

Project: Underpass Design of Saint Pieters Railway Station, Gent, Belgium

Client: A global Consultants in the Construction Sector

Our client is one of the leading consultants in the construction sector specialized in Structural and Geotechnical design.

Paradigm was chosen to support them in the geotechnical study, design of structural elements of underpass structure, construction phase design and detailed drawings.



Entrance to Underpass

Objective:

- The railway could spare only the weekend for the construction of underpass. So the elements were to be made nearby and mechanically pushed to their position without disturbing the rail traffic much.

Services:

- Design of various temporary structures like Berliner walls and anchors which were needed for the execution of the work.
- Design of the railway underpass construction elements and provide working details.
- Develop various construction phase drawings using Auto cad, reinforcement drawings using Strakon and steel detailed drawing using Strucad

Methodology:

- Study of geotechnical properties from soil graphs and borings.
- Two dimensional model of the structure in Plaxis 2D with different construction phases .
- Slabs modelled using Powerplate.
- Berliner wall (Temporary Retaining Structures) modelled using Elasplas
- Detailed design document.
- Checking of design and drawings to ensure the quality
- Detailed drawings good enough for construction site.
- Periodic discussions and meetings with client to have proper coordination.
- Structural steel work detailed using Strucad.

Benefits:

- Quality design documents prepared and submitted in time and transmitted electronically to client; with only one co-ordinating engineer in client's office.

Software Used: Plaxis 2D/3D , AutoCAD, Elasplas, Powerplate, Strakon, Strucad, Microsoft Office.

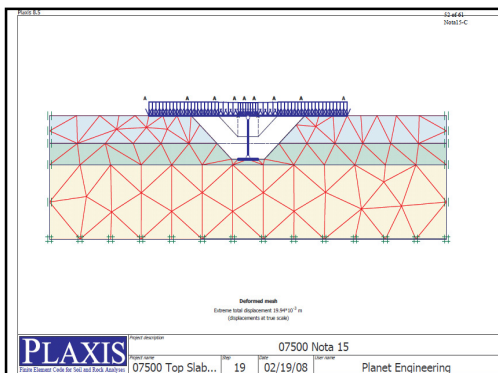
Technology:3D-modelling, FEM analysis, Customized automated worksheets in Excel for design.

Design Codes Used:

Country: Belgium
Code Used: Euro Codes

Duration : December 2007 – March 2008

Team Size : 5 Engineers + supporting CAD staff



Plaxis model of construction phase