

BRICK BUILDING FUTURE Cluster

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Keywords:

- Building culture Construction
- Closed loops Governance Planning Tools
- Ecology Energy efficiency Indicators
- Mobility Technology transfer

Member group:

- Architects Builders Citizens Craftsmen
- Home Owners Planners Politicians
- Policy Makers



Results and outcomes (use cases):

The cluster **Brick Building Future** is an association of companies from Salzburg and Upper Austria with the aim to generate further knowledge about monolithic brick constructions.

The central question of the resulting research project was:

To what extent show massive brick walls without insulation also properties of energy efficiency, which are comparable with those of highly insulated buildings?

Problems with the implementation in practice:

- No consideration of storage effective masses in the Energy Performance Certificate
- Only the first 10cm of storage effective masses are taken into account for the summery overheating. (ÖNORM B8110 Part 3)

The Answer

It has been demonstrated on two identical objects, that it is possible to condition buildings with exterior walls of monolithic brick (passive house wall quality) plus activated floor and ceiling panels made of reinforced concrete, with simple technical measures and low energy use of alternative sources of energy all year round.

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Description:

The Cluster was initiated by the **Innovation and Research Centre BUILDING**.

Following on, the cluster had created its own research project which was funded by the regional Economic Development of the province of Salzburg and the European Regional Development Fund.

The research phase extended over a period of two years at two simulation rooms in cooperation with the Technical University of Vienna, the Danube University Krems and the University of Applied Sciences on the issues mentioned above.

The cluster is an association of companies along the entire supply chain in construction industries, these range from construction companies and property developers to manufacturers of products for construction.

Relevance for inter-municipal planning: (AlpBC)

Brick has been a widespread building material over the centuries in the Alpine region and it has very strong regional roots, and thus also has significantly influenced the appearance of the Alpine Building Culture.

By using oil bound insulating materials, the use of brick as a supporting structure was substantially decreased and the structural design got more complicated and therefore more susceptible to injury. As part of the cluster has been trying to prove that buildings with monolithic external walls of brick can be as energy efficient as buildings with petroleum bound insulation. This evidence has been done well and the structure of the single-shell exterior wall also stands out because of its simplicity in the processing.

During the project a number of knowledge transfer measures for SMEs have been made, these were carried out by means of seminars, field trips and expert forms.

A further development of brick buildings in the areas from ventilation technology to low-tech solutions is surely desirable.

Relevance for policy goals: (Alpine Space, Europe and the region)

To reach all year round comfort in buildings is a central demand in the EU Buildings Directive 2020. This project has been trying to realize this claim with regional materials and to avoid petroleum – based insulation in the exterior walls.

The store effective mass of buildings plays an important role; this may very well-with proper planning and execution-compensate both the strong temperature fluctuations in winter and in summer, as they now occur frequently in the alpine region.

In particular, the proof of summer comfort without cooling of buildings has been one of the objectives of this research project, since EU-wide growth rates for cooling requirements at buildings are estimated by 2020 to 40 %.