

## 4 Structures Problems

Architecture  
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Requirement for this assignment by completing one of the following two projects.

### Project One.

Build a testable structural model to perform one of the following tasks:

Span Y distance as a clear horizontal span, carrying a minimum of X lbs at the center of the span.

Carry X lbs as a vertical load at a distance of Y above a horizontal surface.

Carry X lbs at a distance of Y as a cantilever load. X is vertical and Y is the horizontal distance from the load to the face of the support. } ?

Materials for the basic structural elements are limited to wood and paper in any combination. Plastic, metal, string, etc., may be used only for connecting elements of the structure.

Within the constraints of some minimum and maximum limits, the models will be rated on the basis of their cost/benefit performance. Models will be tested to destruction and the ultimate load versus the total model weight will determine the score (and grade for the assignment.) The basic objective is to carry the specified load with the least weight of material.

Details of the model requirements and the testing and scoring procedures will be posted.

### Project Two \*

Explain the shell construction and the structure of a building. This must be an actual building whose construction was completed at least five years ago. Each student doing this project must do a different building. Buildings should preferably be in the Los Angeles area. Building selection must be submitted for approval by the instructor.

Explanation should be in graphic form with a minimum of text and notation. Use framing plans, building sections, isometrics, cut-away or exploded views as appropriate and effective for the explanation.

The documentation should explain the basic form and arrangement of the systems, the relations between components of the systems, the form and detail of the components, the basic techniques of assemblage, etc.

Specific format requirements for the presentation will be posted.

\* Oldie but Goodie. Needs lots of explanation for beginning students.

Ambrose (5)

Architecture 205

Assignment 7

A large park wants a prototype canopy structure to use as a sun/rain shelter adjacent to its scattered outdoor food concessions.

Requirements:

600 sq ft of solid roof - no skylights, no grills.

9 ft minimum clearance to the bottom of the roof structure.

Minimum of vertical post supports.

Prefer non-flat, draining roof to avoid leaf accumulation.

Construction should be simple, economical, weather resistant and kid-proof.

The structure should be casual but attractive. Not too cute, but interesting and park-like in character.

Materials: Wood posts and wood roof structure - timber, pole, glulam, plywood panel, etc.

Foundations - wood posts set in concrete.

Schedule and Presentation Requirements:

By Dec. 13 Sketch presentation of complete construction.

Jan 5 Finished drawings of structure with sufficient information to judge appearance and build it.

Jan 17 Redo of Jan 5 presentation if required.

Model at 1/2" = 1'-0".

Drawing media and format and model materials - free choice.

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An almost "all structure" type problem.  
Simple planning problem - emphasis is construction.  
Similar: bus stop, band shelter, gazebo, etc.

Architecture 103

Fall 1978

ASSIGNMENT ONE

*the old (1930?)  
Architecture  
building*

Draw a full scale section of some part of Harris Hall. The drawing should be complete in all parts and detail and use standard symbols to indicate materials in the cross-section. (See Architectural Graphic Standards, page 652.)

The section may be a vertical one or a horizontal one and must show an intersection (floor-to-wall, roof-to-wall, etc.) or the joint between a wall and an opening (window or doorway) or some other feature. Ask the instructor if you have some question about the appropriateness of your selection.

Drawings must be in black ink on white board. The only written material on the drawing should be your name, the course, the date, the assignment number and some description of the location of the detail.

Drawings must be finished and presented for grading by Nov. 2. They should be presented by attaching to the wall somewhere near the location of the detail. (Not on the roof, please.) As soon as you have your drawing finished and ready for grading, tell the instructor

*not so good*

Each drawing must be unique - if someone else has already drawn it, you must find another location. Consequently, the sooner you finish and present the drawing, the better. As soon as you have your drawing ready for grading, find the instructor, mount it on the wall, and get it graded.

If you prefer, you may team with other students to produce a series of drawings that constitute a complete wall section. However, each drawing should be separate and identified as to author.

*← good, encourage*

All drawings should remain on display until the end of the last day for the assignment (Nov. 2.)