futureBloc - S

Recycling wall system with natural insulation materials

futureBloc - S is a research and development project by Salzburg Wohnbau, Fachhochschule Salzburg and several regional partner companies. The aim is to develop a circular wall system that is largely based on regional secondary raw materials. The approach focuses on using materials from building demolition as a resource instead of relying on primary materials and thereby demonstrates an alternative to linear processes.

Relevant Resources in the Loop

- **RECYCLING CONCRETE** - from demolition materials as the core of the block
- Wood-concrete blocks with **recycled WOOD** and **CONSTRUCTION MATERIAL CONTENT**
- Insulation panels made from **compressed GREEN WASTE or WOOD FIBRES**
- **BIOBASED ADHESIVES** - (e.g. tannin-based foams) for connecting the components
- **MINERAL MULTI-LAYER PLASTER** - as part of the wall system

Methods & Approaches of Circular Economy

The futureBloc - S wall system combines several components into a fully circular construction element. The central component is a wood-concrete block with a core made of recycled concrete from demolition materials. This is complemented by insulation panels made from compressed green-waste fibers and a mineral-plaster system. Bio-based adhesives such as tannin-based foams are used to connect the individual components. Through this material combination, the wall system is designed in a way that allows its components to be separated and reused after use.

Impact & Added Value

futureBloc - S demonstrates how construction materials from building demolition can be reintegrated into new building processes. By using recycled concrete, natural insulation materials and bio-based binding agents, a wall system is created that can be fully reused. At the same time, the use of regional materials reduces dependency on global supply chains and strengthens regional value creation in the construction sector.

Ecological Benefits

- Use of recycled concrete & secondary raw materials
- Application of regional natural insulation materials
- Reduction of CO_2 emissions through regional material cycles
- Circular wall system without metal reinforcements or plastic components.

Social Benefits

- Collaboration between research institutes, the construction sector & regional companies
- Knowledge building in circular construction
- Strengthening regional value creation & cooperation
- Contribution to the transformation of sustainable building practices

Economic Benefits

- Use of regionally available secondary raw materials instead of imported materials
- Reduction of material costs through recycled construction materials
- Strengthening regional supply chains
- Potential for new circular construction products