

Architecture, Design & Materials Studio

Spring 2007, CMU, Arch #48-205, M/W/F 1:30-4:20
Class Website: www.andrew.cmu.edu/course/48-205

Coordinator: Kai Gutschow
Email: gutschow@cmu.edu
Off. Hr: M/W 12:30-1:30pm & by appt. in MM307

(1/11/07)

S'07 SYLLABUS

“As architects, we are united in our love of the physical world.
We like to touch and make real things.” - B. Tsien

“Material itself is dead and lifeless. It is only given life by form,
breathed into it by the creative will of the artist.” - W. Gropius

OVERVIEW:

Building on the fall “Composition” studio, the spring semester is concerned with more in-depth understanding and development of designs for small-scale buildings, now informed by greater knowledge related to materials and the act of construction. We seek to explore the aesthetic and experiential meaning of materials (WHY?), and the technical knowledge related to the use of materials and the processes of construction (HOW?). The creative opportunities and design implications of using varied materials, structural systems, and assembly techniques are elaborated, especially as they determine the *artistic, conceptual, poetic, creative, spatial, and experiential* aspects of architecture. The studio, the lectures, and the required “Building Study” will focus on the application and integration of knowledge acquired in a parallel “Materials & Assembly” course 48-215.

Objectives: To analyze and think critically about the role that materials, assembly methods, and construction play in existing architectures, and applying this with intent as part of a larger, synthetic and creative design process in your own designs. To define strategies for problem solving, conceptual development and poetic expression at all levels of the design process, large and small, conceptual and real. To develop structured arguments about your design intentions and the means to communicate them effectively, especially with regard to materials and construction. As in the fall, the focus of both the teaching and learning must be in 6 areas: 1) Attitude; 2) Verbal Acuity; 3) Drawing Clarity and Power; 4) Robust Models; 5) Conceptual Clarity and Richness of Detail; 6) Theory.

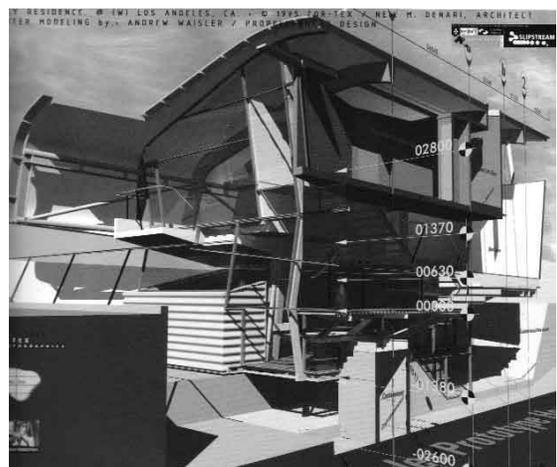
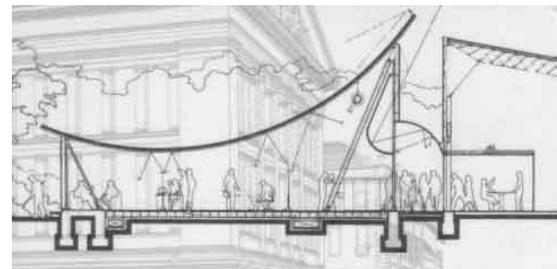
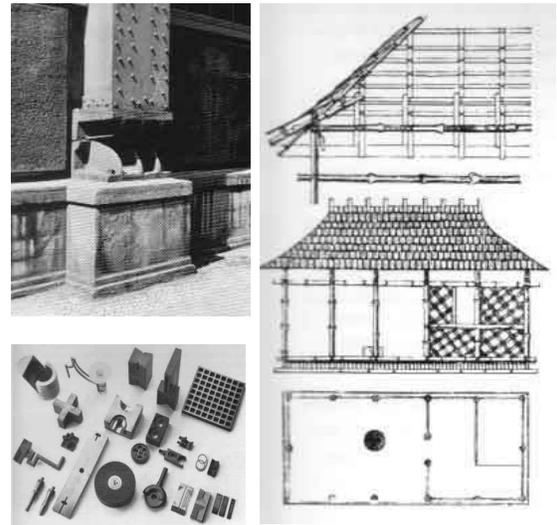
PROJECTS:

The semester will consist of three inter-related projects, the same for all studios, although each studio will explore the themes of materials and assembly with unique accents:

- **Proj. 1 Temporary Library:** design a small, temporary library in a very limited palette of materials. The focus will be on the scale of the human body encountering the materiality of books and architecture in a small-scale design.

- **Proj. 2 Building Study:** analyze a building focusing on how a specific material functions to determine form, space, experience, and meaning. Material to be selected in association with assignments in concurrent M&A class.

- **Proj. 3 Neighborhood Library:** design of a larger, permanent neighborhood library focusing on the role of materials and assembly in reference to context, function, experience, space, and meaning. In order to encourage a robust design process, a “Design Summary” will be due after the first mid-review, a detail of the building will be explored at large scale, and modified structural drawings will be prepared for the design in the concurrent M&A class.



STUDIO WEBSITES: www.andrew.cmu.edu/course/48-205/, details all assignments, due dates, readings, schedules, student work, useful links for research, etc.

LECTURES: In addition to studio, there will be a series of communal lectures related to the studio projects and on architectural theory (M,F 1:30-2:20, MM103, see schedule for details). You are required to attend ALL lectures, to take notes, and to be prepared to discuss the lecture in studio and in some in-class exercises. Integrate what you learn and see in lecture into your design work. In addition, students are expected to take advantage of the excellent and diverse lectures and cultural events throughout CMU and Pittsburgh, and listed through the "Passport" program.

SEMESTER SKETCHBOOK: As in the first year, a sketchbook (8.5"x11" black spiral bound recommended) is required. Instructors want to "see your work." *You should save and date all sketches, study models, photos, ideas, etc.,* and keep them in your sketchbook and/or an ordered portfolio for review at the end of each project and semester. Make a conscious effort to record your design process, especially through your sketchbook. A sketchbook is an invaluable tool in the design process and life of an architect. This is especially the case in a studio that works at all scales from concept and urban plan to details and bolts. The sketchbook is a resource for exploring, understanding, recording and questioning what we can see, hear and experience about architecture, in studio, in lectures related to architecture (history, statics, drawing), during self-motivated research and reading, on site visits and field trips, and in the world around you. It is a place to work spontaneously and experimentally with new and unfamiliar ways of working, thinking, and communicating. It is a place for critical thought, dialogue, and reflection. It is an opportunity to orchestrate observations and ideas over time, a reservoir for synthesis of many disparate thoughts and inspirations. The sketchbook is a trace of your thought process where inter-connections, both purposeful and serendipitous, should come to life and influence your design.

PROJECT DOCUMENTATION: Communicating your ideas clearly, and documenting your work effectively is a crucial part of the design process and becoming an architect. As part of an effort to record your work for the future, especially for website and portfolio, all students will be REQUIRED to create effective and graphically well-designed project documentation sheets using a prescribed "template" of all their designs after each review. The 8.5"x11" pages will be submitted in hardcopy and as pdf files to the Blackboard system. See the studio website and the TAs for scheduling, process, formatting and other details & suggestions.

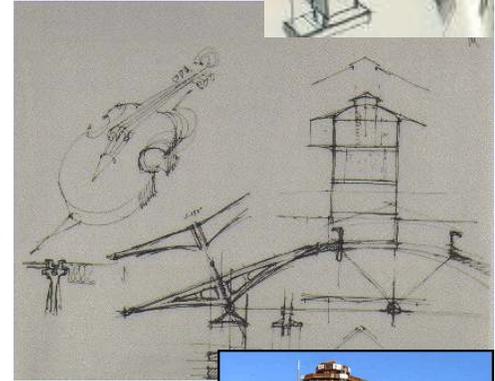
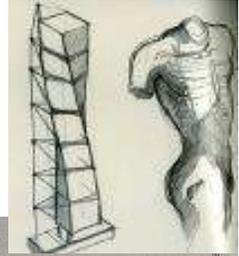
TA WORKSHOPS: Our TA Michelle Lopez (melopez@andrew.cmu.edu) will hold regular help sessions and teach skills to help insure success in 2nd year, including workshops on project documentation & portfolio, presentation & media, time management, integration with M&A, etc.

BIBLIOGRAPHY / RESOURCES: Make a habit of going to the library regularly, and reading more! For useful readings, see the handouts, studio website as well as the library research guide for architects. Some suggested readings to approach the issue of "New Materiality":

Detail magazine & book series, ongoing
 Fernandez, Material Architecture (2006)
 Brownell, Transmaterial (2006)
 Bell, Materials for Design (2006)
 Cohen & Moeller, Liquid Stone (2006)
 Hodge, Mears, eds. Skin & Bones (2006)
 "New Materiality," 2 special issues of a+t (2005)
 Beylerian, Dent, Material ConneXion (2005)
 Deplazes, Constructing Architecture (2005)
 Rieselbach, Material Process (2003)
 Ojeda, Architecture in Detail: Materials (2003)
 Weston, Materials, Form & Architecture (2003)

Mori, Immaterial / Ultramaterial (2002)
 Ursprung, Herzog & Demeuron: Natural History (2002)
 Leatherbarrow, Surface Architecture (2002)
 4x4 Series: Cool Construction, Techno Architecture,
Radical Tectonics, Concrete Regionalism
 Zumthor, Thinking Architecture (1998)
 Frampton, Studies in Tectonic Culture (1995)
 Ford, Details of Modern Architecture 2 vols (1990)
 Banham, Architecture of the Well-Tempered Environ. (1969)
 Pye, Nature and Art of Workmanship (1968)
 Ruskin, Stones of Venice (1851)
 Semper, Four Elements of Architecture (1851)

and works on and by the architects: Alvar **Aalto**, Toyo **Ito**, Tadao **Ando**, Mies van der Rohe, Adolf **Loos**, Ove **Arup**, Peter **Rice**, Carlo **Scarpa**, Frank Lloyd **Wright**, Le **Corbusier**, Peter **Zumthor**, **Herzog & Demeuron**, **Gigon/Guyer**, **Lotek**, Juhanni **Pallasmaa**, Jorn **Utzon**, Renzo **Piano**, Studio **Gang**, Sean **Godsell**, Tod **Williams & Billie Tsien**, **Diller & Scofidio**, **ShoP**, **Lewis Tsurumaki Lewis**, Louis **Kahn**, Santiago **Calatrava**, Jean **Prouve**, Glen **Murcutt**, Brian **Mackay-Lyons**, Toshiko **Mori**, Larry **Scarpa**, **Rural Studio**, and more.



THE DESIGN STUDIO

Room Assignments: Studio spaces in Margaret Morrison Carnegie Hall (MMCH) are assigned as follows: Damiani 313 // Wolff 314 // Lubetz 315 // Calisti 318.

Space: Your foremost intention as an architect is to create space that will improve the human condition. The studio environment is no exception. You are expected to make and maintain the studios as the best possible places for exploration and expressing architectural ideas. Keep the studios neat, **clean** and professional looking. Clean up the space around you regularly. Share the space, desks, and wall space.

Collaboration: Architecture is by definition a collective venture, with many different people contributing to the final products. The design studio should be, too. Make your design process a collaborative one with your instructor and fellow students. Be considerate of your neighbor and instructors. Share inspiration, information, and responsibilities freely. Be supportive of each other, respect character and personality differences. Since your greatest growth comes from peer review and discussion, working in the studio on studio projects (except shop and computers) is required. Avoid working in the dorms. Work to be a positive force in the studio.

Intensity & Time: Be efficient, learn to develop good time-management skills. As an 18-unit course, you should spend a minimum of 18 hours per week working in the studio (includes class time). In an effort to maximize your work efficiency and time management skills, studio sessions should be intense. You are expected to participate actively in all discussions and pin-ups. Unsupervised time during desk crits should be highly productive and self-motivated.

Attendance: Design studio is the backbone of your architectural education. You are required to attend every studio, including all the lectures. Absence without a valid excuse will result in grade reductions. If you cannot make it to class, always notify your instructor *in advance*. More than three un-excused absences can result in automatic failure of the course. You are expected to be on time for the start of class at 1:30, and stay in class through the end of studio at 4:20, or longer for reviews or if your instructor expects it (except for approved extra-curricular activities). Lateness, excessive coming-and-going, and leaving early are disruptive, disrespectful, and unacceptable.

Forbidden: No food, no audible music, no cell-phones in the studios or lecture hall during class times. Minimize them during other times as well. Drawing or cutting on desks, floors or walls or otherwise defacing or soiling school property will not be tolerated. Do not drag the desks across the hardwood floors. Spray-mount and spray-paint are forbidden from all parts of MMCH!

PROJECT DEVELOPMENT & DESIGN PROCESS

Architectural design is a complicated, multi-layered process that has traditionally required a significant amount of time, pondering, research, setbacks, and effort. You should seek input from a wide variety of sources (instructors, peers, readings, travel, etc.) but in the end your design process must be a personal *synthesis* of learning and experience. All projects, even simple ones, require multiple steps and phases to complete, each phase being a revision and progression from the previous one. Over the course of the next year your studio projects will get much longer, and the your ability to work constructively in a self-motivated and self-critical manner becomes increasingly important. This independence is, perhaps, the greatest change you will encounter from the first year.

The 2nd year instructors encourage you to be firm and committed to your ideas at each step of the way, but do not be afraid to change direction, ideas, or details. Experiment! Don't cling so much to your own creative products that you refuse to change any or all of it. Invite feedback, criticism, and radical new ideas about your work, but work deliberately.

Design studio is about process, ideas, and passion even more than about final products. In your work, at desk crits, and in the final portfolio instructors will be looking for evidence that you are searching and exploring for new and better ideas, that you listen to and respond constructively to feedback from your professors and peers. We are looking for enthusiasm, a willingness to try new things, to be bold, to take a stance, to research things you know nothing about, to take criticism, to explore new ideas, to be amazed.

FINAL PRESENTATIONS:

In the 2nd year you are given a great deal of leeway about exactly what constitutes a complete presentation for your particular design. Nonetheless, a set of "Minimum Requirements" for the entire year will be handed out before each project deadline. In addition, each studio instructor may assign additional "Minimum Requirements" to acknowledge the special focus and emphasis of each studio and instructor. In general, 2nd year projects are resolved at 1/4" scale, and require three types of representations:

- 1) Descriptive: site plan, general floor plans & elevations, detailed sections, models
- 2) Experiential: interior perspective(s), exterior perspective(s), cinograms
- 3) Diagrammatic: concept, parti, and design-development; program distribution, dynamics & circulation; geometric organization, proportional systems, orientation; materials & systems; design language.

Make sure the final presentation of your design ideas is complete, convincing and professional. Plan ahead to make sure all drawings, models and diagrams get done by the time the project is due. Work within the time constraints to maximize the expression of your ideas. Make sure that your final products represent all of your ideas, without too much repetition, without needing to embellish too much with words. Make sure each drawing or model says something distinct and important. If it's superfluous, leave it out. Make sure your verbal presentation is SHORT and to the point. Make sure to outline your main points in advance.

GRADING & EVALUATION

Evaluation Criteria: Grades will be assigned based on problem comprehension and definition, self-direction in response to criticism, commitment to imaginative exploration and problem-solving, dedication to refinement and completion, and excellence in communication in terms of graphic, written, and verbal resolution. Instructors will measure your performance with respect to the 6 primary goals outlined on p.1 of the syllabus, and evidenced in your attitude, commitment, and designs. Your solutions to each assignment will be evaluated on the strength of idea, degree of challenge, level of complexity and completeness. Your ideas should show evidence of applying a broad range of resources to inform the quality of your solution. Your work should evidence knowledge gained from within the studio as well as other co-requisite courses and cultural events. Exceptional work is built upon a synthesis of previous knowledge, as well as a broad spectrum of sources, not merely the studio assignment.

Grade Sheets: Much as in the 1st semester, you will receive periodic *written* evaluations to document your attitude, effort, process, progress, and results. Their purpose is to minimize confusion and ambiguity. *Be honest with yourself.* If you have doubts about how well you are doing, ASK your instructor, COME see the coordinator, and/or GO find help with advisors, beginning with Heather Workinger in CFA201.

Completeness & Deadlines: In order to make final reviews celebrations of excellent work, all projects deemed incomplete by the instructor will NOT be allowed to present. Such work will be graded afterwards, and marked down for incompleteness or lateness. Every effort will be made to discuss the inevitable exceptions. In order to maintain standards and enforce the "minimum requirements," we will mark down all students who do not have all the minimum requirements (both 2nd year and individual studio). In addition, those students who have obviously done less work will be open to comments about this during the review, and will be granted less review time: "less time for less work." Working past the project deadline in any way will result in a failing grade for the project. You must complete ALL the assignments by semester-review (May 8) in order to receive a passing grade.

Standards:

A - excellent, enlightened invention. Superlative or exemplary work, initiative and passion beyond the description of the problem. Significant understanding of the problem. Conceptual clarity. Attended by an attitude of self-motivated exploration, open-mindedness, and a willingness to benefit from criticism.

B - good, convincing development and comprehensive resolution. Very good, some exemplary work, a thorough understanding of the problem. Project displays conceptual foundation, well crafted. Competence and mastery of skills. Open, inquisitive attitude.

C - satisfactory, exploration of alternatives in the resolution of the project. Satisfactory or adequate work which meets the minimum requirements of the problem and course. Shows understanding of the problem, with some deficiencies. Reasonable mastery of skill and concepts. This grade represents the *average* solution.

D - passing, consideration of factual knowledge and complete presentation. Work which is complete, but demonstrates deficient skills and does not show an understanding of the problem, process, or expectations. Work often attended with closed-minded attitude with respect to criticism and self-motivation. Although technically passing, this work is unacceptable in a professional program.

R - repeat. Work which is unsatisfactory, which does not meet the requirements of the problem or course, and shows a serious deficiency in skills or is incomplete. Raises questions with respect to the future success within the program.

Distribution: Your studio instructor is responsible for assigning the majority of your grade, but is subject to advisory grades and counsel by all the other instructors. The grade for the individual projects will INCLUDE the evaluation of sketchbooks, exercises, class participation, willingness to explore, and your enthusiasm and passion for the subject. The final grade will be weighted as follows:

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| Proj.1 - Temporary Library | 25% |
| Proj.2 - Building Study | 10% |
| Proj.3 - Neighborhood Library | 45% |
| Coordinator | 10% |
| Other 2 nd Year Instructors | 10% |

The mid-term grade will be a statement about progress and promise, based on the grades for Proj. 1, but also an indication of the passion and trajectory of the student.

Special Needs Students with any documented medical, psychological, or learning conditions that require special classroom accommodations should see the coordinator as soon as possible so we can make the appropriate arrangements.

