



Left: Herman Hertzberger, Diagoon Housing, Delft NL. Right: Katsutoshi Sasaki, T-Noie, Toyota JP.

Minimax

Polyvalent housing

Spring 2021 — Option Studio
MWF 8:10am–12:10pm OL
Katharina Kral

“The only constructive approach to a situation that is subject to change is a form that starts out from this changefulness as a permanent - that is, essentially a static - given factor: a form which is polyvalent. In other words, a form that can be put to different uses without having to undergo changes itself, so that a minimal flexibility can still produce an optimal solution.” — Herman Hertzberger.

In light of climate change and urbanization, we have to rethink design and construction practices in terms of energy conservation measures, sustainable material choices, and the long-term usability of buildings. The capacity to accommodate future changes is an intrinsic aspect of sustainable design, but apartments in cities are often not tailored to the housing needs of a diverse, fluctuating urban population and are becoming increasingly unaffordable. The current pandemic further shows that most residential building typologies in a high-density urban context offer limited flexibility to adapt to changing needs (e.g. home working, childcare), and lack access to sunlight and outdoor space, which can significantly impact occupant health and well-being. Combining the temporal concepts of polyvalence and adaptation provides a new lens for tackling the conflict between the permanence of the built environment and the fluctuating needs of its inhabitants.

This studio challenges persistent housing paradigms and finite spatial configurations, leveraging emerging mass timber technologies, modular system thinking and spatial polyvalence to develop visions for innovative, adaptive, sustainable, and high-quality housing concepts. We will investigate hard and soft programmatic and structural design parameters, spatial efficiency, relationships within and between apartments and tectonic potentials of mass timber systems. Housing precedent and typology analyses will help systemizing aspects of “good” living environments. In tandem with hands-on material studies, these will converge in the design for a multi-family housing project.