

Project identification

Amsterdam Tunnel Renovation Program

Type of project

Renovation and tunnel upgrade



(photo Municipality of Amsterdam)

Client

Municipality of Amsterdam

In co-operation with

Project assignment

Technical Consultancy to Owner municipality tunnel renovation and upgrade program

Country

The Netherlands

Location

Amsterdam

Project duration

2019-ongoing

Project phase

Design phase

Construction cost

(excl. VAT)

Consultancy fee

**approx. € 14 million (mid '21)
(excl. VAT)**

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Amsterdam Tunnel Renovation Program

Renovation and tunnel upgrade

Early 2019, the municipality of Amsterdam launched a tender for a framework agreement for (technical) consultancy services within the framework of efficient future operation, management and maintenance of the municipality road tunnel system, covered under the Amsterdam Road Tunnels Program.

This program involves the renovation / upgrading of three tunnels and the development of a new traffic control centre. The main Municipality goals of the program were to have full compliance of the tunnels with the current legislation and codes and to create a solid basis in order to enable efficient uniform operation, management and maintenance strategy of the integrated road tunnel system as a strategic asset to the Municipality of Amsterdam.

The current program involves the following items:

- The renovation and upgrading of the Piet Hein tunnel; the tunnel was realized in the nineties under more relaxed tunnel safety requirements and requires an upgrade to meet current tunnel safety legislation. The tunnel is approx. 1.9km long including immersed tunnel of 1280m; the tunnel has two traffic tubes accommodating 2x2 road lanes, a central gallery for evacuation and services and a separate tube with two tracks for light rail.
- Upgrading the tunnel installations and systems in the Amsterdam Arena tunnel; the tunnel was constructed in the mid-nineties as part of the Amsterdam Arena and under passing the Ajax football stadium / parking. The tunnel is approx. 300m long.
- Detailed assessment of the performance of the fire proofing material of the Michiel de Ruijter tunnel; the tunnel was opened in 2015 and part of the main public transport hub around Amsterdam Central Station. Within the framework of the new legislation regarding tunnel safety, the fire proofing material in the tunnel had to be re-assessed and tested in detail.
- Assessment of upgrading of the existing Traffic Control Centre Amsterdam, managing the operation of all Amsterdam tunnels and the investigation and development of a completely new Traffic Control Centre at a new location.

TEC provides technical consultancy for the Amsterdam Tunnel Program participating with experts in integrated Owners' project teams and by preparing separate design studies and services. Services completed or currently on going:

For the upgrade of the **Piet Hein Tunnel**:

- Technical MEP related designs
- Detailed assessment of fire resistance of civil structures subjected to fire loads under new tunnel safety legislation
- Development of an advanced BIM / Digital Tunnel Twin to realize a virtual environment for testing, education and future operation of the tunnel (in corporation with Infranea)

TEC experts are currently working in an integrated team of the Owner and the Contractor that are preparing and executing the renovation works (NEC4 / Alliance).

For the upgrade of the **Amsterdam Arena Tunnel**:

- Technical MEP related designs meeting current legislation
- Development of an advanced 3D BIM / Digital Tunnel Twin to realize a virtual environment for testing, education and future operation of the tunnel (in corporation with Infranea).

TEC experts are working in an integrated team of the Owner in the design phase.

For the **Michiel de Ruyter Tunnel**:

- Code compliance fire resistance of tunnel structures (fire resistance studies and tests).

For the **Traffic Control Centre**:

- Preparation Operational Concept Design / Functional and technical requirements
- Employers' requirements / space requirements Control Centre
- Assisting in development of Proof of Concept