3D-Analysis of the Stockholm By-Pass Road Tunnel

CIVIL • ENVIRONMENTAL • MANUFACTURING • MINING • OIL & GAS • POWER GENERATION

PROJECT DESCRIPTION

ÅF Infrastructure AB &
The Swedish Transport Administration

Stockholm, Sweden

3DEC™

KUBRIX Geo®

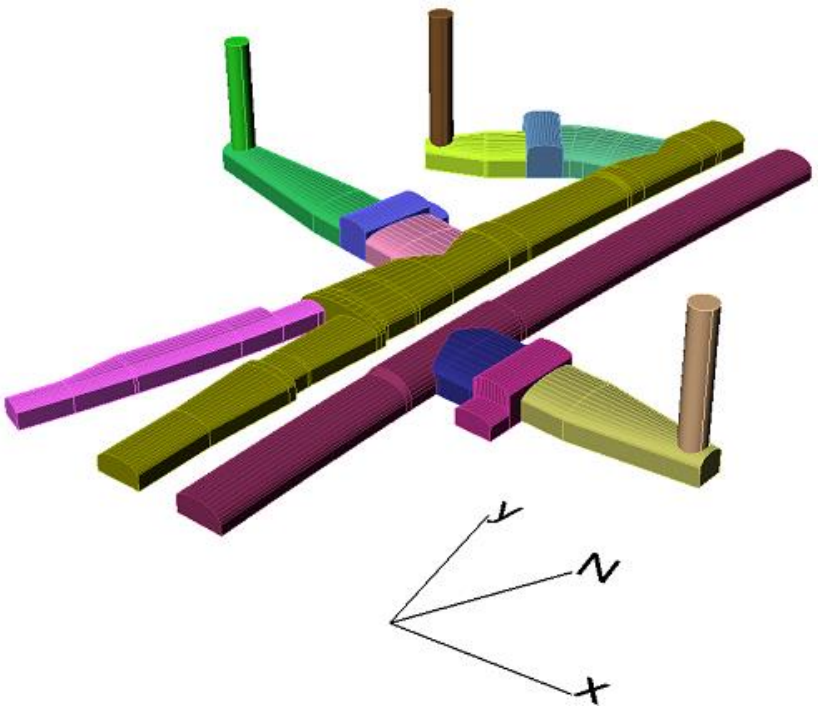
A new motorway west of Stockholm linking the north and south side of Stockholm is under development – the so-called "Stockholm By-Pass" ("Förbifart Stockholm"). The new link is a 21 km long highway, of which 18 km is in tunnels. At the interchange of Lovön, four intake and exhaust air stations are planned, being in close proximity to the main tunnels and ramps. In this area, there is also a deformation zone going through the intake and exhaust air station.

ITASCA'S ROLE

Itasca conducted three-dimensional numerical analysis using *3DEC* of the air station. Both linear-elastic and elastic-plastic material models were used.

PROJECT RESULTS

The large-scale stability, the large roof areas of the intersections, pillars in the ramp connections, and the influence of the deformation zone was investigated. Conclusions from the model and recommendations for the excavation were provided.



Model of intake and exhaust air station, Stockholm By-Pass, Lovön interchange

Itasca Consultants AB
Aurorum 2, SE-977 75
Luleå, Sweden | +46 (0)76 768 22 55 | jonny@itasca.se

www.itascainternational.com
www.Itasca.se