

Whipping Swiss cottages into green shipshape

December 3 2012, by Corinna Engelhardt



By making Strickbau wood log building more energy efficient while restoring them in line with conservation principles, scientists are participating to their revival and use for modern living.

Scientists aim to create a sustainable future for the Strickbau building technique, typical of the Swiss Appenzell region. The challenge is to use modern features respecting historic architecture to bring them back from the verge of extinction. Working alongside Swiss conservation experts, researchers from the EU funded 3ENCULT project are looking for the best way to optimise the [energy efficiency](#) of the old buildings, in line with Swiss monument conservation guidelines. By reducing energy inefficiencies the project is aiming to help reduce [greenhouse gas](#)

[emissions](#), while also reducing costs and improving living comfort.

Today, not every Strickbau house is what it seems. "The outward appearance is often just a copy of the old traditional Strickbau style," Alexander von Kienlin explains, "Inside the houses are often hybrid constructions of industrial ready-made elements." Von Kienlin is an architect and architectural historian who has become an expert on the matter. He also works for the Institute of Historic Building Research and Conservation (IHBRC) at the ETH Zürich, Switzerland.

Developed during the 18th century, Strickbau features a highly recognisable architecture with evenly planking and wooden shingles on the facades. "The genuine Strickbau buildings are built with massive wood, hence very robust and much better suited for the climate here," adds Von Kienlin. What gives them building their strength is that beams have to be conical to enable dove-tail connections at the corners whereas beams are fitted perfectly on top of each other. At the beginning of the 20th century, however, this technique was slowly abandoned. The manufacturing knowledge was also lost.

Previous [restoration efforts](#) have been studied by the local conservation body of St. Gallen together with the IHBRC. "In the past a great many wrong decisions were made, which led to distortions and ultimately to the demolition of some houses," Uta Hassler, IHBRC director, tells youris.com. Strickbau buildings were often totally gutted and rebuilt with a modern interior.

The research of the 3ENCULT project aims to remedy this situation through an energy efficient retrofit of Strickbau without losing their historic character. One of the scientists' aims is to achieve airtightness in the house by adding new windows and finding solutions for moisture transport. In addition, ensuring adequate inner insulation is another key issue. That's because outer insulation would destroy the unique and listed

look of such buildings with their shingle and timber facades. To do so, the 3ENCULT research team is testing different techniques, such as vacuum-insulation- and wood-wool-panels, to identify the most suitable solution.

Despite all the efforts to revive Strickbau with modern, energy efficient, restoration methods, its building techniques is on the verge of extinction. Indeed, it is no longer taught in building trade professional training. However, there is a recent revival and interest is coming back with some carpenters acquiring the skill. It will take time, however, before they acquire the same level of knowledge as their elders. Von Kienlin concludes: "According to experience, it takes up to two generations for a lost craftsmen technique to be carried out in the same quality level after their reintroduction."

More information: www.3encult.eu/

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