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Meissner Krane and STAHL CraneSystems provide support Building the new Metro in Amsterdam

One of the Netherlands' largest projects at present is building the new North-South underground railway line through the centre of Amsterdam. The new line is to connect the new residential areas in the north of the city with the city centre and the new commercial centre in the south of Amsterdam. When it is completed, currently planned for 2017, the new line is likely to be the most used transport link in the Netherlands and be used by around 200,000 passengers a day. The German crane expert Meissner Krane from Bad Blankenburg and STAHL CraneSystems are supporting the project with specialised crane technology.

Amsterdam's city centre is densely populated. Cars en masse push their way through the narrow streets every day and cyclists abound. The new Metro therefore has to be routed underground in the whole south section of the line. Apart from the challenging geology - the water table is at ground level - and protecting the numerous historic buildings, one of the greatest challenges for this project is avoiding adverse effects for the city's inhabitants.

When building the new underground stations large volumes of excavated earth are incurred which are removed above ground by lorries. To permit this in the narrow streets of the old city without closing roads and causing traffic chaos, off-standard portal cranes from crane builder Meissner Krane from Bad Blankenburg in Thüringen are used on three construction sites. These cranes load the containers full of excavated earth onto lorries above ground, however they are also used for taking in work machinery and the completion of the underground railway stations. A portal width of 8 metres enables safe loading and unloading operations in spite of concurrent car traffic and the continuing operation of the existing tram line. The track gauge of the cranes can be extended to 10 metres, so that after individual construction sections are completed they can be used on

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other building sites. Their maximum S.W.L. of 25 t is distributed over two STAHL CraneSystems hoists. Due to the maximum lifting height of 42 metres, a high lifting speed and high classification was necessary in order to be able to meet the schedule for the excavation work specified by the City of Amsterdam. two ASF7 wire rope hoists with frequency inverters are used on each crane, enabling the excavation containers to be loaded quickly and accurately. Thanks to their FEM 3m classification, they are well suited to intensive operational demands. The connection of two hoists permits hoisting speeds of 15 m/min under full load or 21 m/min with an empty container, equivalent to the 15 load cycles per hour calculated by construction company Max Bögl.

As a "Partner of STAHL CraneSystems", Meissner Krane prefers to use hoists and crane components from the South German technology specialist. In addition to the frequency-controlled ASF7 hoists, the wheel blocks for the crabs and the crane drives were supplied by STAHL CraneSystems. The first two cranes were supplied in 2007, in the following years Max Bögl ordered another two cranes each for two other underground stations, so that a total of six portal cranes of this type are in use.

Below ground two Max Bögl is putting its trust in German crane technology: thanks to their low headroom, around 30 SH50 wire rope hoists are in use, equipped with off-standard rope drums to increase the lifting height.

For construction company Max Bögl the purchase of the cranes has been worth double. In Amsterdam they provided reliable support for work on the underground railway. After completion of the project, the company can use the flexible cranes for other projects, e.g on ICE lines, building dams or pump storage stations.

Photo material



The yellow portals are a prominent feature of the face of the city: six of these practical helpers are in use in Amsterdam at present.

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Roofs protect the hoists from rain and dirt.

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The frequency-controlled ASF7 wire rope hoists load the containers onto lorries quickly and precisely.