4.453 Building Technology in Real Estate Decision Making

Class Time: Mondays and Wednesdays 3:30 - 5:00 p.m.
Recitation Mondays 5:00-6:00 p.m.
“Skyscraper” Video Series every other Wednesday 5:00-6:00 p.m.

Classroom: W31-301

Instructor: Peter Roth, MIT Lecturer
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e-mail: peterroth@newatlantic.net
Office hours: Monday 2:30-3:30 p.m.

T.A.: Yanni Tsipis	Required Texts/Readers:
e-mail: ytsipis@mit.edu Reid, Esmond: Understanding Buildings
Office hours Wed 2:30-3:30 Course Reader (available at Copy Center)

This course introduces the structure of the building industry, helps students develop a framework for understanding building technologies and systems, and gives students a chance to practice problem-solving in exercises pertinent to real estate development, management, and investment. It is designed primarily for graduate students in the real estate program, however it should be very useful to a wide range of students interested in various facets of the building process.

The course is divided roughly into two parts. The first part addresses the various roles and responsibilities of key players in the development and construction process, and construction-related competencies required of building owners and developers. We will examine each component of the Owner/Designer/Constructor triangle, and review contract management processes, life safety (codes) regulations, cost estimation methodologies, and the concept of life cycle cost analysis. This background will help us to better focus on the second part of the course, when we focus on building technologies, methods, and materials, and their respective physical and financial attributes.

With each area of building technology, our discussions will focus on why and when a particular technology, system, or material is appropriate in terms of function, marketability, financial performance, and sometimes even aesthetics(!) We will take several field trips to building sites, where we can get a first hand understanding of building systems while learning about current projects in the area. We have also invited guests to bring us up to date on what’s happening with information technology systems for project management, energy management and operations systems, and the “Green Building” concept.

Course material will not be spoon fed. Students are expected to come prepared to each class ready to engage in a discussion about the topic led by the instructor and guests. Students will be asked to prepare for each session using assigned reading or case material available in the required textbooks and/or course reader.

Major assignments will focus on different aspects of the building development and management process, including building system selection using life cycle costing methodologies, evaluation of alternative construction methods for a new office building, and a team project developing a building scope and system selections for a new development project. In addition, students will analyze a set of contract documents throughout the semester in order that each student become familiar and comfortable with contract management documents, “working drawings,” and specifications. There will be a series of bi-weekly problem sets related to this material. There will also be a final exam.

Each student's performance in the course will be evaluated as follows:

15% each for the three major assignments
15% collectively for the problem sets
20% for the Final Exam
20% for Class Preparation and Participation

Please note that preparation for and participation in class is very important and represents a significant part of each student's grade.