Reconstruction of Nørreport Station

Project New Nørreport



In the autumn of 2011, Aarsleff entered into a contract with Rail Net Denmark for the reconstruction of Denmark's busiest railway station, Nørreport, in Copenhagen. The New Nørreport Project covered three projects for which we carried out construction work above and below ground level. The concrete structures in the tunnel pipes were renovated, the air quality was improved by means of new ventilation systems, the forecourt and the station buildings were modernised, and we installed fire protection systems. On street level, we relocated the cycle lane between the streets of Nørregade and Gothersgade to make room for the construction work on the 100-year-old concrete tunnel at Nørreport. Then, we installed sheet piles for the tunnel structure. The sheet piling work was divided in two phases and once we had installed the sheet piles, we excavated down to the tunnel deck and carried out drainage at both sides of the tunnel.

Train service maintained

Once we had carried out the excavation work for the tunnel deck, we started the renovation work. We removed the concrete and placed a new layer of profiled concrete and membrane on top of the old structure. We divided this work in phases to maintain the train service and to ensure that the passengers still had access to the station during the construction period. The renovation took place on the platform areas with very poor access conditions. So most of our work could only be carried out from lifts on railway wagons, and we could only work in the period from 8 in the evening to five in the morning to keep disturbance to traffic flow at a minimum.

Focus on safety

The safety aspect was very important to us, so we focused highly on safety issues during the entire reconstruction process. We carefully instructed our employees before commencing any work activities involved in the contract. Work carried out on railways still in operation is considered high risk work, so we made use of our extensive experience gained from previous projects.

Busiest traffic junction

The area at Nørreport Station is one of Denmark's busiest traffic junctions. So the client, City of Copenhagen and DSB (Danish State Railway), had planned the large-scale construction work in one continuous process to prevent repeated disturbance of the area. The station has been renovated several times before. However, this time the station has undergone an extensive renovation. Work commenced in 2011 and was scheduled for completion at the end of 2014.





Data

- 27,000 m³ of earthwork
- 265 tons of secondary reinforcement
- 3,300 m of prestressed reinforcement
- 2,800 m³ of concrete
- 12,500 m² of waterproof membranes
- 10,500 m² of bridge decking in granite and steel
- 385 m of bridge crash barrier

- 1,900 m of drainage pipes
- 820 m of retaining wall, king post wall
- 350 m of district heating trench.

Client Rail Net Denmark, DSB and City of Copenhagen

Type of contract Main contract **Contractor** Aarsleff-Rail Nørreport

Consultant Grontmij A/S

Construction period September 2011 to November 2014

Contract value DKK 400 million

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