Construction of two new sections of the Stockholm metro

ITINERA
ASTM GROUP

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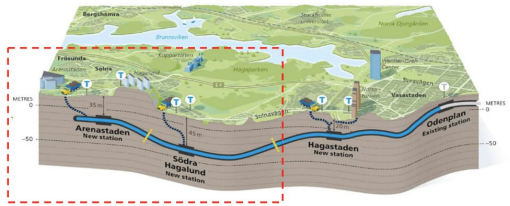
ITINERA | Itinera in Sweden & project overview

First employee February 2018

First contract awarded June 2018

First contract signed January 2019



Status January 2026:

270 employees

25 different nationalities

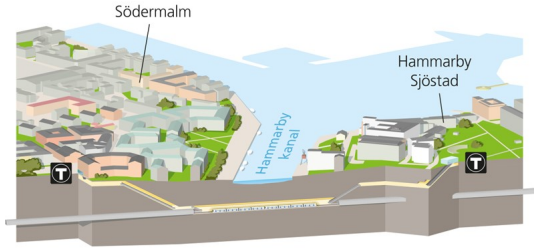
40% women (white-collar staff)

2 metro projects awarded

in February-March 2022

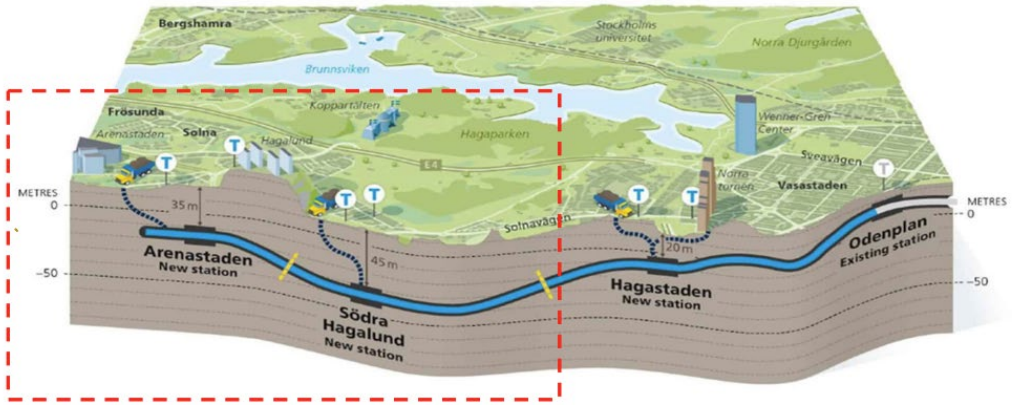
3717 // Arenastaden – Södra Hagalund

7716 // Hammarby Kanal



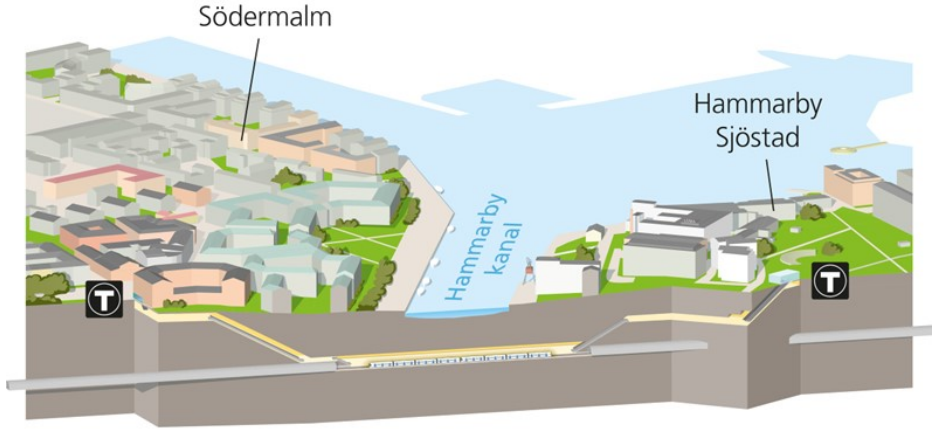
3717 // Arenastaden – Södra Hagalund Overview

Project:	Construction Contract 3717 Metro Arenastaden-Sodra Hagalund - New Underground to Arenastaden "Yellow Line" (Arenastaden - Sodra Hagalund)
Employer:	Region Stockholm - FUT Forvaltning for utbyggd tunnelbana (Administration for the Expanded Metro)
Contractor:	ITINERA
Work Description:	The object of this contract concerns the construction of two new stations Arenastaden and Sodra Hagalund with associated service tunnels and rail tunnels. Each station has two accesses from ground level and four ventilation shafts. The length start/end of the Lot from Arenastaden to limit with contract 3711 Hagastaden is 2,50 km.
Commencement Date :	02 Mar 2022
Original End of works:	24 May 2027
Site take over date	SOH 15/08/2022 ARS 01/11/2022
Start of Production	SOH 20/10/2022 ARS 24/11/2022



7716 // Hammarby Kanal Overview

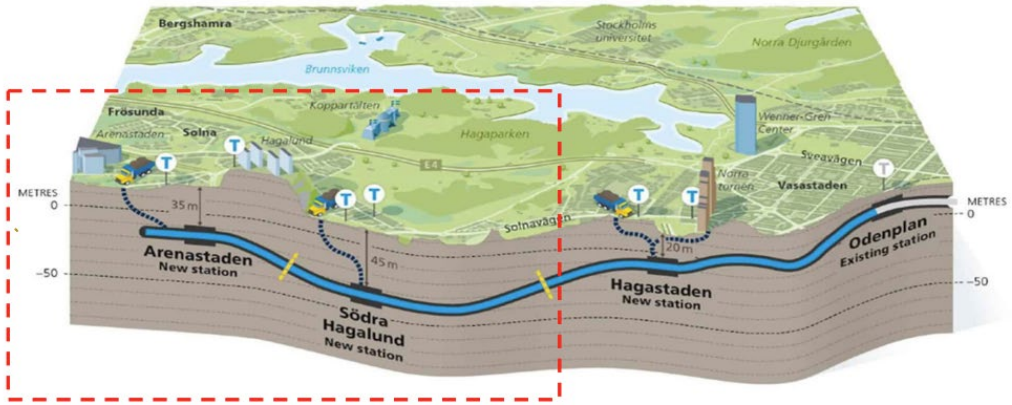
Project:	Construction Contract 3717 Metro Arenastaden-Sodra Hagalund - New Underground to Arenastaden "Yellow Line" (Arenastaden - Sodra Hagalund)
Employer:	Region Stockholm - FUT Forvaltning for utbyggd tunnelbana (Administration for the Expanded Metro)
Contractor:	ITINERA
Work Description:	The object of this contract concerns the construction of one new stations Hammarby canal with associated service tunnels and rail tunnels. The station has two accesses from ground level and four ventilation shafts. The length start/end is 1,20 km.
Commencement Date :	15 May 2022
End of works:	30 May 2027
Site take over date	15 July 2022
Start of Production	01 September 2022



ITINERA | Overview main parameter

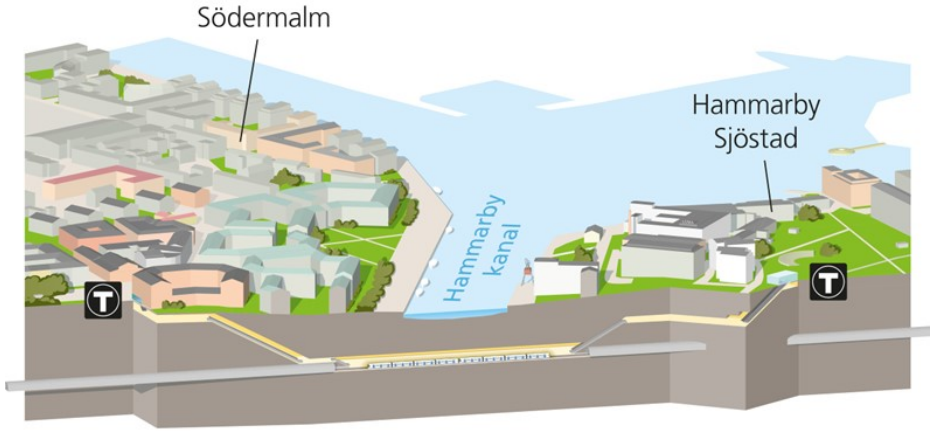
3717 // Arenastaden – Södra Hagalund

a. Extension of 2,50km;
b. Extension of 4,85km of rails;
c. 2 new station including 4 entrances (escalator shaft inclined 27°);
d. 4 ventilation shaft;
e. 2,3km of service tunnels;
f. Overall volume of rock excavation – about 400 000m3;
g. Overall volume of concrete – 15 000m3.



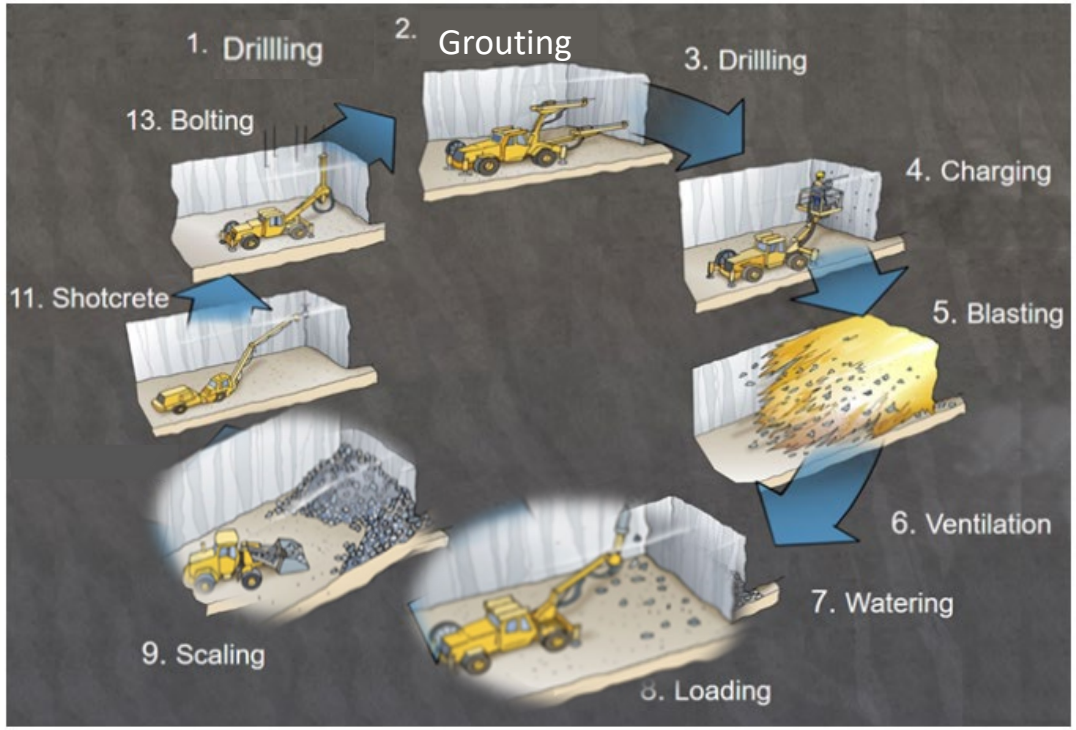
7716 // Hammarby Kanal

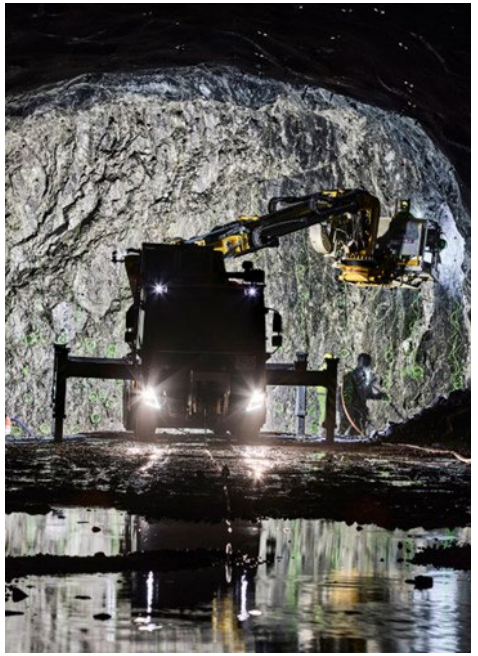
a. Extension of 1.14km;
b. Extension of 2.30km of rails;
c. 1 new station including 2 entrances (escalator shaft inclined 27°);
d. 2 ventilation shaft;
e. 1.1 km of service tunnels;
f. Overall volume of rock excavation – about 253 000m3;
g. Overall volume of concrete – 9 000m3.

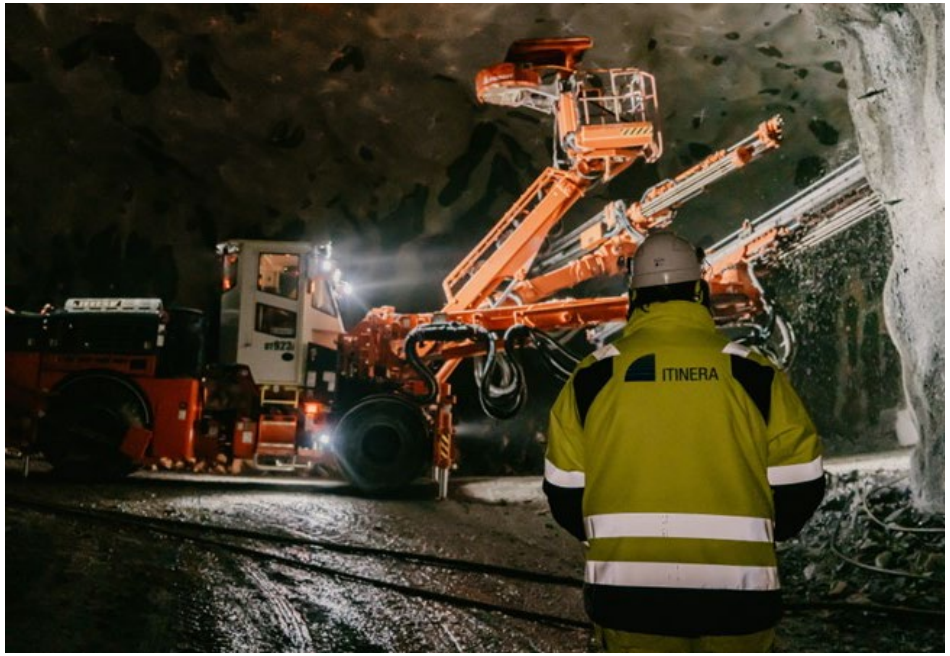


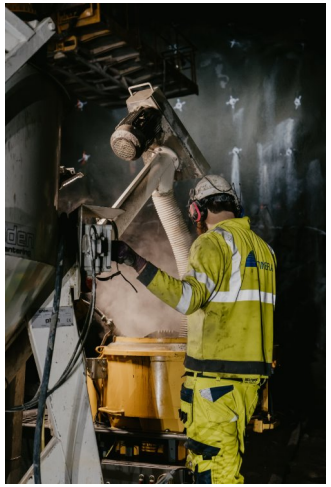
Main Activity

ITINERA | Rock Excavation

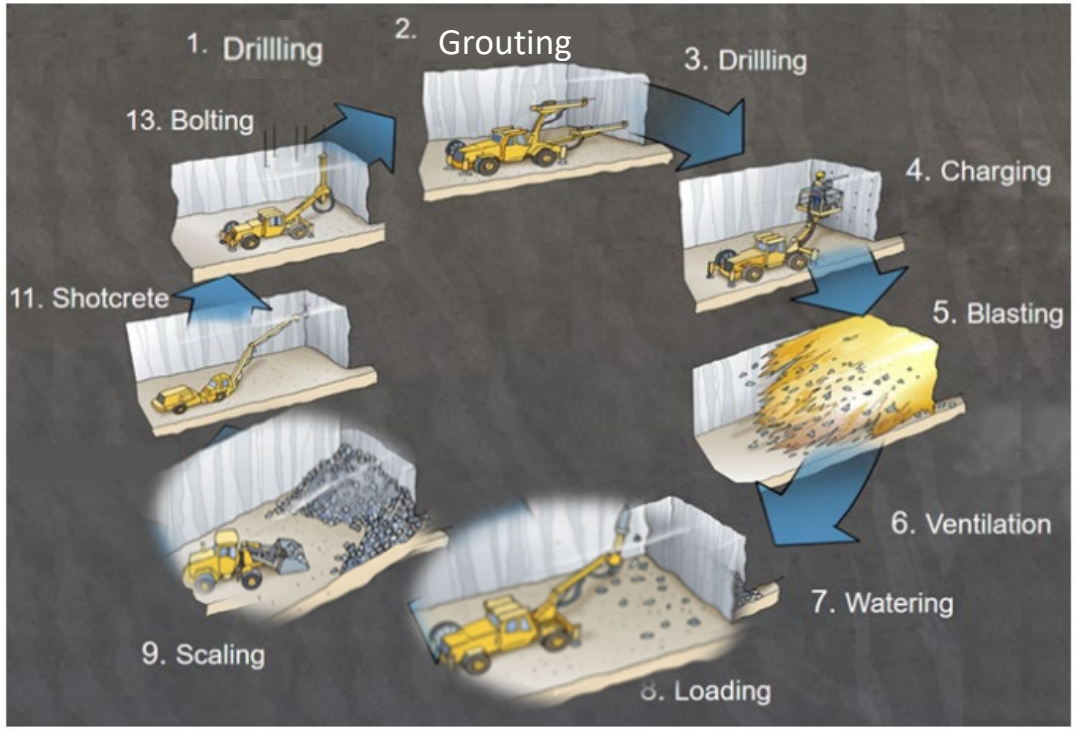


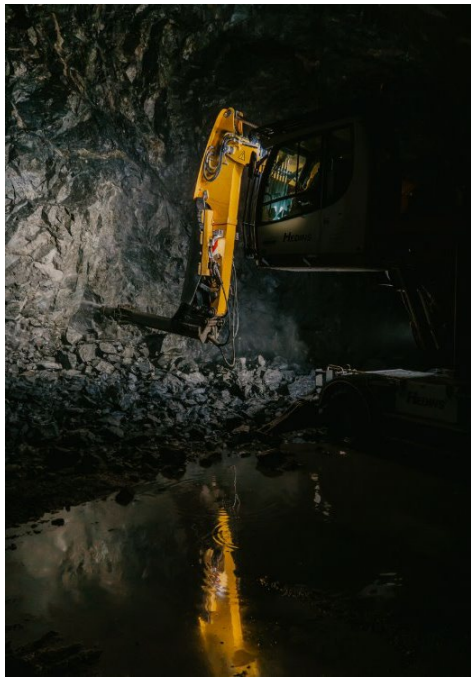


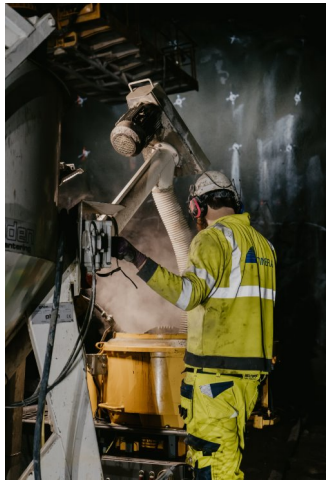


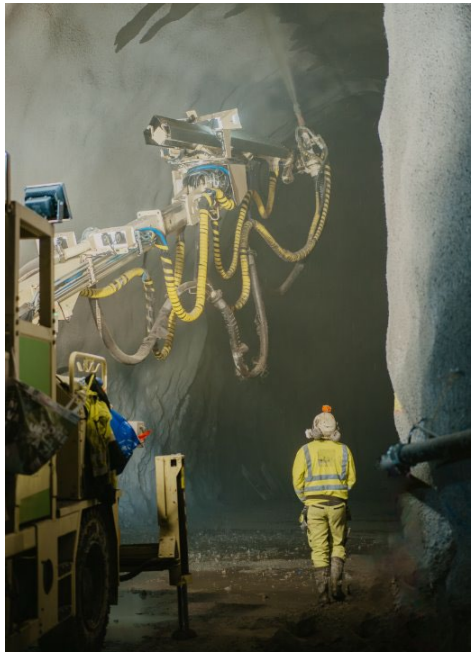


ITINERA | Rock Excavation



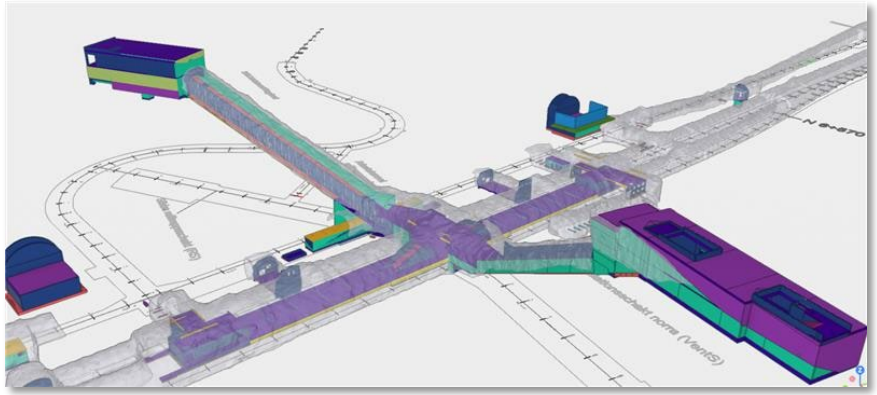


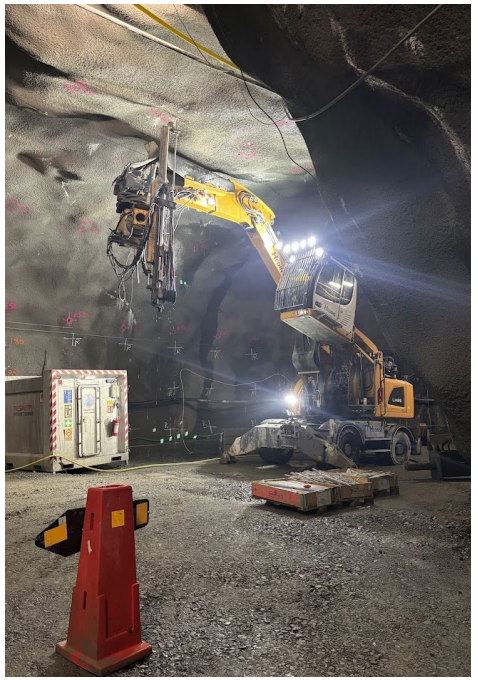


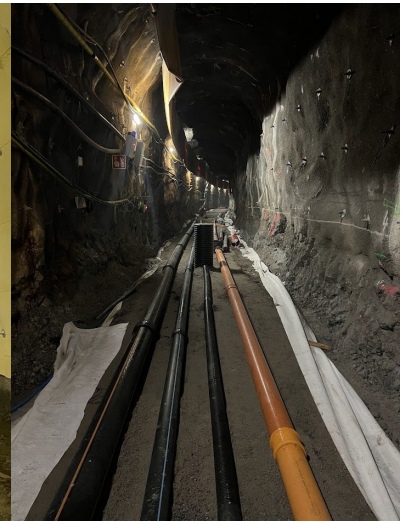


ITINERA | Other Activity

Earthworks
Waterproofing works
Concrete works







Main challenges

ITINERA | Main challenges

The main challenges of both project.

- **Urban congestion and limited space:** Severely constrained work areas and logistics with continuous interference from traffic and city activities.
- **Vibration, noise, and blast control:** Strict environmental limits reduce blasting windows and overall excavation productivity.
- **Protection of structures, utilities, and groundwater:** High risk to adjacent assets, with groundwater inflows potentially causing drawdown, settlement, and indirect damage.
- **Safety and regulatory constraints:** Blasting in dense urban environments requires complex permitting and stringent safety controls.
- **Cost, schedule, and productivity impacts:** Mitigation measures and limited advance rates significantly increase cost and schedule risk.

In the next slide 3 cases scenario describes the technical challenges on the project with the way, those have been overcome or planned to be.

ITINERA | Main challenges

In the next slide 2 cases scenario describes the technical challenges on the project with the way, those have been overcome or planned to be.

Rock excavation:

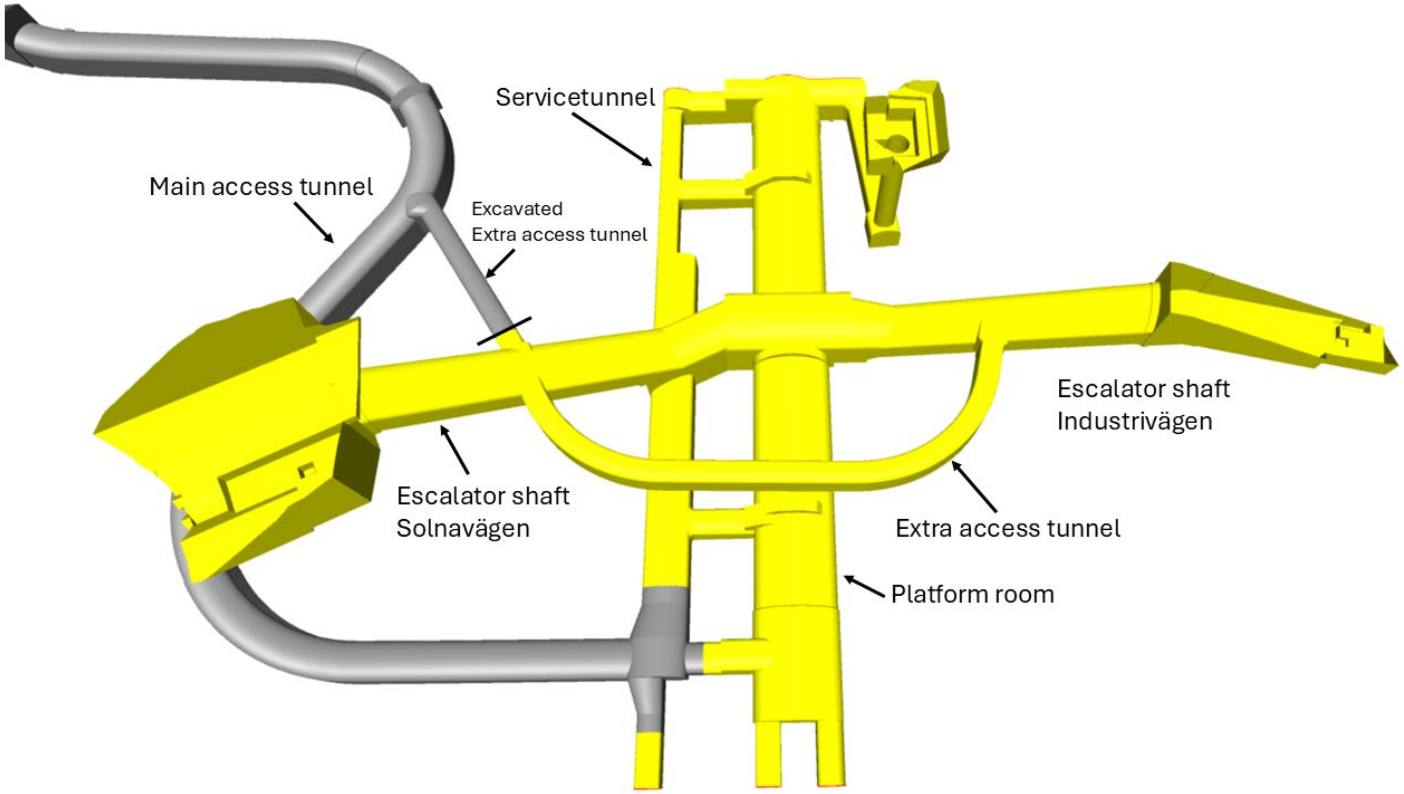
- **Escalator shaft.** In collaboration with the client and designer the Contracor has ridefined the escavation method for the escalator shft making the works safer and productive.

Concrete Works:

- **Northen entrance in the Hammarby project.** The Contractor is currently planning the works for the construction of the norhten entrance in an existing building.

ITINERA | Rock excavation // Escalator shafts

The escalator shafts are 75m long and have an inclination of approx. 27 degrees.
Full span is of the escalator shaft approx. 13m wide.



Original Construction Method

- Drill & blast from bottom to top
- Temporary false ramp required. With increased quantities of rock excavation.
- Multiple excavation fronts
- Extra access tunnel proposed

Limitations of Original Solution

- High safety risks under unprotected rock
- Difficult mucking due to inclination
- Limited access for equipment
- Time-consuming excavation

ITINERA | Rock excavation

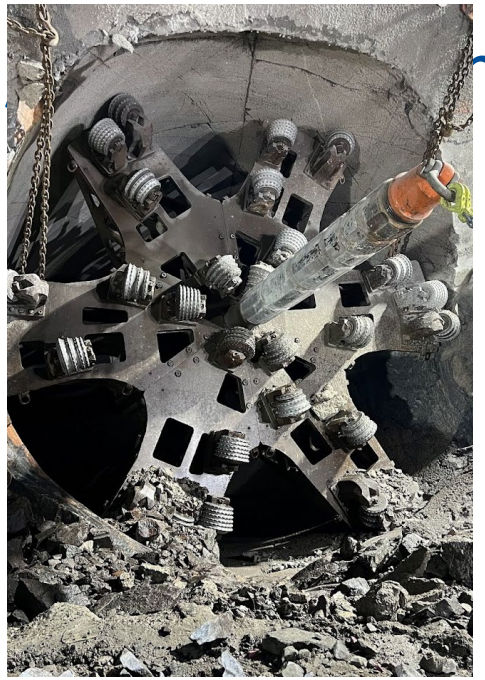
The escalator shafts are 75m long and have an inclination of approx. 27 degrees. Full span is of the escalator shaft 13m wide.

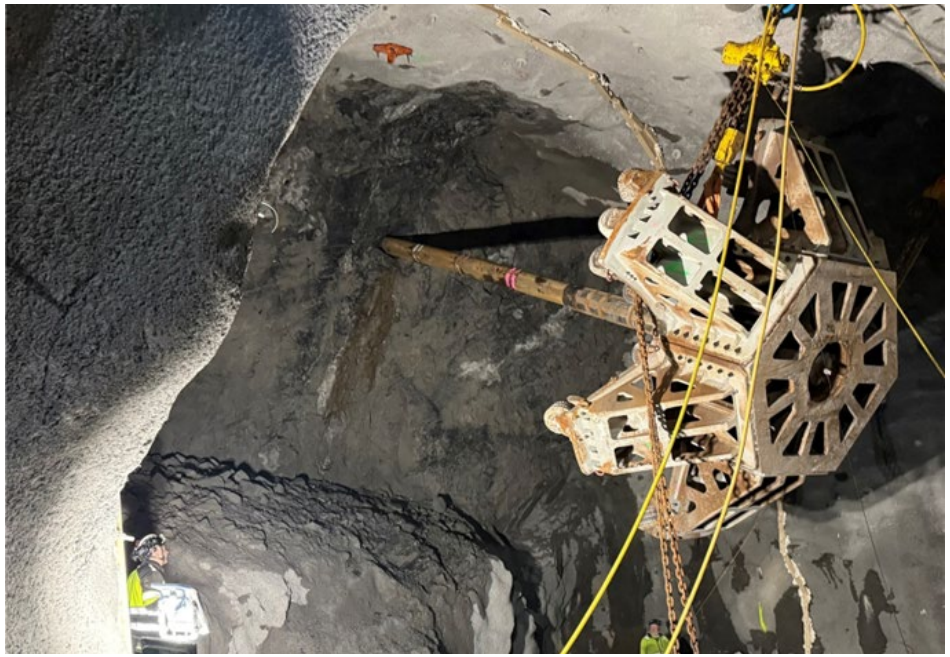
New Proposed Solution

- Full-length pre-grouting
- Pilot hole drilling
- Inclined raise boring (5 m diameter)
- Drill & blast excavation afterwards

Raise Boring Advantages

- 30% of rock removed mechanically
- Early geotechnical information
- Improved safety and ventilation
- Second escape route
- Better blast breakout





ITINERA | Rock excavation

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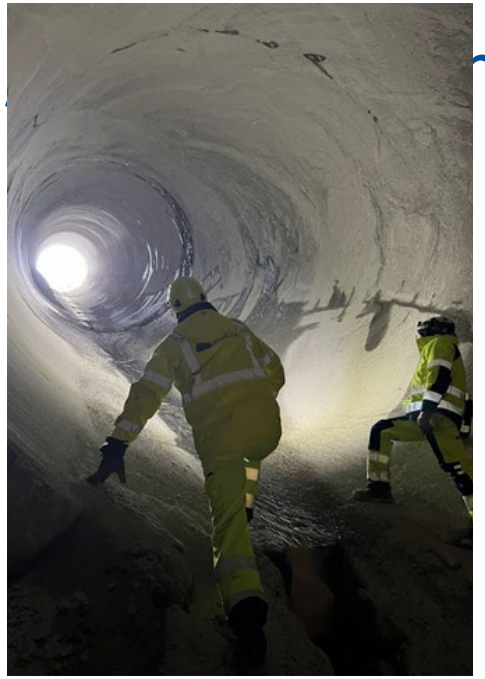

ITINERA | Rock excavation // Escalator shafts

ITINERA | Concrete Works // Hammarby Northen entrance

The Northen entrance of the Hammarby Station needs to be building under an existing building.

Video

#movingtothefuture

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