Housing Design

For the past 50 years, housing in the US has been a response to increasing affluence, marketing, and the landscape of the automobile. In the next 50 years, housing design will need to respond to a very different set of parameters - climate change, high fuel prices, infrastructure implosion, and a loss of economic preeminence in the world. How we design housing will have a major impact on our cities, on the world itself, and on how well we as a people can transition to this new set of circumstances. With these new demands, the complexity of housing design will rapidly increase: there will be more dense, compact developments, and with this density come new design challenges. This course will examine issues in housing design and production in two time frames: the factors and constraints which drive housing in the United States today (and the externalities which are often ignored), and the changing forces which will drive it in the future. Sustainability cannot be achieved through good intentions, but only by clear goals and appropriate strategies; the intent of this course is to bring the basic information and principles needed to effect change in housing design, structured in such a way as to make it directly helpful as it is applied in the design process.

Course Format and Requirements

This course will meet twice a week, with presentations by the instructor and research teams. Students will complete two projects in small teams. The teams will be led by enrolled students who will also be in a final housing studio. Texts: Reading excerpts on course Blackboard site

Research Projects

One project will entail research on a universal topic – a specific technological, economic, demographic, social or environmental issue which has clear implications for design. The second project will involve research into current and developing construction technologies which may be useful in future housing design. Each team will make preliminary presentations on its projects during regular class meetings (topic due dates will be available at the start of the term). Teams will then refine their research based upon class feedback, and will produce final research reports, to fit into a common course format by the end of the term. Research topics will include:

**Building technology research topics**
- Woodframe systems
- Concrete / hybrid systems
- Open building systems
- Enclosure
- Industrialized housing systems
- Mechanical systems
- Passive strategies
- Active systems
- Passive / Net Zero / GBC
- Soundproofing / fire separations
- Water and waste
- Life cycle analysis
- Energy analysis
- Landscape / stormwater
- Habitat / ecosystem support

**Global issue research topics**
- Development models
- Ownership models
- Demographic projections
- Social / economic segregation
- Mixed income
- Household mix
- Household types
- Approaches to density
- Neighborhood design
- Site selection / scale
- Unit types
- Marketing
- Mixed-use
- Environmental performance criteria
- Approaches to zoning
- Disaster planning