Nevertheless we may assert that the built is first and foremost a construction and only later an abstract discourse based on surface, volume, and plan, to cite the “Three Reminders to Architects” in Le Corbusier’s Vers une architecture of 1923. One may also add that building, unlike fine art, is as much about an everyday experience as it is a representation, and that the built is a thing rather than a sign, …

Kenneth Frampton, from Studies in Tectonic Culture

Premise

The World is physical. However ideal our architectural concepts might be, if they become buildings they are ultimately manifest through materials in an act of construction. An architect should take great delight in this reality. This course examines materials and construction in service of a critical understanding of the relationship between material, architectural concepts, building construction, and the experience of the built environment in a cultured society.

Objective

Architecture 4301/5301 is the second course in the Building Science sequence, and should be conceptualized as a foundational course to be built upon through both studio practice and subsequent Building Science coursework.

The objectives for this course include the following:

- To understand principles of materials and assembly in the context of building design and construction;
- To understand the development of material and construction strategies as integral to the conceptualization process of a building design;
- To develop an understanding and conversancy with the contemporary discourse on materials and construction in the broader context of the history of building;
- To understand the role that material and technological development of building materials has in the context of sustainability and performance;
- To develop a sense of delight, wonderment, and empowerment through the deeper understanding of materials and construction.

This course will introduce the following criteria for professional architectural programs as required by the NAAB:

- B.7-Building Envelope Systems and Assemblies - Understanding
- B.8-Building Materials and Assemblies – Understanding

Method

The content of the course will be examined through lectures, readings, drawing, and full-scale construction of building details. During the semester there will be trips to visit building sites and product manufacturers – these will be coordinated with design studio activities and will occur outside of the class meeting times. There will be weekly quizzes and examinations to test the students’ retention of the content and their ability to synthesize it with design thinking.

The content of the course will be organized around the materials of wood, masonry, steel, concrete, and glass, and will examine the nature of these materials through the lenses of technological and ideological developments, general and specific properties and characteristics of new and traditional materials and related structural applicability, production and construction methods and processes, envelope systems, and innovative practices.