



Press Release

HERRENKNECHT

Large-scale projects in small diameters win GSTT Award 2015.

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Two projects in which microtunnelling machines from Herrenknecht are driving new sewers have been awarded the "GSTT Award 2015" by the German Society for Trenchless Technology e.V. (GSTT). The special award "International Project" was given to the National Water Company of Saudi Arabia. At their unusual construction site in Mecca two Herrenknecht EPB shields with an individual remote monitoring system are in use. The Emscher genossenschaft received the GSTT Award "Gold" for a construction of a section between Dortmund and Bottrop as a part of the Emscher renaturation. Since 2013 several Herrenknecht utility machines have been driving a new sewer system there.

_____As the owner of the "Makkah Haram Sewer Line" project the National Water Company of Saudi Arabia was honored with the **GSTT Award in the special category "International Project"**. Directly under Mecca, the most important place of pilgrimage for Muslims, two Herrenknecht EPB Shields (Ø 3,510 mm) are driving much needed sewers with segmental lining. Tight curve radii of 80 meters are being driven over distances of 1.5 and 1.8 kilometers. For the particularly secure removal of sewage through holy groundwater, concrete segments with two sealing profiles and an HDPE inliner provide additional protection.

Herrenknecht produced the tunnel boring machines for this project and put together a tailor-made service package: Because only Muslims are allowed to enter the city of Mecca, together with the construction company Saudi Binladin Group Saudi Arabia a special remote monitoring system customized for the project was developed.

Machine operators from Herrenknecht can support the advance around the clock. Therefore the tunnel boring machine's control cabin was duplicated and its data transmitted from the jobsite in Mecca directly to the offices in Schwanau. In addition, prior to tunnelling, at the Herrenknecht plant in Schwanau the customer's site crew were trained on the machines set up in the curve radius. "We have to work under

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time pressure in tight curve radii under Mecca's busiest ring road and through holy groundwater. For this unique challenge we needed a unique solution. Herrenknecht gave us a complete package - including 24/7 support" says Eng. Ibrahim Balaban, General Manager of the Tunnelling Division in the Saudi Binladin Group Saudi Arabia.

The **GSTT Award in "Gold"** was awarded to the Emscher genossenschaft Water Management Society. As the project owner of the Emscher renaturation it was honored for the planning and construction of the 35 kilometer long section BA 30 between Dortmund and Bottrop. The construction company Wayss & Freytag Ingenieurbau AG is driving more than 25 kilometers of the sewer sections with an EPB Shield and five AVN machines from Herrenknecht. At this large-scale project, the renaturation of the Emscher, a variety of tunnelling machines from Herrenknecht have been in use for about 20 years. At the construction sections 20 and 40, the construction company PORR GmbH is excavating about 23 kilometers of sewage tunnels with three EPB shields.

Ulrich Schaffhauser, Deputy Member of the Board of Management and Director Utility Tunnelling at Herrenknecht, congratulated the winners. "We congratulate our customers on the honoring of their unique construction projects with this year's GSTT Award. We are delighted to provide Herrenknecht know-how to support these important trenchless microtunnelling projects that make a contribution to improving the quality of life and conserving natural resources."

The German Society for Trenchless Technology e.V. (GSTT) confers winner awards in "Gold", "Silver" and Bronze for current trenchless construction projects. An extraordinary and spectacular international project receives a special "International" award. The award ceremony took place on March 24, 2015 at the official opening ceremony of the exhibition "Wasser Berlin International" (International Trade Fair and Congress for Water and Wastewater) in Berlin.

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Photos

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Picture 1

Award for the "Makkah Haram Sewer Line" project on March 24 in Berlin (left to right): The GSTT e.V. Chairman Prof. Jens Hölterhoff presents the GSTT special award "International Project" to Eng. Abdullah Ahmed Hasanin, (MTCBU Director of the National Water Company NWV) and Eng. Ibrahim Balaban (General Manager of the Tunnelling Division in the Saudi Binladin Group Saudi Arabia) and Peter Schmäh (Member of the Traffic Tunnelling Executive Board at Herrenknecht).



Picture 2

Two EPB machines (Ø 3,510 mm) are driving 1.5 and 1.8 kilometer long sewers in tight curve radii of 80 meters under the city of Mecca. Before construction began on the "Makkah Haram Sewer Line" project in Saudi Arabia, at the Herrenknecht plant in Schwanaue the customer's site crew were trained on the machines already set up in the curve radius.



Picture 3

For the "Makkah Haram Sewer Line" project Herrenknecht supplied two tunnel boring machines (EPB machines Ø 3,510 mm) and a unique service package: the tunnel boring machine's entire control cabin was duplicated and its data transmitted from the jobsite in Mecca directly to the offices in Schwanaue. This means machine operators from Herrenknecht can support the advance around the clock.

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Picture 4

The Herrenknecht AVN machine M-1728 being lifted into a launch shaft. The construction phase between Dortmund und Bottrop is a section of the large-scale Emscher renaturation project and was honored with the GSTT Award in "Gold". The construction company Wayss & Freytag Ingenieurbau AG is driving more than 25 kilometers of sewers there with an EPB Shield and five AVN machines from Herrenknecht.

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Herrenknecht AG

Herrenknecht is the only company worldwide to deliver tunnel boring machines for all geologies and in all diameters – ranging from 0.10 to 19 meters. The product range comprises tailor-made machines for traffic, supply and disposal tunnels as well as additional equipment and service packages. Herrenknecht also manufactures drilling rigs for vertical and inclined shafts as well as deep drilling rigs. In 2013 the Herrenknecht Group achieved total revenue of 1.051 billion euros. The Herrenknecht Group employs around 5,100 people worldwide, including over 200 trainees (as of December 2014). With 82 domestic and overseas subsidiaries and associated companies working in related fields, Herrenknecht provides comprehensive services close to each project and customer.

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