

PROJECT DESCRIPTION

Swedish Transport Administration

Stockholm, Sweden

In 2009, the Swedish National Rail Administration presented a handbook with guidelines for the design of the load-bearing structure of rock tunnels. Following the merging of several transport administrations into *The Swedish Transport Administration*, an updated version of the handbook was required. In this version, the handbook comprised guidelines for railroad and road tunnels, as well as tunnel portals to: (i) provide advice on how regulations and technical requirements can be met, (ii) present practical guidelines for design work, and (iii) provide support to clients, designers and contractors through the entire planning and implementation process.

ITASCA'S ROLE

Itasca Consultant AB acted as project manager, authoring parts of the new and revised contents, and "translated" analytical design criteria for rock bolts and shotcrete to follow European standards (Eurocode).

PROJECT RESULTS

The handbook comprises (i) description of the rules and regulations, and how these affect the design work of rock mass excavations, (ii) guidelines to describe the type of design activities that should be implemented during the planning, constructions and operational (management) stages, (iii) description of how the required input data to the design can be collected and presented, and (iv) description of suitable design methodology and appropriate design methods and verification of chosen design.

With the update, the handbook now includes both railroad and road tunnels. A process for verification of the rock engineering design during the construction phase has been introduced in the handbook, and the analytical design guidelines have been adapted to Eurocode. The guidelines have a new disposition including a main document with description of regulations, technical requirements and the design process. It is followed by 16 appendices with detailed descriptions of the design process, design strategy, design of the load bearing structure, verification of technical solutions, etc.

