



SUSTAINABLE SYSTEMS

Fields of Expertise TU Graz

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Urs Leonhard Hirschberg

Source: Lunghammer – TU Graz



In the 23rd round of the initial funding program, a total of six proposals were submitted in the Sustainable Systems category. The quality of the projects was high and we were glad to be able to fund five of them.

Eva Sollgruber from the Institute of Design and Building Typology is working on an FFG project submission titled **Circular Building Refurbishment (CBR)**. A follow-up project to the ongoing ELEMENTS project, which is developing a rating system for postwar (1960-1979) building stock in Graz, CBR proposes a pilot-project, in which a consortium will develop a novel type of renovation process for buildings from this period that maximizes the use of circular principles, while also being mindful of architectural qualities of the existing structures.

Rose-Anne Gush from the Institute of Contemporary Art proposes an FWF PEEK project with the title **Mountain Morphologies**. Taking as a premise the EU's Critical Raw Materials Act (CRM Act), which states that renewable technologies are "far more materials-intensive than conventional ones." The artistic project will look at the spatial dynamics of this inherent tension and explore the paradoxes of the current transition: "We are ravaging the environment by extraction in order to gain the power to recharge, to produce renewable 'clean' energy."

Ena Kukic from the Institute of Construction and Design Principles proposes an FWF project with the title **Beyond Demolition: A Renovation-First Approach to 1960-1980 School Buildings in Graz and Styria**. The project aims to combine building stock analysis, Life Cycle Assessment (LCA) and design-led scenario development to create a decision-support tool for policymakers, architects, and public-sector stakeholders to guide renovation and reuse strategies for school buildings. The project argues that school buildings represent a uniquely strategic opportunity in the context of sustainable development. Their continuous use, high visibility, and symbolic value make them ideal candidates for showcasing the potential of sustainable renovation.

Augusto Cezar Maciel Soares from the Institute of Technology and Testing of Construction Materials proposes an FFG project titled **Low-Carbon Mortar for 3D Printing**. There is an urgent need to decarbonize the global cement and concrete industry. The use of calcined clays is one of the most promising low-carbon future supplementary cementitious materials to replace cement. In the proposed project low-carbon mortars will be developed for 3D printing applications, which the applicant sees as a key upcoming technology in digitalization and automatization of the building sector.

Thomas Klatzer from the Institute of Electricity Economics and Energy Innovation wants to contribute to an international consortium of partners to apply for a Horizon Europe 2025 grant with the project titled **Modular Cross-Regional Long-Duration Energy Storage Integration**. The targeted call centers on the development of a cross-regional network and market model for optimization of long-duration energy storage (LDES). The consortium partners in Graz focus on the development of a highly flexible and modular integrated energy system optimization model (ESOM).

We wish all applicants the best of luck with their proposals and hope that the resulting projects can one day be presented on these pages, just like the work of Bernhard Geiger on page 33.