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# Renovation of several factory buildings, Berlin:

# Modern comfort in historic halls

# The Spandau district of Berlin has always been an important centre of commerce and industry. Some of the now converted factory halls date back to the start of the previous century and are listed buildings. The fact that the historical industrial glazing was also replaced during the conversion is only apparent at second glance. The large windows were faithfully reconstructed using the thermally separated Janisol Arte 2.0 steel profile system from Schüco Stahlsysteme Jansen and structurally reinforced.

A building several hundred metres in length flanks Am Juliusturm, the road connecting the districts of Charlottenburg and Spandau in Berlin. Known as the Südgelände, this complex consists of three interconnected halls that form a listed building. As part of a comprehensive refurbishment, the facades here – some of which still feature the original windows – were upgraded in terms of energy and static construction during ongoing operations under the direction of OPB Obermeyer Planen + Beraten, Berlin branch.

One focus of the measures was the renovation of the large industrial glazing. The rectangular and arched-head windows with up to 24 small, single-glazed panes were dismantled – including the concrete window sills inside, when present – and replaced with windows made of thermally separated steel profiles. The architects chose Janisol Arte 2.0 from Schüco Stahlsysteme Jansen for the faithful reconstruction. “We wanted to preserve the original appearance as far as possible,” says Torsten Kliem, architect for structural engineering at OPB Obermeyer Planen + Beraten, who oversaw the project from the outset. “During the course of our research, we came across Janisol Arte. Initial contact was followed by an in-depth discussion, during which we quickly reached a consensus. What convinced us – the surprisingly beautiful feature of the profile – is that it fully complies with the requirements of the heritage preservation authority.” The extremely intricate steel profile system makes it possible to create glazing with fine grid dimensions and high stability that is almost identical to the appearance of the original windows and at the same time meets the latest construction requirements.

In consultation with the State Office for the Preservation of Historic Monuments, the original industrial glazing was replaced in several batches by visually identical constructions made from Janisol Arte 2.0. The first construction phase concerned the basket-arched windows on the south facade, which is the side facing the street. After the installation of sample windows and their approval by the State Office for the Preservation of Historic Monuments, the refurbishment began in autumn 2013. “Based on these positive experiences, the east facade was then immediately started and completed by spring 2014,” says Kliem, outlining the work schedule. From there, the northern facade and the western part of the Südgelände were tackled.

The western part of the Südgelände is characterised by the fact that its oldest building – the factory hall from 1910 – has two rows of windows: a lower row of basket-arched windows and arched-head windows above, some of which are up to 4 metres high. “In these areas, we installed vertical swords in the window opening as a substructure. The goal here was to absorb the loads of the double insulation glazing in the heat-insulating profiles as well as the significant loads generated by wind pressure and suction,” says Dimitrij Simon, Project Manager Building Construction/Structural Planning at the Berlin office of Obermeyer Planen + Beraten, describing the customised solution with the Janisol Arte 2.0 steel profile system. “The steel profile itself was used without any further modifications – apart from the areas where it had to be bent.”

The real challenge for all involved was to carry out the facade refurbishment under continued operation. All measures were precisely timed according to the production schedule. “We had to adhere strictly to the given time frames in order to not interfere with production,” explains Simon. “It was also necessary for all the companies involved to agree on the strictly coordinated construction schedule beforehand.” The windows were numbered and the replacement logged in a timetable and action plan that was binding for all parties involved.

In one work cycle, between two and four windows were replaced. The high temperature sensitivity in production required additional heat protection measures, while dust protection posed another problem. Temporary enclosures made of OSB panels, which were additionally insulated during the cold season, offered the solution. “The old windows were fastened with walled-in flat-iron spreading anchors,” recalls Simon. “The development also caused considerable damage to the masonry, which had to be rectified before the new windows were installed.” By staggering the work across up to three stations, it was possible to minimise the waiting times caused by the masonry work across the entire project.

Kliem’s summary after completion of the work: “The Südgelände halls are a perfect example of how a historical facade can be structurally refurbished at reasonable expense and adapted to today’s building standards without compromising its appearance. We continue to be approached by architects who happen to pass by, which shows the waves that the facade is making across Berlin.”

**PROJECT DETAILS**

**Architects and specialist planners:**

Obermeyer Planen + Beraten, Berlin office

**Metalwork/window manufacturer:** L & F Metallbau GmbH, Stahnsdorf

**Steel profile systems:** Janisol Arte 2.0

**System supplier:** Schüco Stahlsysteme Jansen, Bielefeld

**Text:** Anne Marie Ring, Munich

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**Further information for your readers**

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**From here, captions:**

pic\_01 CF013429.tif: South facade; street side Am Juliusturm:

As part of a comprehensive refurbishment of three interconnected factory buildings from 1910, 1930 and 1950, faults in the masonry were eliminated and the existing windows were replaced. The rectangular and arched-head windows with up to 24 small, single-glazed panes were dismantled – including the concrete window sills inside, when present – and replaced with windows from the thermally separated Janisol Arte 2.0 steel profile system from Schüco Stahlsysteme Jansen.

pic\_01 CF013429.tif: South facade; street side Am Juliusturm, west wing:

A building several hundred metres in length flanks the road connecting the districts of Charlottenburg and Spandau in Berlin.

pic\_01 CF013429.tif: South facade; street side Am Juliusturm, west wing:

Some of the historic factory halls date back to the start of the previous century and are listed buildings.

pic\_01 CF013429.tif: South facade; street side Am Juliusturm, middle wing:

An existing window that has been refurbished on the left, next to a reconstructed window on the right. At first glance, there is no difference.

pic\_05 13451\_2: Gable on north facade, building no. 52:

Another part of the measures was the renovation of the brick facade in line with listed building requirements. Damage was rectified, visual defects were reconstructed and bonds were restored.

pic\_01 CF013429.tif: North facade; building no. 45:

The arched-head windows in the gable wall are up to 4 metres high. In these areas, vertical swords were installed in the window opening as a substructure in order to absorb the loads of the double insulation glazing in the heat-insulating profiles as well as the significant loads generated by wind pressure and suction.

pic\_01 CF013429.tif: West facade:

Outward-opening stairwell door with side locking sash made from Janisol.

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