



Image source: Wendy Lawrence Ceramics

# POROSITY MATTERS

## Vertical Sponges and Pervious Grounds

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Affiliated courses: SE Vertiefter Entwurf (848137), SE Konzept und Methoden des Entwurfs (848138), UE Methoden & Prozesse (848108)

### Main Objective

The studio investigates porosity and weathering as active design agents, aiming to reimagine the architecture as a responsive, hydrological system and vertical landscape within the urban environment.

### Brief

A building is far from inert; like a physical landscape, it stands as a palimpsest continuously inscribed by the passage of time and the forces of its environment. This studio positions the architectural envelope as a responsive, porous interface—a living skin that negotiates between interior and exterior conditions. Exposed to environmental influences such as moisture, wind and temperature fluctuations, buildings experience material deterioration, a process generally considered undesirable and therefore actively avoided. Over a building's lifespan, materials are routinely replaced, and the patina is removed. During the planning process, water is directed away from the building's exterior to a secondary, concealed infrastructural layer. The façade becomes armour, shielding the building from its environment. Challenging the current condition, the studio will investigate the following propositions:

**What if** we embraced weathering as a positive force, ultimately enabling a dynamic dialogue between the building and its environment?

**What if** we examined percolation not just as a hydrological phenomenon, but as a spatial strategy and material condition?

**What if** the architectural object were no longer conceived as sealed and static, but as a porous, multilayered system that negotiates water, wind and thermal fluctuations, while fostering biological growth?

The studio's central inquiry draws on the metaphor of the sponge city — a concept where urban landscapes absorb and manage rainwater to reduce flooding and improve water quality. This studio seeks to translate its horizontal logic into a vertical typology: a layered building that absorbs, redirects, and processes water flow. In this scenario, walls become thickened and stratified, their sections resembling tectonic formations. Mimicking an infrastructural landscape, the architecture becomes capable of retaining, channelling, and remediating rainwater. Particular attention is given to conglomerate, a distinctive and historically significant Alpine material. Its granular texture, rich colour, and natural porosity serve as both a material precedent and a conceptual anchor. Used directly or replicated through reconstituted aggregates, its lithic character offers a lens through which questions of sedimentation, fracture, and reassembly are materially negotiated.

*'For rain is always prepared to wreak mischief, and never fails to exploit even the least opening to do some harm: by its subtlety it infiltrates, by softening it corrupts, and by its persistence it undermines the whole strength of the building, until it eventually brings ruin and destruction on the entire work.'* (Alberti)

Starting the studio with the development of a façade fragment: a detailed, digitally and physically prototyped section made from partially reclaimed mineral material. Over the year, this prototype will serve as a testbed for slow growth and environmental response. As the semester progresses, the façade fragment will evolve into an elevated building, where the roof, plinth, garden, street, and façade act as water-governing elements. Situated in Salzburg's historic inner city above Sigmundstor, the proposal addresses runoff, noise, heat, and site porosity. Rainwater is not shed but guided, and different building parts are reconceived as infrastructural agents within a vertical hydrological system. Rather than the sole pursuit of formal novelty, each architectural gesture is understood as an intersection of ecological and environmental pressures. Consequently, the studio calls for an investigation into material reuse, stereotomy, aggregation-based massing, and the operational logic of carved construction.

### Site & Programme

Students will design a mixed-use auditorium, nestled between the stone walls. Given this framework, students can add project-specific programmatic elements. All projects are situated above the Sigmundstor/Neutor in Salzburg (47°47'56.0"N 13°02'23.5"E).

### Pertinence

Based on the findings of the Second Austrian Assessment Report on Climate Change, the projects will offer insights into designing innovative buildings that respond to climate change.

### Excursions & Lectures

As part of the studio, two site visits to Salzburg will be organised in autumn and spring. Travelling expenses are not covered. Additionally, input activities will be organised in and around Innsbruck. A lecture series by architects and researchers relevant to the studio brief will accompany the studio.

### Literature

Selected literature relevant to the studio brief will be provided via OLAT and discussed in parallel with the studio sessions.

### Methods

The studio will introduce students to digital environmental simulations, prototyping, weathering experiments, and computational design techniques. The focus lies on *experimenting* and working with both digital (drawing) and material (making) methods in a hybrid fashion.





*Image source: Andreas Körner*