

The Netherlands

Name: Department of tunnelling and underground works (TTOW) of the Royal Institute of Engineers KIVI

Type of Structure: Non profit

Number of Members: 529



ASSOCIATION ACTIVITIES DURING 2021 AND TO DATE

Due to Covid, limited activities were organised in 2021. The evening to celebrate the 50th year anniversary was postponed to 2022. What we did organise were:

- An on-line event on asset management in tunnelling
- The YM-department organised a site visit to the A16 tunnelling project
- The YM organised drinks and three lectures by Young Professionals on their experience in the tunnelling industry
- An annual meeting "ITA-avond", was organised as an on-line event

CURRENT TUNNELLING ACTIVITIES

Rijnlandroute (TBM)

In the Rijnlandroute project, a connection between the A4 with the A44 motorways is being established near Leiden. The twin-tube TBM tunnel is 2.5km in length, with each tunnel tube providing two traffic lanes. Fifteen years of management and maintenance is also included in the contract. The 2nd TBM-drive was finished in 2020. The reception procedure was problematic, which resulted in the deformation of the tunnel lining and problematic demobilization of the TBM. An extra internal lining was installed to stabilize the lining. The cross passages are complete. The tunnel technical installations are underway, and systems testing is progressing. Opening of the tunnel is expected in 2023.

Zuidasdok Amsterdam (in-situ)

In 2020 the client reconsidered the project with it now cut into three independent projects, with the client responsible for the integral design of the total project. Procurement of the three individual projects started in 2021. In 2022 the procurement of the tunnel project will start.

Blankenburg connection: Maasdelta tunnel (immersed tube) & Hollandtunnel (in-situ)

The Blankenburg connection, the new A24 motorway, contains two tunnels: the Maasdelatunnel, an immersed tube tunnel under the Scheur (Nieuwe Waterweg) waterway, and the primary access to the harbour of Rotterdam, and the Hollandtunnel, an in-situ tunnel through a natural habitat. Twenty years of maintenance are incorporated in DBFM project.

The Maasdelatunnel will be about 945m in length and is characterised by its very deep ramps. The Holland tunnel is 510m long and is situated just below the surface. In 2018, construction started on the Maasdelatunnel with the coffer dams, within which the deep ramps are to be constructed. The construction of the deep ramps was delayed in 2021 and will continue throughout 2022. The two tunnel elements are being prepared in the dry dock for float out in April 2022, See picture MDT. Immersion of the two tunnel elements in the waterway is planned for 2023. The foundation works on the Hollandtunnel are almost complete, with concrete works ongoing. The Blankenburg connection is scheduled for completion in 2024.

Design with Vision

Build with Integrity



UNDERGROUND ENGINEERING

McMillen Jacobs Associates brings decades of highly technical expertise in engineering, environmental, and construction services to any transportation, water, wastewater, hydropower, and heavy civil project.

mcmjac.com



PH: Vijay Shankar Jeyakrishnan; Pictured: James Franco, NRC, labor foreman

A16 – Rottemerentunnel (in-situ)

The A16 motorway from Terbregseplein traffic junction will be lengthened and connected to the A13 motorway near Rotterdam The Hague airport. On this connecting road a new tunnel is required - the Rottemeren tunnel. The Rottemeren tunnel is planned to be open in 2024 and will be 2235m in length. There will be two tubes with two lanes per tube and an emergency lane. The project has an energy-neutral design. The project is currently in the construction stage, with the first floor sections of the tunnel (reinforced underwater concrete) poured in May 2021.

The Kiltunnel (1977) refurbishment

In 2020, an E&C alliance contract was chosen to stimulate cooperation between the contractor and client, and flexible when unexpected conditions were found in this old tunnel.

Engineering activities are nearly finished and the tunnel refurbishment is ongoing.

The Heinenoordtunnel (1969) refurbishment

The project was awarded in October 2020 with the final contract close taking place in April 2021. The engineering of the renovation works are ongoing, with actual works to commence in 2023.

The Roer and Swalmentunnel (2009) refurbishment tunnel systems

In 2021 the MDCM-contract to renew several tunnel safety systems of these two tunnels was awarded, with the refurbishment works to commence in 2023. The contract is called; MDCM-contract, Maintain, Design, Construct and Maintain.

The municipality of Amsterdam is preparing a refurbishment scheme for the five tunnels they own (Piet Hein tunnel,

Arena tunnel, Spaarndammertunnel, Michiel de Ruijter tunnel, IJ-tunnel). Amsterdam is aiming to standardise the maintenance and operations procedures for this set of tunnels.

FUTURE TUNNELLING ACTIVITIES

Future renovation projects (renovation mainly tunnel safety systems up to 2023):

- Eerste and Tweede Beneluxtunnel
- Buitenveldertunnel
- Noordtunnel
- Sijtwendetunnel
- Westerscheldetunnel
- Drechttunnel

Future tunnel projects (Renovation - after 2023):

- Botlektunnel
- Hubertustunnel
- Thomassentunnel
- Wijkertunnel
- Zeeburgertunnel