Volumetric Modular Ecologies

Associate Professor Ivan Rupnik, with the participation of Ryan Smith (University of Utah)

While architects have “dreamed of the factory-built house” for much of the century, the discipline has struggled to meaningfully engage significant changes in housing delivery. At the same time, a global volumetric modular industry has emerged, with little involvement from the discipline. A number of factors have created opportunities for architects to engage with this industry in order to address new challenges, ranging from multi-unit housing to post-disaster resettlement. Building upon years of research at Northeastern University on this topic, this studio will consider two related issues, one being the future of the volumetric modular industry and the second being the potential role of the architect in that future. Students will examine the complex interplay of regulatory, material and cultural factors that have led to the industries expansion (and its problems), over the last two decades, while at the same time identifying the new design methods evolving out of interactions between the industry and individual architects.

To borrow a phrase from Le Corbusier, students will develop “eyes that see” the complex logistics of material lifecycles of the built environment through the lens of volumetric modular.

The studio will be conducted in close collaboration with Prof. Ryan Smith from the University of Utah, the preeminent scholar of offsite construction. Students will also be introduced to the emerging field of metabolic urbanism through the work of Prof. Kiel Moe. The studio will include field trips that follow material life cycles across the complete logistical territory, from material extraction, to fabrication, to transport and assembly, to occupation, to disassembly and reuse. In addition to North American precedents, we will also study the industrial ecologies of Japan, Sweden, Poland and Australia. As has been the case in previous years, in addition to the typical report of the studio research, original studio research output will be included in scholarly publications. In the fall, students will collaborate on identifying key opportunities for architects in the volumetric modular industry, culminating in a research report, which will be presented to the Modular Building Institute (MBI) at industries annual meeting, the World of Modular. In the spring semester, students will be encouraged to develop independent design projects that leverage the fall research. Students will have the opportunity to interact with industry leaders, architects and their peers at other institutions around the world.