Where
Blumer Lab,
Turconi -1

From Waste to Resource

About

Design Optimization and Augmented Fabrication for the Reuse of Concrete Cutting Waste.

This experimental workshop introduces a novel approach to refurbishment, emphasising the careful assessment of existing buildings, the strategic demolition of unnecessary elements, and the in situ utilisation of concrete waste, and thereby aiming to significantly reduce energy and material consumption.

Part 1: Computational Design of Parametric Walls with Concrete Waste
In this segment, we will explore innovative computational design techniques to repurpose concrete waste into new architectural elements. The focus will be on creating a parametric wall, a process that begins with mapping reclaimed concrete pieces into a new, cohesive design. By employing advanced computational tools, we'll demonstrate how to efficiently utilise irregularly shaped concrete fragments, optimising both the aesthetic and structural integrity of the wall. Attendees will gain insights into the methodologies for designing with waste materials, promoting circularity and reducing environmental impact in construction practices.

Part 2: Assisted Assembly of Concrete Pieces in Unity
Following the computational design phase, this part of the workshop will delve into the practical implementation of the designed parametric wall using the popular game engine Unity3D. Here, we will bring the computational model to life, showcasing a step-by-step process of assisted assembly. Through the use of augmented reality (AR) and virtual reality (VR) interfaces facilitated by Unity3D, participants will learn how to visualise the assembly process and ensure precise placement of each concrete piece in a step-by-step guided assembly. This interactive approach not only streamlines the construction process but also enhances accuracy and efficiency in building with reused materials.

Schedule

Workshops are scheduled from 9:00am -- 16:30pm

Detailed schedules per workshop to be announced soon!

Team

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