Sweden

Name: Swedish Rock Engineering Association
Type of Structure: Non profit, open association
Number of Members: 100 corporate members from public and private clients, contractors, suppliers, mining companies, consulting firms, institutions and research organizations

ASSOCIATION ACTIVITIES DURING 2022 AND TO DATE

Five committees constitute the backbone of the Swedish Rock Engineering Association (Svenska Bergteknikföreningen). These working groups are: Yearly Congress, Young Members, International, Professional Certification, and the national group of Rock Mechanics. The main activity of the association is the annual Swedish congress where a significant part of the Swedish industry gathers. This physical event was held in September 2022. The Young Member's mentor program DevelopYM, that was launched in 2018 continues. International has been working towards an increased Swedish participation in ITA activities. We are represented in all of the Sweden-relevant Working Groups within the ITA. Professional Certification is, since 2020, the group within the Swedish Rock Engineering Association that is responsible for accreditations of educators and certification of grout, bolt, and shotcrete workers. During 2021 this was developed to include shot fire licensees as well. The national group of Rock Rechanics is the Swedish representative of ISRM.

One of our proudest accomplishments is the development of the Children's book "Vinnie and the Metro". The book has been distributed for free to more than 12,000 children between the ages of 3 and 6 years old where they learn how to build tunnels in hard rock. It is planned to be available as an e-book at the WTC 2023

CURRENT TUNNELLING ACTIVITIES

STOCKHOLM BY-PASS (E4 FÖRBIFARTEN, STOCKHOLM)

This project includes an 18km long road tunnel. When complete this tunnel will be one of the longest and most complex highway tunnels in the world.

West Link - Korsvagen station (Västlänken, Gothenburg)

The West Link is a new double-track rail tunnel to strengthen the labor market in Gothenburg and West Sweden. Giving commuter and regional trains their own tracks in a tunnel beneath central Gothenburg will double capacity at Gothenburg's Central Station. The expansion of the rail infrastructure in Gothenburg also enables future development of the city above ground. The section Korsvagen, is approximately 3.2km, and has a tunnel system featuring very complex geometries as well as tunnels with low rock overburden.

Extensions of the subway in Stockholm

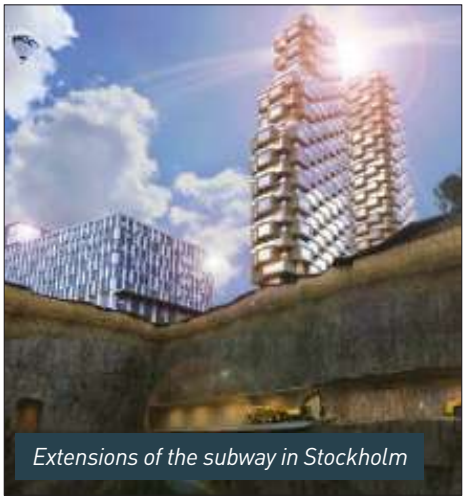
Building the new metro station at Hagastaden is large-scale and of high technical complexity below central Stockholm, which is surrounded by residential buildings, Karolinska University Hospital and Gustaf Vasa Church. Traffic above as well as below ground will go on as usual. Station Hagastaden consists of four ingresses, one in the hospital, two ticket halls and of course the metro tunnel with an accompanying service tunnel and connection to the existing metro system. High requirements are on health and safety and sustainability as the sustainability classification CEEQUAL is being applied.

Reconstruction of Slussen Stockholm incl new underground bus terminal

Slussen is a central area by the lock between lake Mälaren and the Baltic Sea. This is an important hub in Stockholm and a large underground bus station is under construction in the area. The construction works were ongoing during 2022.

City Link tunnel

This tunnel project with a length of 13.4km and a diameter of 5m approximately 50-100m below central parts of Stockholm started in 2020. The purpose of the project is to connect northern and southern parts of Stockholm with a new electricity supply. The project includes six ventilation shafts, elevator systems and the construction of technical buildings for electrical equipment. A 100m deep shaft was finished during 2020. From this shaft


Extensions of the subway in Stockholm


West Link - Korsvagen station

a 250m long tunnel will run under the Stockholms ström lake. The tunnelling works using a TBM started 2020.

HYBRIT: A unique hydrogen storage facility in Luleå

The HYBRIT initiative was launched in 2016 by three owners; SSAB, LKAB and Vattenfall. The pilot plant for the Hydrogen Storage facility will play a very important role in the overall value chain for fossil-free iron and steel production. Rock caverns and connecting tunnels have been constructed in the rock and a ventilation shaft has been drilled from the top of the rock down to the upper part of the rock cavern. In 2022 the facility was set into operation and the world's first fossil free steel has been produced.

FUTURE TUNNELLING ACTIVITIES

Ostlänken, the East Link high speed rail

This new high-speed rail south of Stockholm is at the ongoing design and planning stage. The project includes 12 single rail tunnels and 15 double rail tunnels. The longest tunnel will be 6km and the shortest will be 100m long. Construction is planned to start in 2024

SKB Forsmark, final repository nuclear fuel

Planning is continuing regarding Sweden's final repository for spent nuclear fuel. Process of getting the necessary permits is ongoing. The construction is ready to start as soon as permission is granted.

Hydrogen storage in Gällivare

This is a large lined rock cavern project in northern Sweden in the Gellivare municipality. This is a full scale Hydrogen Storage facility for fossil-free iron and steel production. It will be the world's largest facility for Hydrogen storage when completed.

Host of the WTC 2025 in Stockholm

At the WTC 2022 in Copenhagen, Sweden was chosen to host the WTC 2025 and the 51st General Assembly. This will take place on the 12th - 18th May in 2025.

EDUCATION ON TUNNELLING IN THE COUNTRY

Civil Engineering 3 years (BSc) or 5 years (MSc) as well as PhD studies is offered at several technical Universities. Courses include engineering geology, site investigation, rock mechanics and hydrogeology.

Chalmers University of Technology (Gothenburg), KTH (Stockholm), Luleå University of Technology (Luleå), and Lund University (Lund).

At Uppsala University (Uppsala) courses focus on geology, engineering geology and geophysical investigations.