**Dismantling the “Deutsche Welle”**

**From top to bottom instead of high into the sky**

Deploying Doka’s automatic climbing system Xclimb 60 and enclosure to demolish the Deutsche Welle building

**One of Cologne’s landmarks will be gone by 2021: originally, the towers of the former “Deutsche Welle” studio were to be blasted into the ground. However, for various reasons, the plan was changed: the 138 m high towers would be dismantled from top to bottom. Work began in mid-May 2019. In order to ensure that the dismantling could progress in an orderly, and – most importantly – safe way, the contractor called on Doka’s expertise. The Doka specialists planned and assembled the protective screen enclosure and trained the team from BST Becker Sanierungstechnik GmbH to use the automatic climbing technology.**

As urban centres become increasingly built up, old buildings must be demolished. Former landmarks are torn down to create for new, modern replacements. Demolition nowadays is typically no longer the traditional wrecking ball or controlled blasts; instead, buildings are dismantled in a carefully planned process, in which individual construction materials are separated and adjacent buildings protected. The area around the site and the teams on site are protected from noise, dust, falling debris and vibrations. It was exactly these reasons that guided the decision to dismantle Cologne’s “Deutsche Welle” building in such a careful, controlled procedure.

**Dismantling not blasting**

“Deutsche Welle” radio editors worked in the high-rise building for 23 years. However, the building had been out of use since 2003, and in 2013 it was decided to tear it down. Initially, the plan was to use controlled blasting to demolish the 138 m high tower of the former “Deutsche Welle” studios. However, high levels of asbestos and concern for the nearby residents led to a change of plan: the building elements would be dismantled step by step.In light of the height of the building (the higher the building, the more challenges for solutions and techniques), BST Becker Sanierungstechnik GmbH, commissioned with the building demolition, decided on an unusual approach: they would engage Doka as their partner for the scheme. The formwork experts are generally called in during construction of concrete buildings, not for tearing them down. However, it turns out that the Doka system comprising the automatic climbing formwork Xclimb 60 combined with the Protection screen Xclimb 60 is actually perfect for dismantling buildings as well as for meeting the challenges of modern high-rise building construction.

The Protection screen Xclimb 60 enclosed the entire demolition area, sheltering the BST Becker Sanierungstechnik team completely from wind and weather. Rubber lips cut to fit perfectly between the protection screens and buildings created an integrated seal to prevent small parts, debris and dust from falling down. The system also effected a huge reduction in noise emissions.

**Doka – expertise and solutions**

Once BST Becker Sanierungstechnik had its first automatic climbing framework in place, complete with protective screen enclosure, Doka was able to offer its services beyond formwork. Doka’s project engineer, Philip Haug, explains: *“We offer an all-round solution through our Ready-to-use service and pre-assembly teams. Thanks to our instructors and specialists from the project management and technical office, our services include advice and support, and ensure that even customers with no experience in automatic climbing technology can use our systems successfully.”*

The platform and enclosure elements – 2,800 m² of screen in total – were pre-assembled from detailed plans into large transportable units by Doka’s Ready-to-use service teams. On-site, Doka’s pre-assembly team handled the final assembly and suspended the system on the building, thus speeding up the dismantling process. Despite several weeks of very high temperatures, the assembly was completed in under six weeks with no complications. Also present on site were the Doka instructors, who trained the construction site team for the automatic climbing system Operation Licence. This is required for operating an automatic climbing system.

In addition to the practical formwork engineering, the Doka formwork engineers provided a further valuable aid during the preliminary period: they planned every climb stage upwards and downwards, accounting for the different heights of the storeys and excess height on the intermediate floors. The Doka team also worked closely with the customer to develop project-specific custom suspension points where the protection screens would be affixed to the building. Typically, suspension points for a protection screen would be built in during concrete as part of the usual high-rise building process. This project, however, presented more of a challenge, since the suspension points had to be added to an existing building.

*“As a demolition firm, we had virtually never come across a need for formwork before,”* explains Michael Wagner, foreman for BST Becker Sanierungstechnik. *“However, the Doka team were there to answer all our questions about the processes and gave us support in every way. We can recommend them unreservedly”.*

**Protection screen Xclimb 60 at work: 394 m of climbing**

In order to make use of the protection screen straight away, during the upward climbing phase, work began in May 2019 to remove the façade with its colourful aluminium plates and asbestos-filled insulation. The BST Becker team used work platforms located directly behind the protection screen to access the cladding for the external columns and window elements. In autumn 2019, it was time for a change of direction; as the system climbed back down again, the steel structures and reinforced concrete floors and ceilings were removed. Two cranes lowered the wall and ceiling elements down to the ground, where they were broken up, processed and used to fill in the basement levels. *“In total for the two towers, the protection screens covered a distance of 394 m”,* says Philip Haug. *“That’s approximately the height of the Empire State Building”.*

The enclosure, façades and buildings worked their way downwards step by step until reaching the ground in August 2020. The demolition is scheduled for completion in 2021, creating space for a new residential complex with 700 apartments and inner courtyard gardens. Cologne’s former media landmark will be finally laid to rest in the history books.

**In brief:**

Project: Removing the “Deutsche Welle”

Location: Cologne, Germany

Client: DWK Die Welle Köln Erste GmbH & Co. KG

Contractor: BST Becker Sanierungstechnik GmbH

Formwork used: 04/2019 – 08/2020

In use: Systems used: Protection screen Xclimb 60, Automatic climbing formwork Xclimb 60, Top 50 large-area formwork

Services: Engineering, Doka instructors, formwork pre-assembly, Ready-to-use service, structural engineering, logistics

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| **Photos:**  Please list photo credits when publishing. | |
|  | Both the office tower (left) and the studio tower were fully enclosed with the Protection screens Xclimb 60 for dismantling. This ensured the safety of the team at every height and prevented debris, small parts and dust from falling down.  Photo: Deutsche Welle\_01.jpg  Copyright: Doka |
| Q:\Doka\Company\External Communication - Image\Press Releases (tbd)\In progress_2020\2020_9 Deutsche Welle (Germany)\Images\Word\Deutsche Welle_02.jpg | Doka specialists were responsible for professional pre-assembly of the platform and enclosure elements.  Photo: Deutsche Welle\_02.jpg  Copyright: Doka |
| Q:\Doka\Company\External Communication - Image\Press Releases (tbd)\In progress_2020\2020_9 Deutsche Welle (Germany)\Images\Word\Deutsche Welle_03.jpg | Doka engineers worked closely with the customer to develop project-specific custom suspension points where the protection screens would be affixed to the building.  Photo: Deutsche Welle\_03.jpg  Copyright: Doka |
|  | Seventeen 6 x 10 m screens were used for the 116 m high office tower. A protection screen of this size weighs up to 5.4 tonnes.  Photo: Deutsche Welle\_04.jpg  Copyright: Doka |
| Q:\Doka\Company\External Communication - Image\Press Releases (tbd)\In progress_2020\2020_9 Deutsche Welle (Germany)\Images\Word\Deutsche Welle_05.jpg | As the protection screen climbs downwards, the storeys are removed step by step.  Photo: Deutsche Welle\_05.jpg  Copyright: Doka |

**About Doka:**

Doka is a global leader in formwork solutions; it develops, manufactures and distributes innovative products for use in all areas of the construction industry. It has a highly effective sales network of 160+ distribution and logistics sites in over 70 countries, guaranteeing rapid, professional provision of both equipment and technical support. Doka is an Umdasch Group company and has 7,400 employees worldwide.

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