



Extension of Paris Metro  
Line n° 14  
Underground structures  
2012 - 2013



FRANCE - Paris

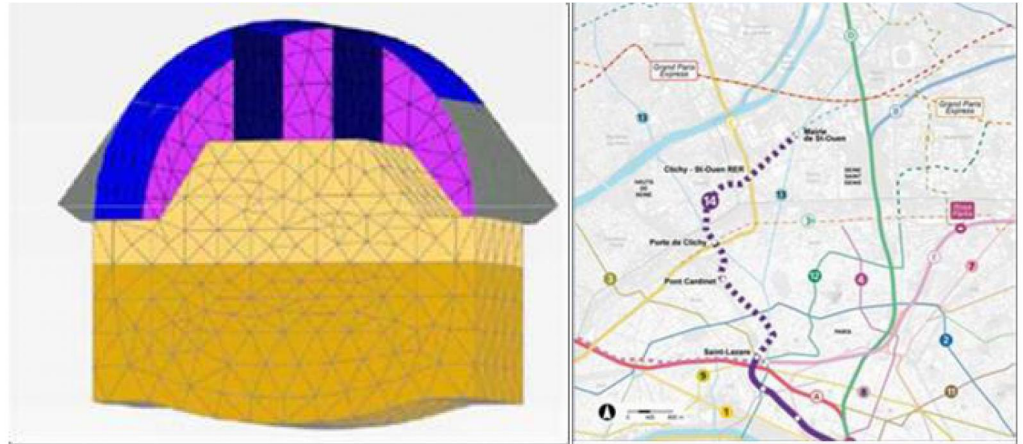
Client

SYSTRA

Project manager  
SYSTRA

Project owner  
RATP

Miscellaneous  
6,3 km of TBM tunnel with  
4 new stations



**Description of the project**

For more than a year and a half, TERRASOL has been carrying out missions G12 and G2 for the extension of Paris metro line 14 to Mairie de Saint Ouen, on behalf of SYSTRA Ile de France. This project, constituting the first step in the Grand Paris Express network, is mainly intended to relieve congestion on line 13 and assist in the development of large-scale urban development zones located in the 17th Paris district and in the neighbouring cities of Clichy and Saint-Ouen.

This entirely underground extension will be excavated with a Tunnel Boring Machine (TBM) over a distance of 5.8 km (plus approximately 500 m of connection tunnel to the maintenance site) and also includes the construction of four new open-air stations with a depth of 23 to 34 m, and a number of related structures with various functions (safety, ventilation, TBM dismantling structure, etc).

**Description of the mission**

This extension is located in the well-known Paris soil series, ranging from Ludian infra-gypsum marl to Lutetian coarse limestone, with a risk of gypsum dissolution.

TERRASOL's assignment combines follow-up of geotechnical soil-testing and drafting of geotechnical synthesis reports, from the preliminary project phase to the invitation to tender. TERRASOL also works on additional specific issues, such as the 3D modelling of the TBM dismantling structure. The works are scheduled to begin in the first quarter of 2014.

**Key features**

- o Assistance to project management : G12 and G2 mission (follow-up of soil testing, drafting of geotechnical synthesis reports)
- o Finite element modelling