ALUMINIUM & ARCHITECTURE

CUSTOMER REFERENCE FOR
HUECK GMBH & CO. KG LÜDENSCHEID

KÖ-BOGEN

LIBESKIND FAÇADE WITH SOLUTIONS FROM HUECK

ALUMINIUM SYSTEMS
HUECK
GERMAN ENGINEERING SINCE 1814

TOP FAÇADE WITH "INVISIBLE" WINDOWS

01

Façade type 1:
Vertical façade type with complex patterns of glass and stone. Parallel opening window based on Lambda 110.

02

Façade type 2:
Horizontal façade type consisting of flush-mounted stone and glass elements.

03

Façade type 3:
Entirely glass façade with front-mounted aluminium slats. Tilt/turn sash based on Lambda 77 L.

04

General view

With a height of 26 metres and a perimeter of 500 metres, the new Kö-Bogen complex in Düsseldorf is already an eye-turner purely based on its size. But the special thing about this two-part ensemble, designed by top New York-based architect Daniel Libeskind, is the smoothly curved façade with its striking patterns constructed in glass, stone and aluminium. HUECK's project department worked closely with the metalworking company Lindner to develop the "invisible" solutions for more than a thousand windows featuring a variety of opening types.

Libeskind created in Düsseldorf a two-part building with five storeys for offices, shopping and gastronomy. In keeping with the complex's smoothly curved shape, the spectacular 15,000 square metres of façade trace out concave and convex lines. Three different types of façade give Kö-Bogen a different look from every angle: the glass façade with front-mounted horizontal aluminium slats; the horizontally structured, striped façade made of light-coloured natural travertine stone with entirely glass elements; and the heavily structured vertical façade made of stone and glass. Libeskind didn't want the sashes of opened windows to interrupt the overall look of this complex pattern of vertical and horizontal structures. So, although the opening elements needed to be functional, they also had to be as invisible as possible.

"This project was one of the most complex in my career so far and represented a special challenge for us," explains project manager Wolfgang Meister from HUECK's project department. The metalworking company carrying out production created every single opening element on the building using HUECK profiles, which were each adapted to the special challenges. For example, the Lambda 77 L series was used as the basis for developing a tilt/turn window sash with modified contours and bonded glazing for use in the curved, entirely glass façade with front-mounted slats. In the horizontal façade type consisting of flush stone and glass elements, many of the slabs of natural stone conceal motorised, parallel opening windows with modified Lambda 110 profiles. The special profiles were therefore subject to two key requirements: supporting the considerable weight of the slabs and allowing for the necessary substructure.

Parallel opening windows based on the Lambda 110 series were also used in the spectacular vertical façade type, with its complex pattern of glass and stone. "The frequent alternation between natural stone and glass was particularly challenging here, as were the angled transitions," explains Meister. "Faced with the need to come up with a solution, we laser-cut special corner brackets specifically for this purpose."

"The thing that caused us the biggest headache, however, was the glass façade in the courtyard," recalls Meister. After all, the floor-to-floor glazing in this area entails sash weights of over 300 kilos. The top-hung, outward-projecting windows, based on the Lambda 110 series, therefore required fittings that would ensure total fall protection even when the windows were open. In collaboration with the fittings manufacturer, HUECK's engineers modified an existing special-purpose fitting and developed a special dampener for the opening mechanism. "We then retested the resulting piece thoroughly under maximum loads at HUECK's testing centre."


04

BRIEF INFO

HUECK CONSTRUCTIONS:
Lambda 77 L special construction, Lambda 77 L IF, Lambda 110 special construction, Trigon 50 SG

ARCHITECTS:
Studio Daniel Libeskind, New York City

METALWORK:
Lindner Fassaden GmbH, Arnstorf

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