ARCH 264: BUILDING SCIENCE

"How to make buildings that work"* or *"How to practise architecture and not get sued"

OUTLINE

- Physical factors that influence good design for performance, durability, health, efficiency, and sustainability of buildings will be studied.
- Principles of siting, building shape, and enclosure design will be introduced. The bulk of the course will focus on typical practical enclosure design strategies but HVAC and lighting will be discussed.
- Common building design/construction problems that result in poor performance, expensive repairs, litigation, etc., their causes, and their solutions will be explored through studies of famous, infamous, and vernacular building materials, details, sections, etc
- Finally, the principles of good building science developed above will be applied to create functional, attractive, efficient, sustainable and economical building details, sections, etc.

The focus is on the needs of the architect, i.e., the design, rehabilitation, construction and operational aspects of buildings (lighting, ventilation, HVAC) and building enclosure i.e., walls, windows, roofs, foundations etc.

LECTURES:

Monday 9:30 – 12:30. in Loft

FORMAT

Lectures, slide shows, case studies, practical design and review problems. Some simple equations, mostly concepts and design principles.

Marks will be assigned through several assignments (20%), a final detailing project (30%), and a final exam (50%).

Note: All assignments must be bound (with staples or better – no paper clips) have a separate cover page with the students' full name and ID# clearly written or typed. One warning will be issued, after which the assignment will be marked out of half.

TEXTBOOK:

How Buildings Work, Ed Allen, Oxford Press, ISBN 0-19-509100-0

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