

**Job report**

**R 984 C HD** Litronic®  
**R 954 B V-HDW** Litronic®

**Liebherr Excavators at the demolition of industrial building of the Westfalenhütte.**



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## Situation

Large portions of the area of the Westfalenhütte in Dortmund, Germany, are no longer valuable for industrial use. The industrial structures and buildings are consequently to be removed or demolished, respectively, in order to prepare the area for later utilization.

In 1896, the Westfalenhütte put the first blast furnace in service, in 1956 a 150 t and a 180 t Siemens-Martin furnace followed as well as more furnaces in 1961 and 1962. Steel production in Siemens-Martin furnaces, a technology that existed since 1864, was more and more replaced by other, more advanced methods. The Siemens-Martin furnaces, which were de-commissioned by the Westfalenhütte in 1982, have been the last working installation in Western Europe.



## Assignment Report

The four-bay converter building with 235 m length, 120 m width and 40 m height, which housed the Siemens-Martin furnaces, is scheduled to be demolished. The building was erected as a steel-swing support structure, a special design style to absorb and transmit the enormous forces created by the operation of the charging cranes. For the erection of the building, steel girders with 20 cm thickness were used – a true challenge in the demolition project.



## Solution

The company "Thyssen-VEAG Flächenrecycling GmbH" (TVF), located in Bottrop, was awarded with the contract. The main responsibilities of TVF – Altwert, a subsidiary of "ThyssenKrupp Industrieservice GmbH" and "Vattenfall Europe AG" with 240 employees, are in the areas of disassembly, demolition, ground rehabilitation, asbestos decontamination, recycling and clean-up of trash as well as exploration, assessment and disposal of residual contamination with the objective to create free real estate for new development. The TVF operates a fleet of 15 different Liebherr machines. The latest addition is an R 984 C HD Litronic equipped with a scrap shear VTC 70 with an operating weight of 10.2 t with an extended reach. The machine was acquired after extensive consultations from the Liebherr dealer WBI in Langenfeld.

The project started in February 2003 with the asbestos decontamination of the lower girders of the crane track and in March 2003 with the actual demolition work. The roof beams from the side- and center bays were manually separated with blowtorches and dropped to the ground for further cutting.

A Liebherr hydraulic excavator R 954 B V-HDW Litronic works at the demolition of the side bays. The machine has an operating weight of 68 t and is powered by a Liebherr diesel engine with a rating of 222 kW/302 HP. The long-front demolition attachment reaches a height of 27 m and is fitted with a Liebherr hydraulic quick coupler. The attachment consists of an 8.5 m demolition boom, a 2.0 m extension, a 2.5 m intermediate boom and an 8.5 m demolition stick. The working tool is a 2.3 t scrap shear. The special demolition operator station features sturdy FOPS protection.



As a key machine, the "Thyssen-VEAG Flächenrecycling GmbH" utilizes an R 984 C HD Litronic. The machine with an operating weight of 120 t is powered by a 6-cylinder inline diesel engine with a power rating of 504 kW/685 HP. The attachment consists of a 9.20 m gooseneck boom and a 4.50 m stick. The Liebherr hydraulic quick coupler provides a simple and time saving change of the working tools. The attachment includes a 5.20 m<sup>3</sup> bucket, a 10.2 t VTC shear and a 2.8 t ripper tooth. The hydraulic excavator reaches with both tools a working height of 15 m.

The job of the R 984 C HD Litronic at this assignment is primarily to cut-up the structural items into chargeable pieces. The prepared steel pieces are loaded in freight cars and delivered to the steel mill Duisburg for further processing. During the demolition, approx. 11,000 t of scrap are processed.

The demolished brick rubble is recycled on site as fill material. The remainder is hauled to other locations for further use. The roofing material with a volume of approx. 3,000 t is disposed under ecological and economical considerations.

The aboveground demolition will be finalized by the end of August. After completion of all work, the site will be handed over to city of Dortmund.

## Technical data

### R 954 B V-HDW Litronic

Operating weight \_\_\_\_\_ approx. 68 t with demolition attachment  
 Engine \_\_\_\_\_ Liebherr diesel engine D 926 TI-E  
 Rating accord. ISO 9249 \_\_\_\_\_ 222 kW/302 HP @ 2000rpm

### R 984 C HD Litronic

Operating weight \_\_\_\_\_ approx. 120 t  
 Engine \_\_\_\_\_ Cummins QSK-19 C 750  
 Rating accord. ISO 9249 \_\_\_\_\_ 523 kW/710 HP @ 2100 rpm

## Attachments

### R 954 B V-HDW Litronic

Demolition boom extension \_\_\_\_\_ 2.0 m  
 Demolition boom \_\_\_\_\_ 8.5 m  
 Intermediate boom \_\_\_\_\_ 2.5 m  
 Demolition stick \_\_\_\_\_ 8.5 m  
 Shear \_\_\_\_\_ VTC 40

### R 984 C HD Litronic

Gooseneck boom \_\_\_\_\_ 9.2 m  
 Stick \_\_\_\_\_ 4.5 m  
 Shear \_\_\_\_\_ VTC 70 Ripper tooth