Architecture 544: Integrative Design of Buildings (Bldg Sys & Design Integration)  
Prof. Michael K. Kim  •  Room 212 TBH  •  244-8012

Description: An advanced course on Integrative Design of Buildings to understand the principles of buildings as goal-directed systems and the reasoning behind various design responses as the means, leading to the development of comprehensive integrative design ability for maximum value creation. Specifically, the course include the study of the anatomical and functional variations of building systems and their implications on design and construction; inter-system relationships and their synergistic and coherent integration into the overall building; and the strategies for designing buildings of great value through comprehensive integration.

Objective: To increase intellectual rigor and professional competency for designing buildings of high quality through comprehensive integrative approach.

Strategy: Design knowledge is contextual. Without comprehensive understanding of the context as an integral part of the knowledge, the applicability of the knowledge to a particular design situation cannot be properly assessed. Acquisition of such knowledge requires Experiential Learning, i.e. inductive leaning primarily through repeated experience of complex situations in their entirety, which gradually gives rise to holistic understanding. To facilitate successful acquisition of such knowledge in a limited time, the pedagogic strategy in this course is three-fold: Lectures; CASE (Comprehensive & Accentuated Simulated Experience) studies; and Field Trips. The lectures are heavily reasoning oriented. CASE studies follow, analyzing the specifics of the design of selected world-class buildings, exploring plausible reasoning behind such design decisions under the particular context, and finally, exploring alternative design possibilities under the similar decision environment. Field trips to real buildings complete the cycle, further reinforcing the experiential learning.

Contents: See attached Course Schedule

Class Meetings:  
Lecture: TR 9:30 – 10:20, Room 17 TBH  
Discussion: TR 10:30 – 11:50, Room 17 TBH

Credit Units: 4 Graduate Hours

Grading Bases:  
CASE Study Consultation 20%  
CASE Study Presentation/Discussion 20%  
CASE Study Documentation in Progress: 20%  
CASE Study Final Documentation: 20%  
Examination 20%  
Class Activity: ±5% max  
Within-Group Adjustment: ±5% max

Term Project: A comprehensive case study on integrative design of buildings investigating:  
1) the specific organizational and functional variations of various building systems of the chosen building, their synergetic relationships, and their construction and architectural implications,  
2) plausible architect’s design reasoning under the particular decision environment that might have led to the specific design, and  
3) alternative design possibilities under the similar decision environment in search of greater value creation.  
The study must be based on the investigator’s original interpretation of the construction documents and, if applicable, site visits and consultation with the architects and engineers of the building. No second-hand information is permitted unless the validity is confirmed by an authoritative party directly involved in the project. A complete set of construction documents will be provided for the study.