COLUMBIA UNIVERSITY
Graduate School of Architecture, Planning and Preservation

Modular Architecture: Strategy / Technology / Design
A4788

COURSE DESCRIPTION

We are about to experience an unprecedented and transformative change in the way we design and build our cities. Over the last decade, interest in modular architecture has surged, and architects will increasingly be called upon to design multi-story urban buildings using modular techniques. To design in a modular language requires both a fundamental shift in thinking at the conceptual level as well as a working knowledge of modular technology. This course will focus mainly on a studio design problem, in which the students will develop a modular solution to a multi-story urban infill building on a site in located in NYC. In order to gain familiarity with concepts of modular architecture, the first three classes will consist of lectures and a tour through a local modular manufacturing plant. The balance of the semester will be devoted to the design problem, and we will work in a studio format.

The lectures will survey the history of modular architecture and will include case studies. In addition to an examination of design strategies and construction methods, we will cover related topics, including transportation, process engineering, industrial supply chain concepts, site logistics, scheduling and costs. We will delve into questions of cultural acceptance and the stigma commonly associated with "modular". The organization and politics of construction trade unions and their impact on modular adoption will be considered. We will survey the field of contemporary modular architecture and form a conceptual framework within which to categorize various approaches. Our method will be inter-disciplinary, and we will learn to think in terms of business strategy, financing, marketing and sales, as well as the more familiar terrain of design and building technology. We will speculate on how the role of the architect might evolve if an industrialized approach to building were to become normative. Finally, we will evaluate modular architecture critically, and will consider questions such as: Would the widespread adoption of modular architecture inevitably lead to homogenization and dull uniformity? Can it be a tool for urban revitalization? Is it adaptable to a range of climates? Does it offer sustainable solutions? Can modular architecture be expressive of cultural distinctions?

Students will work on the design problem in teams of two or three. After the introductory lectures and factory tour we will meet weekly to review progress. The weekly critiques will emphasize conceptual clarity and technical rigor. The final presentation will be a fully developed design, including details and three dimensional analytical drawings. In addition, a narrative report will include a discussion of the design intention and its genesis.

Pre-requisite: Students must have completed Architectural Technology 5.