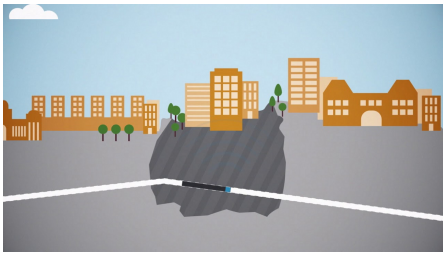
Citylink Anneberg-Skanstull Tunnel









SHORT DESCRIPTION

As the second of four phases of the so-called City Link project, the Anneberg-Skanstull Tunnel serves to improve the electricity supply in the greater Stockholm area.

THE PROJECT

Over a length of around 14 km and with a diameter of 5 m, the tunnel will be driven around 50 - 100 m under the Swedish capital using a tunnel boring machine.

The City Link project includes six ventilation shafts, elevator systems and the construction of technical buildings for electrical equipment in the Anneberg area and near the shafts. Completion is scheduled for 2024.

The aim of the City Link project is to connect the north (Upplands Väsby) with the south (Huddinge) of Stockholm via a new high-voltage line. It will run under Stockholm University, the Royal Institute of Technology (KTH) and Strömmen, a basin in the Baltic Sea. The experts from Implenia Infrastructure and the local Swedish business unit, Implenia Sweden, are working together on this project.

CHALLENGES

In addition to the extremely hard rock strength of over 300 MPa unconfined compressive strength, the challenges in constructing the Anneberg-Skanstull Tunnel include sealing the tunnel by means of rock grouting at water pressures of up to 100 bar from the TBM.

In addition, there are high requirements for compliance with the specified noise emissions and vibrations in the densely populated area of Stockholm, which is why areas with restricted working hours must be taken into account.

There is hardly any experience in Sweden with the Gripper TBM tunnelling method used for the Anneberg-Skanstull Tunnel, which is why one of the main challenges lies in recruiting sufficiently experienced personnel.

SUSTAINABILITY

The work in the immediate vicinity of the Strömmen sea basin and among the upmarket Östermalm and Södermalm districts, where a large number of historic and sensitive buildings such as the university buildings, museums, galleries and recording studios are located, is subject to strict environmental regulations.

FURTHER INFORMATION

Key data

- Realization: 2019 - 2024
- Total length: ~ 14 km
- Excavated cross-section: 19.62 m^2
- Geology: Metagrauwacke, granite, gneiss, metabasite

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Task
Commercial management

Services provided
Tunnel construction

Construction method

- TBM tunnel for power line in hard rock with Gripper TBM and shotcrete support
- L = 1 x 13.5 km, A = 19.62 m^2, D = 5.0 m
- Conventional blasting tunnel for power line in the area of a fault zone under the sea
- L = 1 x 250 m, A = 24.0 m^2
- Two ventilation/access shafts using the blasting method incl. caverns
- T = 60 or 100 m, A = approx. 40.0 m^2

- Four ventilation shafts using the raiseboring method
- D = 40 - 80 m, A = 12.60 m^2, D = 4.0 m

FACTS

Location	Skanstull , Stockholm , Sweden
Status	Under construction
Construction volume (value of our services)	90 M EUR
Start of construction	December 2018
Completion	May 2024
Building owner	Svenska Kraftnät (Swedish National Grid)
Planning	Tyréns, Nitro Consult, Sweco / WSP
ARGE	✓
TBM Tunnelling	✓
Blasting method	✓

SERVICES

Tunnelling

Service tunnels