TAILOR MADE DEMOLITION EQUIPMENT FOR

extra delicate projects

MB Spezialabbruch GmbH & Co. KG (MBS) is an extremely specialised demolition business, situated in the tiny municipality of Breitungen, Germany. So specialised that that they invent and build their own demolition machines and tools to manage the jobs.

This family run demolition and recycling company is known for the clean and safe demolition and dismantling off, for example, industrial power plants, cooling and exhaust air systems. To perform this, MBS also develops and builds its own demolition machines and tools for many demolition project.

A good example of this is the remote controlled demolition robot, RDB 100. This machine has been entirely developed and built in-house using the chassis of a CAT 308 D excavator as the base machine. And with standard components on the market, for example from Brokk.

RDB 100 has a dimension of 5 x 1,5m without the platform extending and outriggers. The wheel base is 3,3m, machine weight 10t and the working area is 3x3m with the shear, a Konverma HCM 600-M with an operating weight of 1t.

The remote controlled robot has been used in the first demolition phase, or dismantling section, to remove the cooling tower from the original 162m to a height of approximately 80m at the Mülheim-Kärlich nuclear power plant.

This the first phase of the the demolition process, the selective dismantling of the cooling tower's upper part lasted around 6 months. In total, some 3.790 m³ of material was dismantled during this period.

Fort the first time, MBS used the MAMA method, an in-house developed deconstruction method for natural draft cooling towers. The acronym MAMA stands for Maschinelles, Automatisiertes, Mannloses, Abbruch, (German for: machine, automated, unmanned, demolition process).

From left: Andreas Kaschadt, Anne, Peter and Birgit Mittelsdorf who run the MBS family business.

This new MAMA method had to be applied at the Mülheim-Kärlich plant due to the immediate proximity to parts of the plant, which are under nuclear supervision. And the immediate proximity to high-frequency railway tracks, there was also an increased need for safety.

"For this very special challenge we used 14 months to develop the RDB 100 robot from scratch, starting with a handmade design," says Andreas Kashadt, technical manager at MBS.

"With the CAT 308 as the base machine, we developed and assembled all hydraulics, electronics, powertrain, electrics here in our own factory. We also have a long time partner company that make all the steel work for us."

Other partners have been engaged to develop and design, for example, the radio remote control, TOPCON GPS system for altitude monitoring and camera system.

When the demolition robot was tested and ready, it was also a big challenge to lift it more than 160m up to the top of the cooling tower. For this purpose, an extensive height access technology was first mounted on the outer shell of the cooling tower to ensure safe access for the operating personnel.

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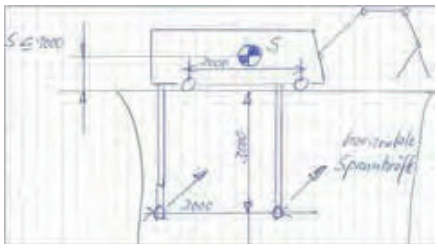

The first hand made scetch of the RDB 100 robot.

It took about 14 hours to lift the robot and equipment the 162m to the top of the 162m chimney.

Subsequently, the special demolition equipment was positioned on the edge member of the cooling tower with a specially developed lifting structure. "It took us about 14 hours to lift the robot and equipment the 162m to the top," tells Andreas Kashadt. During some 25 years MBS has developed various special machines and also tools, sawing and lifting techniques for demolition. "This is due to the fact that standard machines often can not be used in our special demolition of very complex industrial building," says Peter Mittledorf, owner and manager of MBS.

"Therefore, in-house development of special demolition machines has become a part of our company tradition.

The first machine invention many years ago was the "spinnenbagger" which was a spider like demolition robot also used to demolish industrial chimneys. This first machine formed the basis for the next invention of the drivebreaker, that is currently used for dismantling of the 225m high reinforced concrete chimney of the CHP nuclear plant in Jena.

Further to the special demolition, MBS is also active in recycling, earthmoving, site logistics and more, which means that they also handle all recycling on the demolition sites. Together with the family, Peter, Birgit and Anne Mitteldorf, the company has today 42 employee of highly qualified workers, mechanics, design and mechanical engineers.

And further to the German home market, MBS has so far also been involved in large special demolition projects in all of Europe, Russia and Dubai.