

Architecture Studio: 2nd Year Fall

Fall 2011, CMU, Arch #48-200, M/W/F 1:30-4:20

Class Website: www.andrew.cmu.edu/course/48-200

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Off. Hr: M/F 12:00-1:00pm & by appt. in MM302

(9/2/11)

PROJECT 1 – BUILDING SHELTER

ASSIGNMENT 1D: (for Wed. Sept. 7)

- Students should divide each studio into two groups of 5 or 6 students to work as a team for the rest of the project, for a total of 10 teams in 2nd yr.
- The aim of the team is to collaborate, to work together to maximize the contribution and learning of every member of the group so that it adds up to be more than the sum of its parts. The team should divide the work, and work on a consensus basis so that every team member feels themselves to be central to the design and construction process. Productive team members inspire each other to do more than they would alone. Good leaders find ways to involve every team member.
- At the end of the Proj.1, students in each team will be required to assign a grade to the other members of their team, confidentially. These grades will be combined with the instructor grades for final project grade.
- After forming the team, and carefully reading these assignments, each team should discuss how to optimize group dynamics, reward leadership and effort, and compensate for weak team members. We realize that collaboration is hard, and often aggravating. Devise strategies to minimize these.
- In order to ensure smooth and efficient teamwork over time, each team must write up a contract that lists the name and contact info for each member, outlines potential working methods and expected behaviors; covers work obligations and consequences for inadequate performance or effort, and organizes how expenses will be shared, deadlines to be met, and meeting times to adhere to.
- After every member of the team has signed and agreed to this document, it should be placed on the appropriate folder on archpcserver.
- The contract may be revised during the process if entire team agrees.

ASSIGNMENT 1E: (for Wed. Sept. 7)

- It is essential that you begin with shared goals. After forming the teams and creating the Contract, all teams should discuss and come to a general consensus to the question of "What is architecture?" and how it might apply to giving "meaning" to your shelter project(s).
- Each team should document its response to this question in a short, 3-minute video clip that must follow the guidelines of, and be submitted to the CADSF "Architecture is..." competition.
- The competition website and instructions can be found at:
http://cadsf.org/Programs/Architecture_Is.htm
- Create ideas, scripts, and story-boards to represent your ideas clearly
- Create videos using editing software such as JayCut or YouTube Video Editor, or other software and equipment available on web or campus.
- Follow all competition guidelines, and all legal advice, including copyright issues on songs and images.
- Follow the instructions at "How to Submit your Entry" in order to have your team's film considered. See:
<http://aiasf.org/images/ArchIs/HowToSubmitYourEntry.pdf>
- Create a YouTube account, and upload your team's film to YouTube and tag it with "architectureis"
- Register your team's entry at: <http://architectureis.eventbrite.com>.
- Subscribe to the "Architecture Is..." YouTube channel
<http://youtube.com/architectureis>
- Also upload all videos to studio blog <http://cmuarch2015.wordpress.com/> for easy review by peers and faculty. Be sure blog versions of video have proper credits (student names, video title, date, instructor).

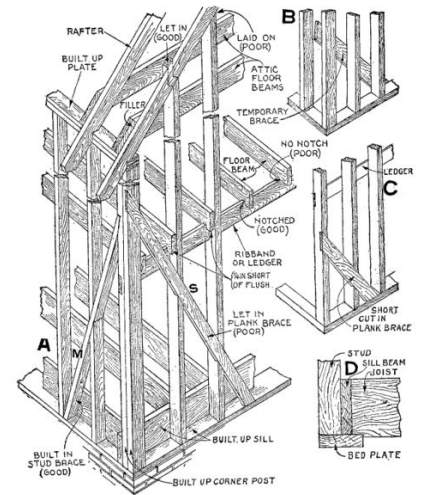


ASSIGNMENT 1F: (for Wed. Sept. 7)

As stated in the syllabus and in the first handout, one of the goals of this project (and the studio) is to understand tight constraints, including materials, as positive forces that help shape the design process, solve problems, and enhance creativity. In contrast to several of your 1st year projects where you derived the early form of your projects in large part from other forms that were assigned or given to you (three planes, a dancer's movement, or a knot), in this project you should seek to derive the early form from the given constraints (materials, program, group composition, and sites). In the next two assignments we will begin to focus on the dominant materials of the shelters: plywood and 2x4 studs, by far the most common construction materials in the U.S. for the last 150 years.

- It is important for an architect to understand materials through research. Research should always be a significant component of an architect's process. Listed below are a series of questions about the role of plywood and 2x4's in our building tradition and construction industry. In order for us to be ecologically minded about materials, each studio (two teams) is asked to collaborate to find answers and prepare a 4pp. report to answer the following questions (roughly one page per group of questions). Although the "facts" will be similar for each studio, each studio should work on a uniquely clear presentation about their answers.

- What is a conventional 2x4? What are its typical dimensions? What is it typically made of? How is a 2x4 made (diagram the process)?
- What is plywood? What are the most typical sizes and thicknesses of plywood used in house construction in the U.S.? What is this plywood made of? How is plywood made (diagram the process)?
- When and why did plywood and 2x4s come into our building tradition? What is "platform framing" and how is it different than "balloon framing"? Why are plywood and 2x4s still such a prevalent and important element in making buildings in this country? What are the pros and cons of continuing to use these materials so pervasively?
- What does the term embodied energy mean? How much embodied energy does it take to make a single 2x4? How much embodied energy does it take to make a single sheet of 4'x8', 1/2" plywood? Compare the embodied energy of a 2x4 and plywood to some other item you know.



ASSIGNMENT 1G: (for Fri. Sept. 9)

- It is important for an architect to understand materials through hands-on experience. Hands-on experimentation and testing at 1:1 scale is an essential part of designing and constructing buildings. With the increased complexity of buildings and systems today, architects are more frequently building full-scale mockups or prototypes of walls and even entire parts of buildings in order to understand their designs more fully.

- Each team should create TWO DESIGNS that each combine up to 50 2x4s using any of the following terms to define a self-structured volume: mirror, lap, overlap, weave, extend, proportion, orthogonal, repetition, linear, grid, rhythm, datum, open, closed, interlocking, hierarchy, layering, interlock, rotate, align.
- The two designs should be remarkably different, given the simplicity and similarity of the materials used in each.
- Test out your ideas using real 2x4s. When assembling, the individual 2x4s cannot be altered in any way. They cannot be cut, glued, nailed, etc. in making the assembly.
- Use freehand drawings (plans, sections, elevations, and three dimensional drawings) and scale study models to explore a whole series of ideas.
- Choose what you consider to be your two best and final designs and draft a plan, section, elevation, and axo of each. Consider carefully when laying out the drawing, how each view fits together to read as a whole.
- Be ready to reconstruct either of your designs in studio on Wednesday.

