

Press release

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Roto Object Business: Successful cooperation with Dobler Metallbau and Schüco for “FOUR Frankfurt” / Fully concealed special Turn-Only hinge side to solve problems / Project-specific advice for architects and metal constructors / Specialists for hardware solutions in aluminium construction at BAU

New custom solutions for metal construction at BAU 2023

Leinfelden-Echterdingen – Acclaimed architect Ben van Berkel declares on his website that the building ensemble “FOUR Frankfurt” designed by him “is the fresh vision of a contemporary city”. His plans are currently being brought to life in the city on the River Main. Dobler Metallbau supplied the facades for two out of the four towers. Roto Aluvision assisted facade specialist Dobler by developing a special Turn-Only hinge side. The team of advisors at the Roto Object Business provided the company with advice and support. This hinge side will be presented to the general public for the first time at BAU 2023 – in hall C4, stand 303.

Installation of the double-element facade on building “T4” of the “FOUR Frankfurt” ensemble commenced back in mid-March 2022. Work began on “T1” in mid-June 2022, with 5000 Turn-Only sashes being integrated into its facade. The ceiling-height sashes are 2900 mm tall and between 838 and 1202 mm wide, making them either narrow or extremely narrow. Around 1800 Turn-Only sashes were installed in “T4”.

Project-specific solution from Roto

The architect wanted the window frame and sash frame of the Turn-Only elements on the inside to be flush. Roto Aluvision developed a fully concealed Turn-Only hinge side that meets specific requirements to match the chosen profile system from Schüco. For instance, there is the option to install an opening restrictor which limits the opening of the Turn-Only window to 40°. It ensures that a Turn-Only sash which has to be installed behind a load-bearing concrete support does not damage it when opened. At the same time, it should be possible to fully remove all sashes – including those with an opening restrictor for repairs.

With this in mind, Roto Aluvision designed the Turn-Only hinge side so that, after undoing the safety screws on the bottom pivot rest and top Turn-Only hinge, their bolts can be removed in an upwards and downwards direction, respectively. This means that even hard-to-reach sashes can be removed quickly. Dobler Metallbau also stipulated that the hinges had to be height adjustable by ± 1 mm for on-site installation. The design meets this requirement too.

Each bottom corner hinge was combined with two central hinges. This configuration ensures tight sealing and optimal load transfer of the 200 kg sash weight, even with a sash height of 2900 mm.

Testing in the Roto ITC

The window sashes, developed together with the team from Schüco Engineering, were put through their paces in the Roto International Technology Centre (ITC) in Leinfelden-Echterdingen. As an accredited test centre, the Roto ITC is not only able to conduct a durability test over 20,000 cycles, it can also certify that the test has been completed successfully.

All of the hardware components from Roto Aluvision which Dobler Metallbau prepares for the “FOUR Frankfurt” project meet the requirements of corrosion protection class 5. This means

that they offer ultimate protection against damage to functionally relevant surfaces, e.g. caused by pollutants in the outside air.

Close collaboration between industry and facade construction

Project developer Groß & Partner and the architects in charge emphasised the importance of close collaboration between Schüco Engineering and the Roto Object Business when assisting with the construction work, as well as a reliable after-sales service. "Given the extremely innovative facade design, this is completely understandable," explains Jordi Nadal, Roto Aluvision Managing Director. Projects of this kind should always be supported by industry in close collaboration with the specialist companies performing the work, like Dobler Metallbau. "This is precisely why the Roto Object Business was established some years ago – to provide support so that exceptional architecture can successfully be brought to life."

Dipl.-Ing. Gerald Spiegel, project manager for "FOUR Frankfurt" at Dobler Metallbau, confirms: "When industry partners like Roto and Schüco are on board and contribute their expertise, it means added security and quality for us and the builder."

Roto Object Business: partner for planning and production

The advisors from the Roto Object Business help facade and window manufacturers, architects and investors with planning and designing innovative new building elements by configuring bespoke hardware solutions. Within a short time frame, they make reliable statements about the technical feasibility of the planned window elements and demonstrate various hardware designs for differing demands.

The hardware solution is visualised by a prototype. This makes it easier to discuss possible optimisations for the product that will go into series production and speeds up the planning process.

The scope of services also includes training the window manufacturer's staff during the initial production stages. The flow of material and goods in production is also adapted to the specific requirements of a project. A customised logistics concept ensures short delivery times and on-time delivery.

These services are supplemented by the creation of project-specific documentation and an expert after-sales and spare parts service after the project is complete. Window manufacturers, facility management and builders are provided with a reference work to assist them with all hardware-related information about the project.

All-encompassing service for global aluminium construction

Since the Roto Object Business was set up in 2014, the specialists from this team have been providing their services for projects on all continents. Nadal sums up the feedback received from customers and partners: "Nowadays, it is therefore beyond dispute that Roto can be considered a highly respected and valued partner of many aluminium facade specialists around the globe. At BAU in Munich, we will be offering attendees a platform for exchanging ideas related to projects and specialist technical issues and showcasing two additional custom solutions, in addition to those for 'FOUR Frankfurt'." In a consultation centre specially set up away from the stand, customers and prospects will have the opportunity twice a day to learn more about other hardware solutions for aluminium window construction and find out the details of the services provided by the Roto Object Business.



The building ensemble "FOUR Frankfurt" based on plans by Ben van Berkel is currently under construction in the centre of Frankfurt. The four futuristic towers rise up to a lofty 233 metres.

Image: Groß & Partner, Frankfurt **FOUR_Frankfurt.jpg**



Roto Aluvision developed a fully concealed Turn-Only hinge side with added value to match the profile system from Schüco: it allows an opening restrictor to be installed and makes it possible to fully remove even hard-to-reach sashes for repairs.

Image: Roto Frank Fenster- und Türtechnologie GmbH
Turn_Only_hinge_side.jpg



The Roto Object Business uses prototypes to visualise bespoke hardware solutions for aluminium window and facade elements. They make it easier to discuss possible optimisations for the product that will go into series production and speed up the planning process.

Image: Roto Frank Fenster- und Türtechnologie GmbH

Roto_Prototyp.jpg



In the Roto ITC, the company's own, certified test centre in Leinfelden known as the "International Technology Centre", window and hardware tests are performed for individual project solutions in compliance with national and international standards.

Image: Roto Frank Fenster- und Türtechnologie GmbH

Roto_ITC.jpg



Jordi Nadal, Roto Aluvision Managing Director

Image: Roto Frank Fenster- und Türtechnologie GmbH

Jordi_Nadal.jpg

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