

Architecture Studio: 1st Year Spring

Spring 2013, CMU, Arch #48-105, M/W/F 1:30-4:20
Studio Website: www.andrew.cmu.edu/course/48-105

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

(1/17/13)

Project 1: SHOP PROJECT: DESK ORGANIZER

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 tools, the difficulty of technical precision, the aura of craftsmanship, scale in relation to the body, and the emotional thrill of using, testing, and keeping for a long time something you made.

PROJECT: Design and construct out of poplar wood an elegant and efficient *desk organizer* in which you can store and display tools, supplies, and personal items in order to keep your studio work table more clear. Design it to be mass produced; imagine everyone in your studio having your design on their desk. Think carefully about the opportunities and problems that arise in terms of how two or more relate to each other (side-by-side and back-to-back), implications of repeating something 60 times, possible variations within a system, etc. Design and construct it to last: be sure it is structurally sound and robust, and be sure it can be disassembled for ease of transport and storage.

CONSTRAINTS: Designers of all kinds always look for constraints as levers of creativity and ingenuity. You must work within the following preliminary list of constraints:

- your desk organizer must be made primarily of poplar wood, a max of 11 board feet
- you may also use a variety of extruded aluminum bars, tubes, or sections to connect, support, and bridge between wood members
- no hardware is allowed; you must connect your pieces with typical wood connections, glue, the aluminum bars, or pins & splines of any material. No other materials allowed.
- your organizer must stand firmly on your studio desk without any fasteners or clamps
- your organizer is limited to a height of 20" above table top
- your organizer cannot extend beyond any edge of your 32"x60" desk, and no part of it can extend into the front half of your desk (it can be at most 16" deep at any point).
- in order to maximize strength and reduce the time and difficulty of fabrication, all connections must be orthogonal (though the pieces of material do not need to be)
- your organizer must come apart to reduce the overall volume (e.g. flat-pack)
 - ** More constraints will likely be added by the coordinator and class as the project develops. Stay flexible with your ideas; great ideas always allow for change.

DESIGN CONSIDERATIONS: Several important design issues arise:

- Although you are the designer, you are designing this for everyone in the studio to use, and feel good about. Your classmates are your clients and end users: design for them. What do they need and want? You must do research to answer this.
- The desk organizer, in addition to storing things, will also inevitably begin to modulate experience and the relationship between yourself, your desk, and the studio. Like a wall or screen or window, it will delimit your desk from the environment around you, but can also enable a special connection to the desks next to, and in front of you. It can provide privacy or focused connection. Choose carefully what you want your organizer to do. Remember that architecture and studio culture is collaborative. You are encouraged to work with your neighbors. Avoid creating an isolating cocoon or nest.
- In order to ensure an "elegant and efficient" organizer, you are given only a small quantity of a few carefully selected materials. There will not be enough material to create a typical, closed-walled shelf. You will need to use the bar stock and other stick-like elements to connect wooden planes. Structural stability is key: so it does not tip, or break, so it can be disassembled, and so it lasts a long time. Be sure to explore precedents, research variations, and test your ideas to optimize your results.

PROCESS: We will design the desk organizer in studio for the first few weeks, and you will fabricate it in the woodshop over the rest of the semester. The process will involve hand sketching and drafting, digital models, and physical prototypes at various scales. The final product will be the organizer (on your desk), a set of hand-drafted, 1:2 "shop drawings," and a 3D paraline drawing to show the assembly process.

ASSIGNMENT 1a: (due Wed. 1/16 at 1:30): Begin your design. Where would you start? Work deliberately rather than impulsively. Think carefully about how an architect should start a design process. What were you taught last semester? What other information might you need to start? (Hint: interview your clients; research the site; find precedents).

