

housing for a changing climate

The climate is changing with greater speed and severity than we thought even a few years ago. As architects, our ability to change that trajectory is small, but our opportunity to shape how humans survive is tremendous. But we need more than resolve; we must extend our knowledge and skills so that as society shifts towards a more resilient way of dwelling, we have some clear and ready answers. We should respond to global concerns with a range of universal types that can fulfill our changing needs and address our changing circumstances, and with a firm grasp on emerging technologies that will enable us to reach those goals.

The carbon footprint of the United States is largely the result of our preference for the detached house and the consequent development pattern of sprawl over the past half-century, a pattern that has now spread to the rest of the world that can afford it. If we are to make any progress in slowing climate change, we must find alternative models for housing our population.

But while we architects welcome innovation, everyone else in the housing production process likes the status quo (even here in ecotopia). Most neighborhoods don't want new housing types or higher density. Government agencies take forever to change codes and regulations. Developers want to keep making money doing the same kinds of projects. If our proposals are ever to have an impact in the world outside academia, we must learn how to adapt our universal goals and types to meet local concerns and conditions, to reinforce the existing places. Technological solutions which ignore the reality of current constraints – market preferences and financial feasibility – will see limited implementation and have little effect.

Beginning in the prerequisite fall term Resilient Housing (ARCH 4/510), students will engage the critical issues we face, and research the solutions we will need. In the winter term we will examine typical unit and building designs that will work with typical sites, developing a kit-of-parts that can be applied on a range of typical sites. Later in the term, students will focus in upon specific types in sites to develop in great detail.

Premises and goals

- Architects can do little to change the climate change that has already been locked in, but we can do a lot towards building **resilience** - the ability for humans and their societies to adapt to and thrive in changing conditions.

- This can only be achieved through changing the **typical** patterns of building and dwelling in the modern world, at all scales. Individual signature buildings will not do it.
- Housing and settlement pattern are critical places to focus, perhaps the most critical.
- The current system has not only caused the crisis we are in, but it uniquely vulnerable to it. We must change it to 1) do no more harm, and 2) protect ourselves from the imminent changes.
- While housing design must respond to particular parameters (site, market, program), it must also respond to global parameters (building technology, production system, economics, environmental goals).
- Responding intelligently to the global parameters will yield clear housing types (at all scales) and systems, which can then be adapted to address local and particular conditions.
- Projects should push the boundaries towards serious environmental response, integrating issues of resilience with programmatic demands and spatial design from the beginning.
- However, students must demonstrate where their projects fall in terms of technological, social and economic feasibility, according to current conditions.
- Architecture students should graduate with more than good intentions - we can use this time in school to test new ideas and prototypes, seeing which ones could rebuild and reorient the housing production system.

Studio methodology

- **Typology:** Development of an integrated set of concepts and types for multi-family housing, from the scale of the room to that of the site.
- **Energy, environmental and resilience strategies:** These will be developed from the beginning of winter term, in tandem with typological explorations, to ensure that building performance is one of the generators of conceptual design. Detailed energy modelling will follow in the spring, with the goal of achieving net-zero performance, in buildings that will shelter us through catastrophic events.
- **Program:** Students will produce their own programs for their projects, which should reflect their understanding of demographics and market trends in the next 50 to 100 years. Program statements should be overwhelmingly focussed upon housing components; any ancillary uses should be minimal and diagrammatic.
- **Sites:** Rather than picking a site and designing a building, students will develop typical approaches and look for sites that work with

