Fraunhofer WKI

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LIGNA 2025

Innovative façade element for sustainable construction

At LIGNA 2025, the Fraunhofer WKI will be presenting an innovative curtain wall element as a sustainable solution for building refurbishment. It uses durable raw materials such as robinia wood and bio-based coatings for less durable types of wood such as spruce and poplar.

The façade element shows new ways for sustainable timber construction and focuses on circular utilisation concepts for renewable raw materials.

The combination of wood and cement increases functionality and versatility. In addition, innovative sensors are being developed to detect temperature, humidity and material changes in order to recognise material fatigue at an early stage and control the replacement of components.

In the load-bearing area, the researchers are focussing on wood-based materials such as laminated strand lumber (LSL) and oriented strand lumber (OSL), which are ecologically beneficial and reduce the CO_2 footprint. For insulation, they use advanced insulation materials made from mycelium and recycled materials.

The mycelium insulation material developed together with YcoLabs uses organic fungal growth as a binder, which enables a wide range of applications. These insulation materials are to be further developed in pilot projects with the construction industry.

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