ARCH 4/510 Winter 2023

DESIGN THE UNSEEN

Investigating the health of individuals, communities, and planet arising from the full life cycle of building materials in the built environment

CRN 20366 / 20428 | Thursdays 10:00-12:50 | WSB 451
Instructor: Prof. Mark Fretz, mfretz@uoregon.edu
Co-instructor: Amanda Ingmire, Registered Architect, Senior Policy Analyst, LFA Oregon DEQ Built Environment Program, amanda.ingmire@deq.oregon.gov

Today, the built environment is responsible for nearly 50% of annual global CO2 emissions contributing to the global climate crisis. Many of the methods used for designing buildings with high energy performance and net zero energy use often separate occupants more distinctly from the outdoors and natural world to maintain control over energy. The resulting new indoor environments concentrate human exposure to materials, pollutants, human microbial communities, lighting, and thermal conditions at a time when humans are now spending more than 90% of their time in these synthetic habitats. The rapid cultural evolution is often incongruous with how humans have biologically evolved and adapted, which is implicated with negative health effects.

In addition to the immediate health effects posed to indoor occupants in the built environment, the design and construction of modern environments has externalized health impacts to communities and ecosystems distant to project sites through the supply chains of complex building materials. The impacts of these design decisions are often unseen and disproportionately impact minority populations. Thus, this course will work to visualize and address the unseen in architecture to design for multiple scales of health, from individuals, communities, to the planet.
The format of the course will include lecture, guest presentations, discussions based on reading, collaboration with local design firms, written and graphic assignments, oral presentations, and field trips. The Oregon Department of Environmental Quality (DEQ) Built Environment Program will co-instruct the course and frame content through the five pillars of the AIA’s “Architecture and Design Materials Pledge” that include: human health, social health & equity, ecosystem health, climate health and circular economy.

Degree requirement fulfillment: Advanced Technology

Targeted student audience: students of architecture or historic preservation