

INDUSTRY NEWS

March 2019

Glass protects wood

- **The new building of the Erste Group in Vienna is a spectacular complex featuring a double facade, where the outer glass facade protects the wooden windows from weathering.**

An important design feature of the new building near Vienna's main station is the glass facades, which reveal the wooden windows behind them that separate the offices from the outside. This is a double facade, where the outer glass facade protects the wooden windows fronted by a shading system from the effects of weathering. The wooden windows were required as an ecological component with a view to obtaining sustainability certification, as were the controlled ventilation system and wooden furniture for the 4,500 employees.

According to window manufacturer Katzbeck, architects Henke Schreieck commissioned the custom-designed windows for this project that were then subjected to various tests for air permeability, sound and noise insulation. In this conjunction, the manufacturer partnered with the [HFA \(Holzforschung Austria\)](#) (Austrian Forest Products Research Society) in Vienna.

The total 7,321 window frames (in oiled larch) measuring 2.40 m to 3.40 m high, were delivered according to building progress. The glazing was mounted into the frames on site by a steelwork fabricator and the frames then installed into the buildings. Due to the curved facade almost all windows had different dimensions. Every office has controllable, room-height ventilation openings.

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Unusual assembly technique

“Initially, an aluminium frontage was planned,” said Peter Schober, Head of Construction Engineering and Windows Division at the HFA. But other arguments prevailed:

- Wood was the main contender due to the certification requirements.
- The builder initially had reservations about fire safety and the durability of wood.

But this scepticism was quickly defused and ultimately, a joint visit to a bank building in Rosenheim featuring a wood facade managed to convince all stakeholders.

Extensive tests resulted in new assembly detail

What is special, however, is the position of the glass facade, which led to an unusual installation method for the windows.

As Schober says: “In the course of the installation process there was a discussion about how in the case of metal facades used in double facades the inner metal windows are supposed to be mounted first and then the external glass elements. But in some cases this would have meant directly exposing the wooden windows to weathering for which they were not designed. So the installation process for the facade had to be reversed: first the outer panes, then the inner windows. Changing the order resulted in a cost-effective assembly. The windows were delivered by crane and stored floor by floor. Then the impact panes were mounted first followed by the installation of the windows from the inside.”

In this context, the HFA was responsible for one construction detail that ultimately made air-tight installation of the windows possible in the first place. Because each window has connections at the top, bottom and sides, the manufacturer initially felt that it would be very difficult to ensure air-tight installation. Under these circumstances, a build-up of moisture could not be ruled out. A 1:1 sample within the scope of the HFA tests with the climate specified by the architect actually did reveal condensation and a penetration of moisture into the structural connection insulation. By modifying the installation with a kind of rear ventilation the build-up of moisture could be inhibited, which has proven effective in construction practice. Schober concludes: “Our contribution was to support the realisation of the project and/or demonstrate its feasibility, and to optimise the design in collaboration with the manufacturer, from a cost standpoint as well. This meant that we

were also able to define the assembly method in such a way that the installation could be handed over without defects.”



*BU: The new building of the Erste Group in Vienna, on the grounds of the former South Station, was designed by Henke Schreieck Architekten and is a spectacular building complex. Four buildings with curved glass facades and up to ten storeys enclose light-flooded interiors and public spaces. The project was awarded a platinum certificate by the Austrian Society for Sustainable Real Estate (ÖGNI).
Photo: Henke Schreieck Architekten, Vienna*

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