ATCS6330 TECHNOLOGICAL SYSTEMS SEMINAR
Tectonics of Anisotropic Material Properties

Course Information
Name: Technological Systems Seminar
Number: ATCS6330
Description: An elective course concerned with the advanced study of technical building issues. Concrete, wood, stone, brick - anisotropic materials studied as an experimental masonry structure systems.
Prerequisite: N/A
Credits: (3) semester credit hours
Meeting Place: RM206
Meeting Time: Tu/Th 10-11:15AM
Instructor: Kentaro Tsubaki, AIA., Associate Professor

Course Statement
Steel and glass; two isotropic materials dominated building construction of the post WWII era and defined the tectonics of modern architecture. This is a no coincidence as isotropic-ness lends itself to the quantifiable and predictable material behavior, minimizing the risk inherent in the design and construction of an architectural scale object. However, none of the predominant construction materials prior to the modern era were isotropic. Wood, masonry, concrete all possess anisotropic (orthotropic) property. Tectonic - stereotomic characteristics of earlier buildings rose out of and developed through the necessity to compensate and in some cases, take advantage of these less predictable material behavior.

This seminar focuses on tectonic - stereotomic characteristics of buildings and their historical development through the lens of anisotropic material properties. Our research goal is to gain insight into how the visual intention and the material execution are reconciled through design and construction process, informing tectonics of the building as a whole. We will also speculate on how recent technological developments in digital fabrication and scripting may influence the tectonic potential of these materials.

1/2 of the class time will be dedicated to theoretical discussions on the research subject and 1/2 for design - fabrication assignments and critiques.

Outcome of the seminar will lay groundwork for future publication, The Virtue of Indeterminacy in Architectural Design and Construction (working title).