

Architecture, Design & Materials Studio

Spring 2005, CMU, Arch #48-205, M/W/F 1:30-4:20
Class Website: www.andrew.cmu.edu/course/48-205

Coordinator: Kai Gutschow

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Off. Hr: M/W 12:30-1:30pm & by appt. in MM307

(1/7/05)

Syllabus

CONSTRUCTION: "The action of framing, devising, or forming by putting together parts systematically; see also erection, assembly, building, structure, conformation, disposition."

OVERVIEW:

This studio is concerned with more in-depth understanding and development of designs for small-scale buildings informed by the technical knowledge related to materials and the act of construction. The creative opportunities and design implications of using varied materials, structural systems, and assembly techniques are elaborated. The studio and the lectures focus on the application and integration of knowledge acquired in a parallel "Materials & Assembly" course (M&A, 48-215).

Building on the Fall "Composition" studio 48-200, this studio is concerned with the development and refinement of architectural design skills to include greater consideration of the aesthetic and experiential knowledge related to the meaning of materials (WHY?) and the technical knowledge related to the use of materials and the processes of construction (HOW?). We will explore how attention to materials, assembly systems and construction processes can and should influence the architectural design process, especially in determining the *artistic, conceptual, poetic, creative, spatial and experiential* aspects of architecture.

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.

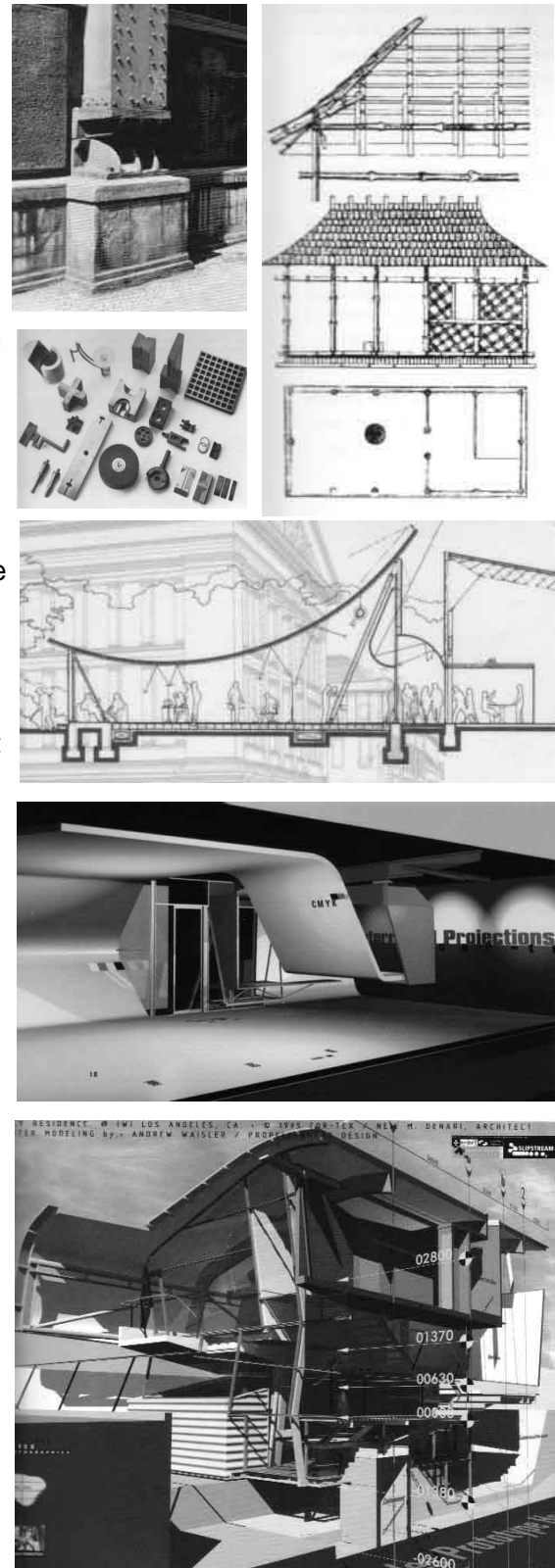
PROJECTS:

Each of the studios will approach the theme of design, materials and assembly differently, but all students are expected to explore a broad spectrum of design strategies at every opportunity. The studio instructors will present a series of lectures and guide a series of discussions based on required readings.

The semester will consist of two projects:

- Projects "0" & "1": a simple, small kiosk to rent & fix bikes, with a focus on the human body encountering the materiality of architecture. The basic program will be common to all studios, but the site will be different for each. The problem will begin with research into a palette of architectural materials, and require large-scale models related to materials and assembly.

- Project "2": a larger construction in an urban setting focusing on the role of materials and assembly in reference to context, function, experience, space and meaning. To be announced at mid semester, and common to all studios.



LECTURES

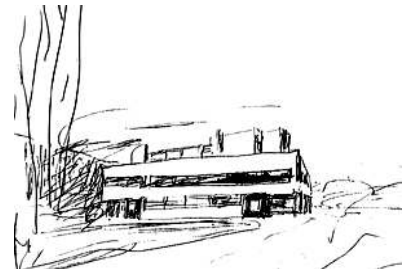
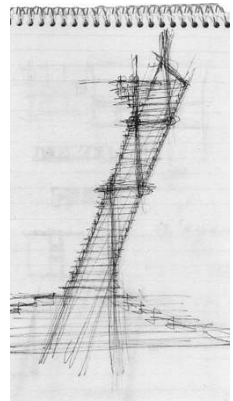
There will be a required series of communal lectures related to the studio projects and on architectural theory (M,F 1:30-2:50, MM103). In addition there will be required readings and discussion sections. You are required to attend ALL lectures and discussions, and take notes. Be prepared to discuss these in studio and in some in-class exercises. Integrate what you learn and see in lecture into your design work.

SEMESTER SKETCHBOOK

As in the first year, a sketchbook (8.5"x11" black spiral bound recommended) is required and must be filled by the end of the semester.

A sketchbook is an invaluable tool in the design process and life of an architect. This is especially the case in a studio whose focus involves the integration of design and technical details, including the creative exploration of materials, assembly methods, and construction, in addition to the issues of composition and conceptual thinking from the Fall semester. 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 (M&A, structures, history), 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.

Next to the final presentation drawings for any project, the sketchbook should become the best and most complete synthesis of all the creative work from the entire design process, from first inspirations, to planning the presentation drawings. Copies of your sketchbook can form part of pin-up or final presentations. As computers take over an increasing part of the design process in architecture, sketchbooks remain the primary means of documenting your individual design process, ideas, and expressive abilities, and can form an integral part of your portfolio or job application packets. Work to make the sketchbook a productive part of your architectural design process! Fill the book in an orderly, logical process. Learn to date your sketches. See www.library.cmu.edu/Research/Arts/Architecture/sketchbooks.html for a list of professional architect's sketchbooks published and in the CMU library!



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, including for student web page, and even more importantly for your portfolio, all students will be REQUIRED to create graphically sophisticated and informative documentation of all their design projects after each review (a multi-page documentation, either 8.5"x11" or 11"x17", joining text and images, to be submitted in: a) hardcopy; b) one low-res pdf file; c) one hi-res pdf file).

BIBLIOGRAPHY / RESOURCES

For bibliographies of useful readings, see the handouts and the studio website: www.andrew.cmu.edu/course/48-205/index.htm. In order to keep abreast of the latest development in architecture, and to become acquainted with the professional culture, issues and communications of architects, work to go to the 4th-Floor arts periodicals area in Hunt Library at *least once a month* to review the latest magazines. Some of the best journals include:

[AA Files](#)
[Architectural Record](#)
[Architectural Review](#)
[Architecture](#)

[Architecture + Urbanism \(A+U\)](#)
[Blueprint](#)
[Casabella](#)
[El Croquis](#)

[Detail](#)
[Domus](#)
[Grey Room](#)
[Metropolis](#)

THE DESIGN STUDIO

Room Assignments: Studio spaces in Margaret Morrison Carnegie Hall (MMCH) are assigned as follows: Damiani 312, Wolff 314, Lubetz 315, Drake 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 environment.

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 and discussions. 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 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, audible music or cell-phones in the studios or lecture hall during class times. Minimize them during other times as well. Drawing or cutting on desks 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

Design is a complicated, multi-layered process that has traditionally required a significant amount of time, pondering, research, setbacks, effort etc., particularly in architecture. All projects, even simple ones, usually 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 manner becomes increasingly important.

Much as in math class, 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. Make every sketch worthwhile and worth saving to show and record the progress of your ideas. Put all your effort, focus and attention into each piece. 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 and ideas 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 constantly searching and exploring for new and better ideas, that you listen to and respond constructively to feedback from your professors and peers.

FINAL PRESENTATIONS:

One can argue that no architectural project is ever completely done; and it is a truism that with more time and effort, almost any design could be improved. Nonetheless, we all have to respect and work toward unchangeable deadlines, in school, and later in life. 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.

The final project is the lasting evidence for your semester's work. The School records this work, and you will likely include pieces of it in your permanent design portfolio. In the final project presentation, instructors will be looking for a finished product that reveals the multiple layers of thought and phases of work it took to complete it. It should be both a finished product, and one small step forward in your overall design education.

MINIMUM REQUIREMENTS

A set of Final Review "Minimum Requirements" for all studios 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. General guidelines:

DESCRIPTIVE (minimum requirements for all studios)	
Site model	1/16" or as appropriate
Floor plans & elevations	1/4" = 1'-0" minimum
Principal building section	1/2" = 1'-0"
Detailed wall section	1 1/2" = 1'-0"
Axonometric (also revealing the construction system)	1/8" to 1/4" = 1'-0"
Models, overall and large-scale detail mockups	1/4" = 1'-0" to 1:1, as appropriate
EXPERIENTIAL (to be stipulated by individual studio instructors)	
interior perspective(s) and exterior perspective(s)	
vignette-sized serial view ("cinegram") of procession from outside to inside	
DIAGRAMS (to be stipulated by individual studio instructors)	
concept, parti and design development diagrams, etc.	

GRADING & EVALUATION

Evaluation Criteria: 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 also show evidence of 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, not only the studio assignment.

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.

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 in order to receive a passing grade.

Standards:

A - enlightened invention. Superlative or exemplary work, initiative 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 - 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 - consideration 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 - consideration of factual knowledge and complete presentation. Passing, work which is complete, but does not show an understanding of the problem or expectations, and demonstrates deficient skills. 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 - failing work which does not meet the requirements of the problem or course, 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 your grades, 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, etc. The final grade will be weighted as follows:

Proj. "0" Materials Research & Large-Scale Detail	10%
Proj. "1" Small Bike Shed	20%
Proj. "2" Larger Construction	50%
Proj. Documentations (portfolio &/or webpage)	5%
Coordinator Kai Gutschow (5% for each project)	10%
Other 2 nd Year Instructors	5%

The mid-term grade will be based on the grades received for Proj. "0" and Proj."1".

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