

KEMROC technology in residential construction

DEMOLITION PROJECT IN THE CITY

Fully on schedule, Project “Martinshöfe” in Weingarten

CK Abbruch und Erdbau confirmed their competence in low noise and low vibration demolition at a current project in Weingarten in southern Germany. In the city centre, the foundations of a former industrial complex had to be demolished. Using KEMROC drum cutter and cutter wheel attachments mounted on hydraulic excavators, the heavy concrete segments are demolished economically and in a way that is friendly for the environment and for neighbouring residents.

Right in the heart of Weingarten in the southeast of Baden-Württemberg, a new city quarter called “Martinshöfe” is being built. On a site of almost four hectares located below the basilica, residential buildings with around 500 condominiums and rental apartments, green and open spaces as well as a commercial area with restaurants and retail outlets are to be built. Before this building project could proceed, a former industrial complex had to be completely demolished followed by site preparation work.

The contract for this work was won by the Swabian company CK Abbruch und Erdbau GmbH. This is a prestigious project where the company can show its competence in both demolition and civil engineering. In addition to the removal of around 40,000 m³ of concrete and reinforced concrete, CK Abbruch is also excavating the foundations for the future residential and commercial buildings. This amounts to the removal of an additional 120,000 m³ of excavated earth.

Since July 2022, after the team reporting the CEO Markus Christadler had demolished the buildings visible above ground level, experts have been working on the removal of the huge underground foundations. A significant feature of this demolition project are the foundations of the production facilities of an old forging company whose design corresponded to the very tough nature of the work being carried out. According to the demolition contractor, the size of some individual elements reached 1,500 m³. Due to the inner-city location, a condition when awarding the contract was that the work had to be carried with the lowest noise and vibration levels possible.

Gentle milling and cutting

In view of these challenges, Markus Christadler, whose company already has extensive experience from numerous inner-city demolition projects, decided to use a combined



A 45 and a 60 tonne excavator with attachments from KEMROC play a major role at a CK Abbruch und Erdbau project in Weingarten.



Massive concrete structures have to be demolished before a new multi-purpose quarter “Martinshöfe” can be built on a site below the basilica.

demolition and dismantling process. The machinery at the core of the process to be used at Weingarten consisted of two hydraulic excavators equipped with KEMROC attachments, a 45-tonne machine with a DMW 220 cutter wheel and a KR 150 drum cutter, as well as a 60-tonne machine with a DMW 220 HD cutter wheel and a KR 165 drum cutter, all from CK Abbruch und Erdbau's own machine park.

"Another challenge," says Markus Christadler, "is the sustainable and economical handling of large quantities of construction waste in a confined space. At peak times, we have five excavators with operating weights of up to 80 t operating on this construction site, as well as a mobile crushing plant and a mobile screen for high-quality processing of the resulting concrete residue. But the drum cutters and cutter wheels, our excavator attachments, play a decisive role in achieving low-emission, environmentally friendly and economical demolition."

The DMW range of cutter wheels from KEMROC achieve high performance in hard rock and reinforced concrete. At the CK Abbruch construction site in Weingarten, the cutter wheels are used to economically cut down large-volume structures into smaller individual pieces. These are then broken down into a size suitable for crushing using concrete cutters and shears. "We can thus largely rule out the use of loud, high vibration equipment such as breakers in the steps prior to crushing," explains Markus Christadler. The narrow tool profiles of the cutter wheels also help to minimise the production of worthless fine-grained material as well as keeping fuel consumption and tool wear low.

The KR range of drum cutters from KEMROC are robustly built and ideal attachments for tunnelling applications as well as for low-vibration and low-noise demolition of reinforced concrete. In demolition projects such as in Weingarten, they provide extra options that complement the KEMROC cutter wheels perfectly. Markus Christadler, "We use the drum cutter attachments where, for certain reasons, we cannot use the cutter wheels. At many places, foundations on our site meet or cross the boundary with public and private land. At these points, we are not allowed to cross our boundary into existing structures, so we use drum cutters because, unlike the cutter wheels, for technical reasons we can work without crossing the boundary."

Calculable parameters

At the end of November 2022, around 80 percent of the demolition work by CK Abbruch und Erdbau at the "Martinshöfe" project in Weingarten had been completed. CEO Christadler was confident that this part of the project would be completed by the end of March 2023 and that the earthworks that had begun in parallel would continue. His interim conclusion: "We are within the project deadlines and, due to the equipment used, have completed some parts earlier than planned." In some places, the concrete foundations of the old forging company contained a large number of heavy steel components. They could not be



KEMROC cutter wheels with powerful motors and narrow cutter wheels play a central role in environmentally friendly demolition.



Drum cutter attachments used near buildings on the boundary. Unlike cutter wheels, they can work right up to the boundary.

ground or cut out but had to be chiselled out or burned through and removed individually. “However, the predominant use of KEMROC attachments,” he adds, “fulfilled the conditions for awarding the contract which stipulated minimal noise and vibration emissions and this was controlled on site.” Consumable costs to date are also in line with what he has experienced in the past: “Overall, with this equipment, we can calculate our costs accurately, we can complete the work in an environmentally friendly manner, on time and within budget.” ■



Drum cutter attachments are precise, low-noise and low-vibration. This meets the requirements of a low-emission approach.

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