

THICK SKIN

Emergent Ecologies of the Ornamental Building Envelope

'The ornamental dimension lies on the very border that separates enchantment and disillusion, magic and rationality. It makes architecture vibrate ...' *Antoine Picon*



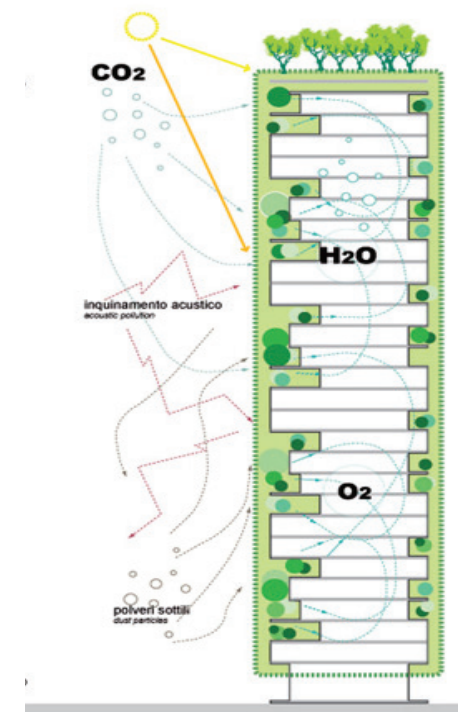
Background

The studio will explore architectural terra cotta assemblies to raise questions of environmental regeneration, resilience, and adaptability and their overlay on contemporary building ecologies and a circular economy. We will develop experimental bioclimatic façade/screen systems for an existing building that reimagine the role of the architectural surface in the building's adaptation to its local ecology and its ability to provide ecosystem services. Focusing on the interactions between bodies, buildings and microclimates we will explore the role of the building skin in adapting to climate change. These performative surfaces by their very nature will be ornamental. The studio will attempt to understand ornament and its role in both socio-cultural and environmental "performance".

Understanding that the ubiquitous architectural envelope of the modernist glass building has been "resolved" in a manner that distances us from our environment, we will replace the bubble with enchanted terra cotta skins that potentially redraw the relationship between the interior and exterior and question the conventions of current construction systems. Design will draw from ecologically focused principles including but not limited to biomimicry and biophilia to generate modular systems that celebrate the complexity, variability, responsiveness, and uncertainty inherent to natural systems. These systems will be informed by direct interaction with and logistical support from renowned architectural terra cotta manufacturer, Boston Valley Terra Cotta and the façade engineers and ceramic artists that regularly contribute to the wealth of research collected at the yearly Advanced Architectural Ceramics Workshop.

World Making

Coupling architectural terra cotta, a medium with cradle-to-cradle potential, and the restoration of existing building stock, students will have the opportunity to delve deeply into the more responsive and responsible building strategies that a livable future world demands. Proposals will have the opportunity to consider the potential of upcycling and demountable construction systems that can make and remake our cities while reducing the extractive practices of current construction practices. Renovation is defined as the act of reinvigorating or reviving, the act of bringing life into an existing structure. The studio will take on this act as making a new world where the local ecology, with all its sensory stimuli, comes into the old bones of the building through its new skin. The porous skin is not a barrier, it calls for a world where co-existence and stewardship of our air, land, and water matter because they impact our somatic boundary. Following on this haptic level of worldmaking, we will also explore the world that literally opens for each individual when they go down the rabbit hole of dedication to a craft, an assembly, a material



Bosco Verticale in Milan Will Be the World's First Vertical Forest, by Boeri Studio, by Boeri Studio, Built 2012.

Biphilic terracotta screen prototype built at the 2020 Architectural Ceramic Assemblies Workshop, Workshop, Cook Fox Architects

Context

Our site will be the University Campus and the glass office building, in particular the Administration building at CMU, Warner Hall, which sits prominently at the edge of the city and the campus green. Our investigation will focus on reimagining,

rebuilding and reprogramming the environmental envelope of this existing modernist building which exhibits an attitude of distancing from the local biome and climate, defining occupants as remote viewers rather than inhabitants of the local ecology. Proposals will redefine the grey site of the existing modernist campus building as a living performative landscape. While maintaining its structure, and considering how to dismantle its skin for reuse, we will also consider how its environmental service systems can be rethought in conjunction with a cladding that is more than skin deep. By focusing on the augmented building skin and its performative assembly systems, the studio aims to address building envelope's role in both social and ecological engagement. Seen as an expansion of the landscape, the building envelope can provide alternative strategies at the macro and micro levels that bring multiple strains of new life into the building and quad. The active skins will aim to provide keystone elements in the local ecology as well as the life of the campus.

Program

Recognizing we are inseparable from and dependent on natural systems, we will design and program thick, porous and passively responsive envelopes that integrate ecosystem services into architectural terracotta systems. We will in effect be programming the interface between the building occupants and the world, how they engage climate, how they steward the local ecology, how they push beyond the environmental barrier and bring the inside out connecting their workspace with the campus environment, and maybe encountering a bit of programmed wilderness at the threshold to the University's may office. These thick skins will aim to celebrate the complexity, variability, responsiveness, and uncertainty inherent to natural systems.

Limiting the design focus to the boundary layer will allow projects to be developed in three scales: infrastructural, building, and detail. At the macro scale we will address the role of the building skin in engaging a variety of ecological and ambient system components, both man-made and natural. We will look into the regenerative potential of engaging both human and non-human agents like flora and fauna, hydrology, weather, etc. At the micro scale the building enclosure as site infrastructure will reimagine the potentials for ceramic envelope systems. Coupling architectural terra cotta, a medium with cradle-to-cradle potential, and the restoration of existing building stock, students will have the opportunity to delve deeply into the more responsive and responsible building strategies that a livable future demands.

Learning Objectives

- To build an understanding of architecture's role as productive component of its biome through passive and active engagement with the environment, climate, ecology, energy and living systems.
- To develop an understanding of ecologically responsible material use (terra cotta and reuse of existing building stock).
- To experience the process of working with a manufacturer in the design process.
- To develop morphological transformation of surface assemblies and design through the understanding of the systemic nature of such assemblies.
- To develop and understanding of terra cotta green wall and green roof assemblies and their thermal properties.

