ARC 3120
ARCHITECTURAL DESIGN STUDIO IV
2009-10 2nd Term
Instructor: Bruce Lonnman, Wallace Chang, Sebastian Law, and Kelly Chow

DESCRIPTION

The final studio in the six-term core design studio sequence, Architectural Design Studio 06 offers a comprehensive building design project emphasizing the integration of building systems. The studio consists of a semester-long design project of moderate size (5–10,000 sq m) supported by precedent research providing information on technical issues necessary for the development in detail of one of the building systems.

The challenge of the course is two-fold. First, the many aspects of a building design such as programmatic use, site response, organizational strategy (parti), spatial development and articulation, structural and constructional schemes, etc. must be addressed and resolved at a schematic level. Second, an in-depth study of an aspect of the building design must be attempted. In this phase of design, the building systems must be clarified and designed as an integrated structure that considers function, performance and expression. Suggested topics for this study include: the interior design of a prominent space, the building envelope as a passive environmental control system, the structural system and it’s relationship to building enclosure, the articulation of the building surface (elevation) in terms of material and assembly, and green technologies, both active and passive, that contribute to sustainability and energy conservation.

OBJECTIVES

- Ability to create a building design that is comprehensive in scope and embodies a legible and controlling architectural idea.
- Ability to assess, select and conceptually integrate building systems with the architectural design.
- Understand the role of research in the design development of a building.
- Ability to analyze and use relevant precedents in the design development of a building.
- Understand the basic principles of life-safety egress.

ASSESSMENT SCHEME

15% Preliminary design study
60% Comprehensive building design project
25% Detail development

COURSE FORMAT

Instructor presentation and discussion, individual and group project critiques, interim and final design reviews.

REFERENCE BOOK

See attached list.

SCHEDULE

See attached schedule.
Example of studio project description:

The studio UG04 (ARC 3210/section 01) focuses on two aspects of architectural design: the relationship of building form to site and the detail design development of a medium-span roof structure. A response to environmental and natural forces will be emphasized in considering the building’s basic form. The program (an indoor sports hall) also calls for control of day-lighting and natural ventilation.

The open site chosen for the sports hall is hilly and topographically complex, challenging the relationship and placement of the building form to the site. The important design parameters include the site orientation, the climatic conditions of Hong Kong, and the prevailing wind direction. An approach to the design of the building form as a response to these conditions is encouraged so as to result in energy savings by providing maximum amounts of natural indirect lighting, reduction of heat gain by use of the land as an insulator, and through the enhancement of natural ventilation. These techniques will be introduced in the case studies explored during the first phase of the project.

The program is a Sports Center of moderate size containing a large, multi-purpose gymnasium. The gymnasium is a fixed volume (determined by the sports activities footprint) requiring a medium-span roof structure. Strategies must be explored for relating the other activity spaces (squash courts, fitness areas, etc.) to the large and dominant volume. In this project, there is an implicit suggestion to re-evaluate and critique the sports hall in its more conventional form as an expression-less, 'black box' with little contextual adaptation. This may involve a broader recognition of the potential of interior-exterior spatial relationships, an investigation of the envelope as a fine-tuned layer adjusted to enhance lighting and other environmental parameters, as well as a consideration of structure as an important element of the architectural (tectonic) expression.
## Schedule

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<td>Presentation: Building Systems Integration</td>
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