

Architecture Studio: 1st Year Spring

Spring 2012, CMU, Arch #48-105, M/W/F 1:30-4:20
Class Website: www.andrew.cmu.edu/course/48-105

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Off. Hr: M/W/F 12:30-1:00pm & by appt. in MM302

(2/12/12)

Project 1a: SHOP PROJECT: STACKS-STICKS-PLANES

MINDSET: A long-standing tradition of CMU's 48-105 studio has been an intensive shop project to build a functional piece of furniture or architecture at 1:1 scale. The purpose of this project is to continue to develop expertise using the shop tools, and to highlight "making" as fundamental to the design process and to becoming an architect. Making things at 1:1 allows you to experience viscerally the resistance of materials and the tools, the difficulty of technical precision, the aura of craftsmanship, scale in relation to the body, and the emotional thrill of using and keeping something you made.

PROJECT: This year we will make a "stand" or pedestal to support and display a variety of possible objects 20" above the ground, including such things as an architectural model, a plant or lamp, or an object of special significance. In addition to supporting an object, the stand must convey fundamental characteristics of either "Stacks", "Sticks", or "Planes" (each of these terms will be assigned to 1/3rd of the studio). It must be "about" one of these systems, thus the titles: "Stack Stand," "Stick Stand," and "Plane Stand."

CONSTRAINTS: 1) Your stand must be cut from 12 board-feet of rough-cut "8/4" poplar wood. You may cut the poplar planks any way you want, but you need to plan carefully, as all wood for your stands must come from the planks. 2) There will be no other materials allowed except wood dowels, pegs, and biscuits, as well as glue to join pieces. 3) All major structural connections must be orthogonal; avoid complex geometric connections at other angles. 4) A generous, level surface for display must occur at 20". 5) It should be well built, with a high degree of craft, and sturdy enough to last years.

PROCESS: We will design the stand in studio, and it will be fabricated in the woodshop over the rest of the semester. The process will involve hand sketching, models at various scales, and the computer design where appropriate. The final product will be a set of hand-drafted, 1:2 "shop drawings," including an 3D paraline drawing to show assembly process. The stand will be on display at the final review.

ASSIGNMENT 1a: KIT OF PARTS: (Due Mon. Jan. 23, 1:30pm)

- 1) Every student will be assigned a tectonic system: either "Stack," "Sticks" or "Planes." Students within a studio may trade, but everyone must decide and focus on one system.
- 2) Every student will be given a "kit of parts" corresponding to their tectonic system.
- 3) This weekend you are to "Explore, Experiment, Speculate, Develop, Manipulate, Iterate, Test, Invert, Cut, Joint, Multiply, Explode, Shrink... and Enjoy" this kit of parts to understand the fundamentals of your system, the limits and great potential inherent in it. This first step in your design process will be to create inspiration and ideas for the design, and the design process. Use it to familiarize yourself with the tectonic systems, the materials, parameters, and constraints of the final project.
- 4) First thoughts should be as analog sketches, and later also experiment digitally.
- 5) In conjunction with the early ideas, all students should go to the library and seek inspiration/ideas from any floor, any book, any journal, any subject. Search for related ideas, use your own background, and serendipity to discover the unknown. Every student should bring back at least 2 books and many printouts for inspiration on Monday...
- 6) After sketches and research, start experimenting with different configurations of your kit of parts as well as details of joinery. Work iteratively. Keep sketching and making models. At first, minimize cutting the pieces too much (though notching for joints, etc. is encouraged) and work without glue. Take pictures of all intermediate steps in the process. Push the limits, be bold and clear. Share ideas. Explore and experiment widely!
- 7) Decide on at least 10 significantly different variations. Focus on distilling essential ideas and connections latent with your tectonic system. Explore verbs (inter-penetrate, piling, framing), moments (edges, contours, ends, intersections) and patterns (grids, weaving, crossing). Don't push too many different ideas into one model: make lots of separate ones. Focus more on details of joinery and assembly than furniture design. Allow yourself to be abstract. Don't worry too much about the functional final product.
- 8) For Monday you should present three final, distinct configurations of your kit, alongside sketches, photographs of process and interim stages, and research about your system. You may cut or glue your given kit of parts any way necessary, and add to it as needed. This first assignment can be more abstract and wide open than the final project outlined above. But you should remember the final goal of producing a functional stand with orthogonal connections... You live/work with the consequences of decisions made here for the rest of the semester.

