge (Bottom), both won top honors in the First Annual "Vellum" Furniture Competition 2005

Furniture (1 of 4) Designed for University Library's Book Fair Spring '09 (Constructed out of the university library's discarded books)

Tension Diagram Table, 2005 (Top Right)

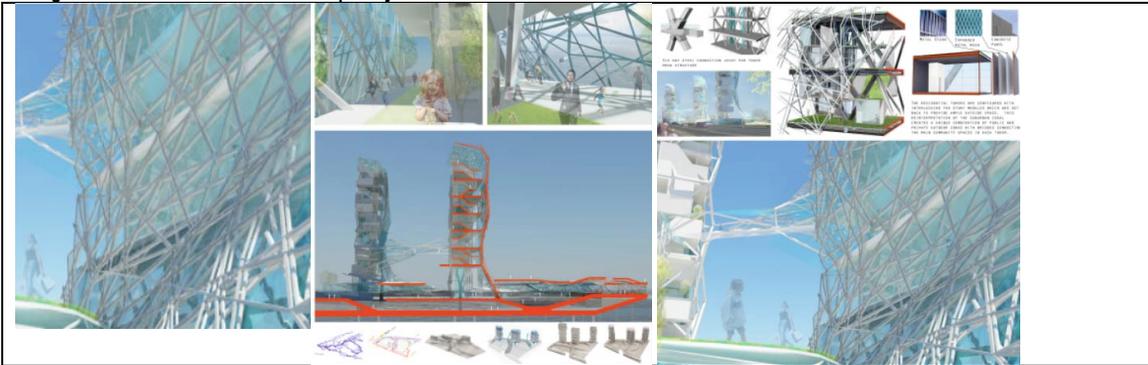




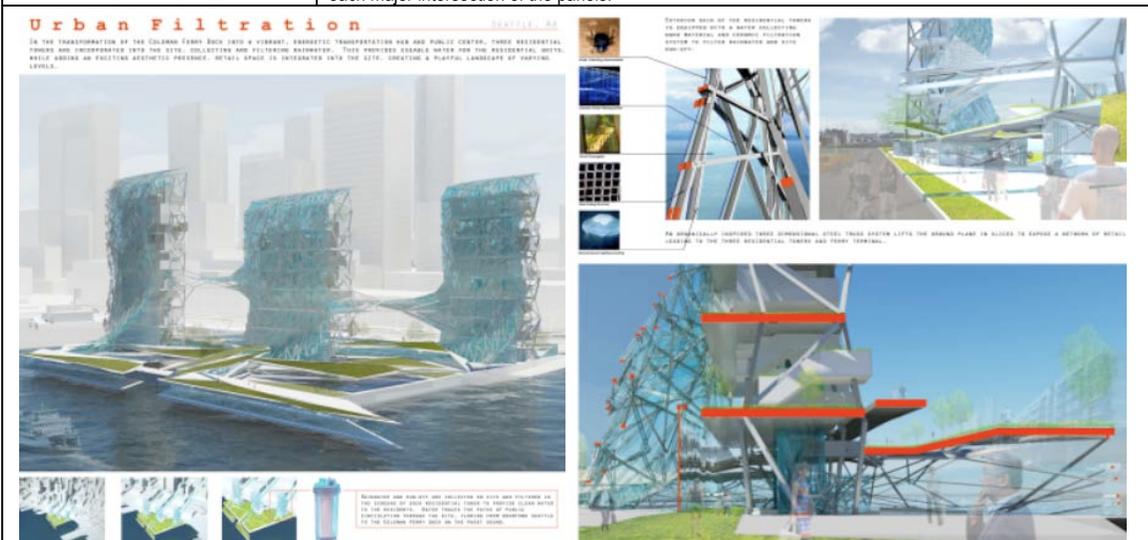
Independent Study WorkStation Prototype, Spring 2003, Hugo Martinez

Independent Study Fourth Year Student – Stool Design Fall 2001, Chris Talbot

**Award Winning Student Design Studio Work (Selected):
Design Studio Work – 4th Year Interdisciplinary Studio**



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| CIDS PROJECT CATEGORY: | INTERDISCIPLINARY 4TH YEAR DESIGN STUDIO |
| Project Title: | Urban Filtration |
| Date: | Winter & Spring 2008 |
| Course Linkage(s): | Fourth Year Architecture Design (ARCH 452 + 453) |
| Disciplines Involved: | Architecture & Architectural Engineering |
| Technology Used and (Technology Learned About): | Advanced digital modeling, voronoid pattern used to generate building's cladding system, and building's structural system integration cladding and program. |
| Design Studio Project Connection: | Interdisciplinary Team of Students: Architecture: Megan K. West, Rachel Glabe & Architectural Engineering: Catlin Potter, Leigh Guggemos |
| International Student Design Competition Recognition: | Honorable Mention for 2008 ACSA/AISC (Steel) Competition |
| Faculty / Professional Consultants: | Thomas Fowler IV (Arch), Jim Doerfler (Arch) Mark Cabrinha (Arch), and Kevin Dong (Arce) |
| Budget: | N/A |
| Schedule: | Project designed during Winter and Spring 2008. |
| Project Conceptual Description of Cladding System: | A system of five materials is employed to filter the water. The first layer, located on the outer most portion of the screen, is the water-collecting nanomaterial coating. Inspired by a desert beetle, a pattern of alternating raised hydrophilic (water attracting) sections, which cause tiny water droplets to attach, and hydrophobic (water repelling) surfaces, which catch droplets that spill over from the hydrophilic section is used to attract condensation in the air onto the screens to be filtered. Second, a ceramic layer uses the material's natural microscopic pores to prevent the passage of bacteria or viruses while water molecules emerge from the filter free of contaminates. The third layer is made up of Powerglass panels, glass that is imbedded with translucent photovoltaic cells without visible lines or patterns to generate electricity for the site. The glass also protects the structural steel layer, which is constructed as a truss system similar to the retail structure, from the corrosive effects of water. The last material is a bioluminescent coating applied to the structural steel facing the residential units to provide a diffuse glow during overcast weather and at night. The various screen layers are held together with a simple bolt system that runs through the ceramic, glass and steel at each major intersection of the panels. |



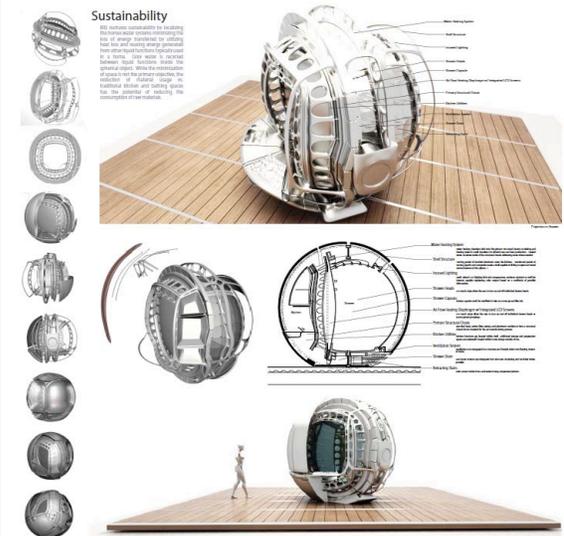
Award Winning Student Design Studio Work (Selected):

Design Studio Work – 3rd Year Design Studio (Fall Quarter 2009)



3rd Place Winner AISC/ACSA '10 Open Competition + 1st Place AIAS/MBT Hotel Competition

Design Studio Work – 5th Year Independent Study (09-'10) – "Project Iris", Cody Williams



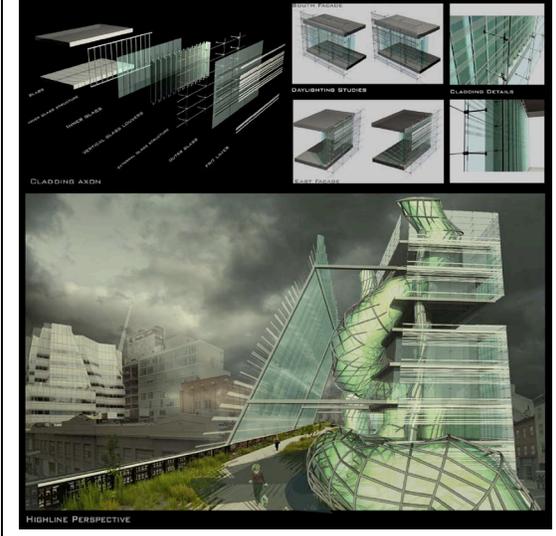
Honorable Mentions: AISC/ACSA '10 Open Competition + D3 Housing Tomorrow

Fourth Year Independent Study



Rachel Glabe
Second Place '07 AIAS/Kawneer Pediatric Rehabilitation Center Competition, NYC

Design Studio Work – 3rd Year Design Studio (Winter Qtr '09) – "Emerge", Rachel Jenzen



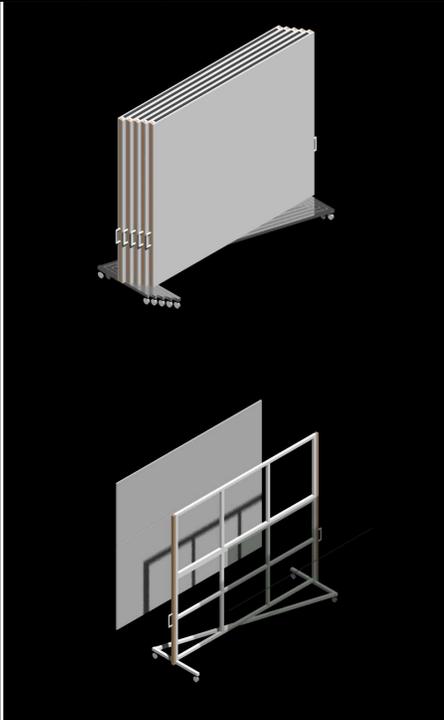
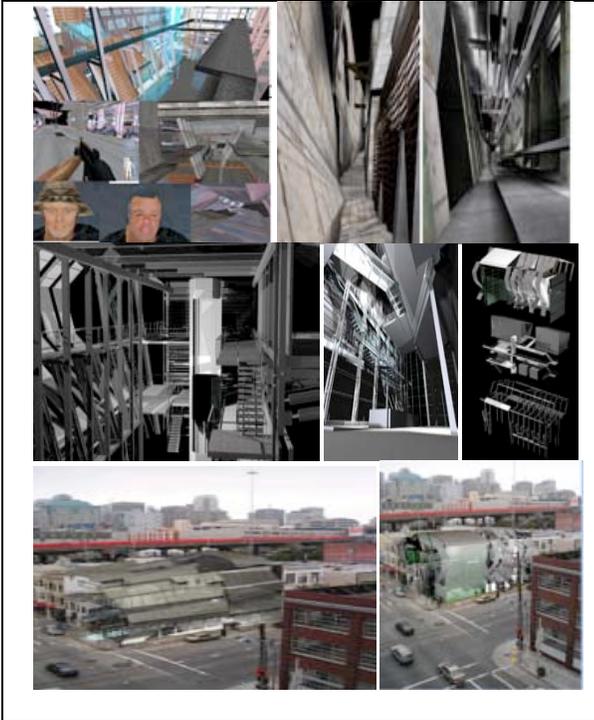
Best of Show (1st Place) 2010 3rd Year Juried Review

Fourth Year Independent Study



Greg Taylor
Honorable Mention '07 AISC/AISC Competition

Independent Study Design Studio Project and Movable Furniture Project + Grant (Selected):



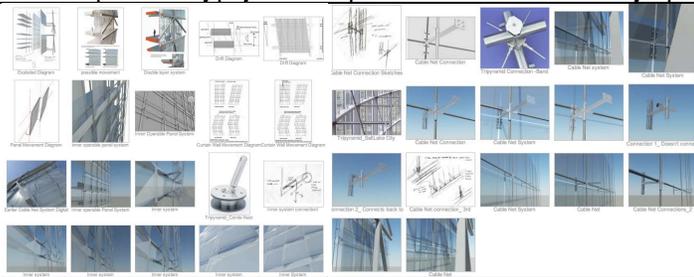
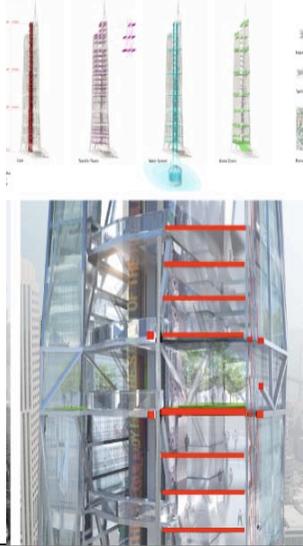
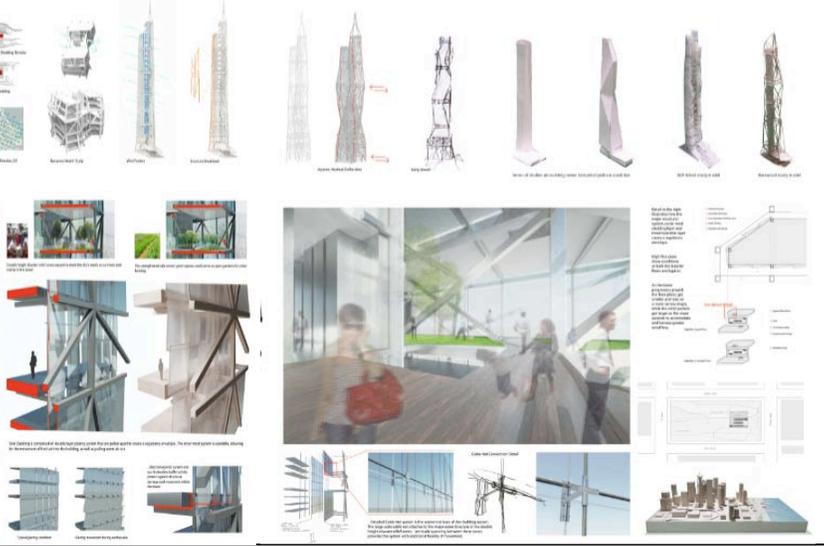
Independent Study Projects – Range of Students
Creating Video Gaming Environments, Spring 2006

Independent Study Project – Stacking Displays System
Prototype Built, Spring 2010

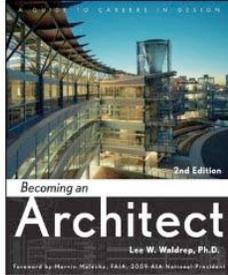


Proposed Design Authoring Database (DAD)
Research Grant Project, '00 to Current

Award Winning Student Design Studio Work (Selected):
Independent Study 5th Year Project (The first independent study project in the department with committee of industry experts)

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| CIDS PROJECT CATEGORY: | INDEPENDENT STUDY THESIS — BUILDING DESIGN |
| Project Title: | Frequency In Flux – Seismology Center in San Francisco, CA, By Rachel Taylor |
| Date: | Spring 2008 — Winter 2009 |
| Course Linkage(s): | Fifth Year Architecture Design (ARCH 492) |
| Disciplines Involved: | Thesis Committee Chair for committee composed of outside consultants from Industry which included design/build cladding consultant and engineers (structural, environmental and mechanical) and two faculty members from architecture (building systems and advanced technology fabrication expertise) and two faculty members from structural engineering (seismic and building systems integration) |
| Technology Used and (Technology Learned About): | Advanced digital modeling, cladding system design and construction, and 3D printing |
| Design Studio Project Connection: | Thesis project provided students in third year and fourth year studios with a greater understanding of cladding systems design. |
| International Student Design Competition Recognition: | Honorable Mention for 2009 ACSA/AISC (Steel) Competition |
| Faculty / Professional Consultants: | Committee composed of Professors Doefler, Cabrinha, Dong & Rihal (structural engineers) with leading industry experts: Structural Engineering (Mark Sarkisian, Head of SOM/SF's Structural Engineering Department, Environmental Engineering (Keith Boswell, Director of SOM/SF's Technical Division), Mechanical Engineer (Clark Bisel, Senior Vice President for Flack + Kurtz, SF, CA) and Cladding Designers/Subcontractors (Tripyramid, Boston, MA). |
| Budget: | N/A |
| Schedule: | Thesis project duration: Spring Qtr '08, Summer Qtr '08 (competitively selected for summer internship at SOM/SF, CA), Fall Qtr '08 & Winter Qtr '09 [Graduated June '09 (B.ARCH)] |
| Project Description: | A Seismological research and monitoring facility designed cable of withstanding the largest possible quake and outfitted with the latest prediction technology would be of great value to the city. The tower's ability to function as safe zone in the event of an earthquake would provide a much needed disaster relief safe harbor, while as educational aspect could inform the public and help them to be better prepared. |
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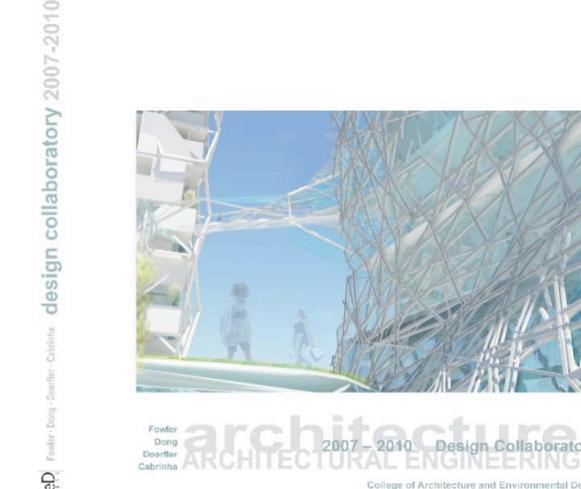
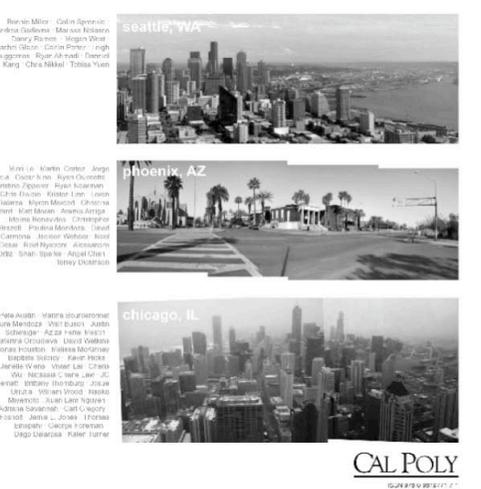
Books:



"A Teacher's View", Lee Waldrep, editor, *Becoming an Architect*, Wiley 2006 (republished Wiley 2009)



2007-2010 *Design Collaboratory*, Thomas Fowler, editor, AeD Press 2010, Architecture Department, College of Architecture and Environmental Design, California Polytechnic State University, San Luis Obispo, CA, ISBN 978-0-9819771-7-1



2007-2010 *Design Collaboratory*, Thomas Fowler, editor, AeD Press 2010, Architecture Department, College of Architecture and Environmental Design, California Polytechnic State University, San Luis Obispo, CA, ISBN 978-0-9819771-7-1

Former Students (Selected):

ADRIANA CUELLER, BARCH '00

A student in my Fall Quarter '97 Third Year Design Studio and Constructability Seminar Course

Currently: Started a small practice in Tijuana, Mexico and teaching part-time at the New School, San Diego, CA

Excerpts from a letter on 10/22/06:

"I was always inspired by the work exhibited by students of Thomas Fowler on the outdoors of the architecture building. In the fall of 1997, I carefully choose Professor Fowler for my first third-year design course in Cal Poly."

"This (his) class has been a crucial turning point in my career. Through intensive multi-task exercises, Professor Fowler strongly emphasized the value of process in architecture. The intense production rested on a well-elaborated work structure that released each student to follow a path of creativity. Since the early stages of the class, a highly stimulative environment was created through the immediate production and interactive discussions between classmates."

"In addition to Fowler's successful pedagogic values in architecture, his kind, energetic and open personality facilitated an accessible and collaborative learning environment. His support and advices guided my motivation acquired in his class and opened myself for a wide range of architectural explorations."

"The impact Professor Fowler has had on me is still un-veiling after so many years. Evidently, what I experienced in his class gave me the security to expose myself to further challenges and I feel extremely grateful for it."

Post Cal Poly:

Adriana worked for Teddy Cruz for several years in San Diego, then attended Harvard Graduate School of Design where she finished a Master Degree on Design Studies in 2004. While at Harvard, she was awarded the Annual Award for Excellence in Housing Design for the architectural and urban proposals for Huixquilucan, México. She was awarded a 11-month Rome Prize Fellowship for Design in 2006 by the American Academy in Rome (at a young age of 29 years old), where she developed her independent research called *Trajectories*: an exploration of mapping through movement, the transformative aspects of Rome perceived today. Worked for Teddy Cruz, Award Winning Architect/Teacher in San Diego and Rafael Vinoly, NY.

DOMINIC LEONG, BARCH '01

A student in my Spring Quarter '99 Third Year Design Studio and Constructability Seminar Course

Currently: Started his award winning practice (most recent award 09/20/2010 winner of the Building Fashion Design Challenge Competition), Leong Leong Architecture, New York, < <http://www.leong-leong.com/>> and founding partner (1 of 3) of PARA.

Excerpts from a letter on 10/20/06:

"Tom conducts his studio with an infectious charisma that brings a level of energy to the studio that I still find inspiring. His commitment to his studio is unwavering and tireless. I consider Tom a significant and enduring influence on my development as an architect and future educator. My education at CalPoly, in particular Tom Fowler, has provided me with a robust foundation for pursuing my aspirations as an architect in the most critical and demanding environments. I'm very pleased to recommend Tom with my absolute highest regards."

"Tom's emphasis on the rigorous exploration of representational techniques, from analog to digital, provided me with the tools to develop my own architectural voice. As my ideological positions have shifted and matured over the course of my education, many of the techniques and working methodologies that I learned in Tom's studio still inform my thinking process. Specifically, the simultaneous exploration of multiple representational techniques such as diagrams, drawings, analog and digital models has become an invaluable skill in a high-intensity, design-oriented firm such as Bernard Tschumi Architects."

Post Cal Poly:

Dominic attended Columbia University where he received a Master's in Advanced Architectural Design in 2003 with honors. He worked with Bernard Tschumi Architects in New York City for three years after graduating from Columbia GSAPP. During that time period, he was actively involved with the realization of a 6,000 seat concert hall in Limoges, France, as well as numerous international competitions. He designed and project managed an installation for the Swiss Pavilion in the 2006 Venice Architecture Biennale. In addition, he was a teaching assistant for Bernard Tschumi's studio at Columbia GSAPP (Spring 2006). Winner of the 2007 Young Architects Award (with Jonathan Lott, & Brian Price), Architectural League of NY for PARA-Project, New York City,

JONATHAN LOTT, BARCH '03

A student in my Winter Quarter '01 Third Year Design Studio and linked Environmental Controls Seminar Course (Taught by another instructor)

Currently: Assistant Professor of Architecture @ Syracuse University and founding partner (1 of 3) of PARA, an award winning firm.

Excerpts from a letter on 10/21/06

"In nine years (at the time of the letter) of architectural training, Tom Fowler has easily been one of my greatest influences."

"I have been asked several times since by prospective graduate students, what is the one thing that best prepared me for my experience at the GSD. My response is always: Tom Fowler's studio."

"Tom's studio also introduced me to the collaborative working environment of digital platforms. And while design software is obviously important media to master for today's architect, I would argue that Tom's teaching of communication through digital platforms is absolutely vital in an architect's training. This prepared me well for my graduate education, but equally for the working environment I experienced while at OMA."

Post Cal Poly:

Jonathan received a Master of Architecture from Harvard's Graduate School of Design (June 2005) with Distinction. Upon graduation, awarded the John E. Thayer Scholarship, the Alpha Rho Chi Medal, and his final studio project, for Rem Koolhaas, was nominated for the James Templeton Kelley Prize. Following graduation he accepted a summer teaching position with Harvard and then took a job with OMA in New York City as a project architect on their Louisville tower. Project editor for PRAXIS Journal of Writing + Building and recently received a Graham Foundation grant to publish a proposal called *PARAthesis*, discussing research initiatives within academe. Winner of the 2007 Young Architects Award (with Dominic Leong, & Brian Price), Architectural League of NY for PARA, New York City

FRANK T. MAHON, BARCH '03

A student in my Winter Quarter '01 Third Year Design Studio and linked Environmental Controls Seminar Course (Taught by another instructor)

Currently: Working for Diller Scofidio + Renfro, New York

Excerpts from a letter on 10/19/06:

"I remember the third-year design studio I took with Tom as one of the most challenging and tiring, but also inspiring and lasting experiences of my career at Cal Poly. Tom inspired the best in his students and showed us with our own work what we could accomplish. The lessons I learned from Tom about education, design, and myself have remained with me since."

"Tom often told us we must 'suspend disbelief' in order to achieve inventive design. I found this philosophy to be in amazing abundance at Gehry Partners (worked there for four years), reminding me of Tom's studio."

"In addition to the practical applicability of Tom's architectural lessons, he became an important advisor and mentor as I embarked upon the graduate school application process."

"I had brought images of the projects I was working on (at Frank Gehry's - when he visit Cal Poly sometime in '05) and after I was finished sharing, much to my surprise late on a Friday evening, Tom was eager to share with me the work he had been doing. He showed me much of his previous students' work, including many typically exquisitely detailed 'Fowler basswood models,' and discussed how the work had been evolving since I had been in his class, as well as the new directions he had been pursuing. Tom was eager for my input and thoughts and had made me comfortable enough to offer both praise and critique. As minor as this encounter might seem, it has strongly buoyed my conviction to teach. Tom's eagerness to treat me as a peer, to learn from me, and to seriously discuss his pedagogy has stayed with me since and reminded me of my own potential in the educational realm."

Post Cal Poly:

Frank became a design model builder for Gehry Partners, LLP (for four years), where he worked on a 6,500 square meter office building in Basel, a competition for a 50,000 square meter museum of art in Hong Kong, and a 10,000 square meter museum of contemporary art in Paris. He attended Princeton's 1.5-year Master of Architecture program.

SAMUEL BERMUDEZ, BARCH '04

A student in my Winter Quarter '03 Third Year Design Studio and linked Environmental Controls Seminar Course (Taught by another instructor)

Currently: Leading Gensler's San Jose, Costa Rica Office (General Manager) after only 5 years out of school.

Excerpts from a letter 09/30/09 (see full letter attached):

"Tom taught me the value of time and out ability to come up with outstanding ideas with the stroke of a pencil, a quick model, or a digital sketch."

Post Cal Poly:

Sam convinced Arthur Gensler to have him start the Costa Rica Office. Recently speaking with Sam, the office is doing well even in these uncertain global economic times.

Unsolicited Letters from Practitioners on Students' Design Studio Work:

On 6/29/02 12:50 PM,
 FROM "David.Diamond@som.com" <David.Diamond@som.com> wrote:

Tom, Thank you for the postcards of your students' final projects (Prada Retail Center Project, San Francisco, CA). I was quite impressed by the quality of both the design and the graphic presentations, especially considering they are only third year. I liked most of the students' designs much better than what Rem Koolhaas is proposing for the site, which I agree with the critics who claim it looks like a giant cheese grater. I passed the postcards along to Patrick Daly, who is the senior design associate partner responsible for Electronic Arts, and he was also very impressed with the quality of your students' work. Your students should be encouraged to keep in touch with SOM when they graduate, or they should apply for summer internships if they are interested. I hope that you are enjoying your summer break, and please feel free to keep in touch with me in the future.

David Diamond, Associate
 Skidmore, Owings & Merrill LLP, One Front Street, San Francisco, CA 94111, 415.981.1555

On 4/15/03 3:18 PM,
 FROM "Alice Carey" <acarey@carey-sf.com> wrote:

I am speaking at the CA Preservation Foundation Conference on designing in an historic district. I am using the Prada project as an example. I ran across your web site with student projects. Did they use the same program as the real thing? Would I be able to obtain some of the projects electronically to use in a power point show.

Congratulations on being rated the second best architecture school in the country.

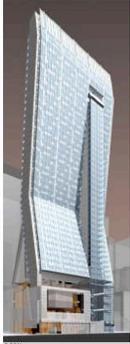
A Cal Grad
 ARC

Alice Carey, President
 Carey & Co Inc., Old Engine Co. No., 2460 Bush St, San Francisco CA 94108, 415-773-0773



A Selected Sampling of Third Year Design Studio Projects, Prada Retail Center Project in San Francisco, CA (same site and program as OMA's proposed Prada Project), Spring 2002

Developed SOM/SF Professional Studio for Fall 2009 (Students take a Design Studio for academic credit and work as an intern for 20 hours a week)

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| <p>SOM – ADVANCED HIGH RISE LAB Fall 2009</p> | |
| <p>Concept</p> <p>- The SOM San Francisco Office, <i>High Rise Lab</i> will be an academic studio for advanced level students exploring topics related to interdisciplinary building system integration and its influence on form making.</p> <p>Mirroring the firm's collaborative creative culture, the studio will be co-instructed by a Senior Designer from the firm's Architectural Studios and a Senior Structural Engineer. As appropriate, expertise from other members of the office as well as consultants will be drawn upon for topic specific discussions, lectures and critiques.</p> <p>In recognition of the global trend towards urbanization of our population and the challenges this will pose for future design professionals, the studio program will focus on an urban high-rise. Issues of scale, mixed-use, technicals, enclosure, structure and environmental performance will all be topics for exploration.</p> |  |
| <p>Students</p> <p>- 2 each from:</p> <ul style="list-style-type: none"> • Cal Poly - 4th year students (will also work as interns up to 20 hrs per week) • CCA* - 4th year, 5th year or Masters Students • UC Berkeley* - Masters Students | <p>Studio</p> <p>- Studio Space will be provided in SOM/SF's offices. This will provide the students with maximum opportunities to collaborate with one another and the instructors as well as providing access to the office's resources.</p> |
| <p>Prerequisites</p> <p>- Students should be from advanced levels of an accredited architectural program (leading to either a Bachelors of Architecture or a Masters of Architecture). Required completed coursework include 1 Architectural History/Theory Class, and 1 Structures Class.</p> | <p>Calendar</p> <p>- The studio calendar will follow the 14-week semester (classes start in August) system of the CCA and UC Berkeley students and the Cal Poly students will start at this time too.</p> |
| <p>Selection</p> <p>- Students will be nominated by faculty at their particular institution and submit a portfolio for final selection by the SOM. This selection process will occur in the late spring, prior to the summer break.</p> | <p>Contact</p> <p>- DO NOT CONTACT SOM OR CAL POLY'S SAN FRANCISCO URBAN DESIGN INTERNSHIP PROGRAM COORDINATOR DIRECTLY.</p> <p>Interested 4th year students are strongly encouraged to contact Professor Thomas Fowler, IV, AIA, tfowler@calpoly.edu for additional information about this program and for feedback on draft portfolio submissions before the end of Fall Quarter 2008.</p> <p>Applications will be due to Professor Fowler via email by no later than Friday January 23, 2009. Late submissions will not be accepted. Students will be required to submit a SINGLE 5 1/2 x 11 electronic document (NOT TO EXCEED 2 MBs) that has student's portfolio not to exceed 10 pages, plus a one page resume, and cover letter not exceeding a single page indicating why you would like to participate in this professional studio. SOM will make their selections for professional studio by Monday March 2nd. Accepted students will start the professional studio in August. Also, depending on space availability, there may be an opportunity for accepted students to participate in SOM's summer internship program, which starts the first week in June.</p>  |