“If one accepts the view of the building as a combination of a number of very different systems, each with their own elements and structure, forming configurations in space that join and separate, support or complement each other, and sometimes have quite different life spans and ‘modes of existence,’ then one accepts a sophisticated model that poses very intriguing design questions.” — N.J. Habraken, 1980

course description

At this point in your architectural education, this seminar requires that you have studied normative construction methods, structures and environmental controls. To varying extents, you have been asked in previous studio projects to incorporate what you’ve learned in these subject courses into your design work. However, if construction, structure and environmental controls are not considered until well into the design process, either the design concept or the competency of the building itself will be compromised. Furthermore, truly sustainable architecture requires a holistic design process throughout which issues related to how your building will be built must be addressed.

The word system itself has various interpretations within the education and practice of architecture. In practice, systems often refer to the organization and distribution of electrical wiring, mechanical equipment and plumbing with each associated with a specialized engineer. However, this definition of system as physical objects delivering services neglects other means to achieve the goals of these systems: to provide light, thermal comfort and access. Visual and thermal comfort are related to the enclosure, structure, plan and orientation as much as ducts, dampers, fixtures and wires. Consequently, this course focuses on systems as a way thinking about how to create environments as well as how to integrate the physical manifestations of these systems.

This subject is often taught by looking at case studies where the systems, however they are defined, are neatly separated and exposed. This facilitates dissecting or constructing a building one system at a time, but also biases the case studies toward “high-tech” architecture and larger scale buildings. While some of you may work for firms that deal with larger scale projects, it is likely that you will be involved in the design of housing at some point during your career, single-family detached or otherwise.

While the systems involved in housing are different than those used in what this course calls public buildings, designing housing from a systems perspective has numerous advantages. It is also clear that an architect may not want to design a building with all the systems and services exposed for any number of reasons, and again, systems thinking should not be abandoned just because the systems won’t be visible to the users.

I believe strongly that we must first discuss how we can see and construct the built environment before a meaningful discussion of the systems themselves can take place. While there a number of ways of seeing, the course will focus on four specific lenses, dimension, access, assembly and construction. These will give us a common language to compare our case studies to one another and apply to your own design work. Then, we will move on to the systems, including structure, enclosure, thermal comfort, lighting and site. For this course, you will be asked to find a well-documented case study that is similar in scope and program to your spring quarter studio project. During the first four weeks of the course we will analyze the case study, during the last five weeks we will use your studio projects.

Each week will be structured similarly. On Monday, I will give a lecture introducing the topic for the week. Every Thursday will be a pin-up of the case studies or studio projects analyzed in terms of the given topic. The analysis will be both graphic and written, presented digitally on 11 by 17 boards that will eventually become two books (one for your case study and one for your project).

This course meets the advanced technology elective requirement.