



## 3D modelling of geotechnical structures

Buildings and Industrial installations

2012 - 2016



**FRANCE - Paris**

**Client**

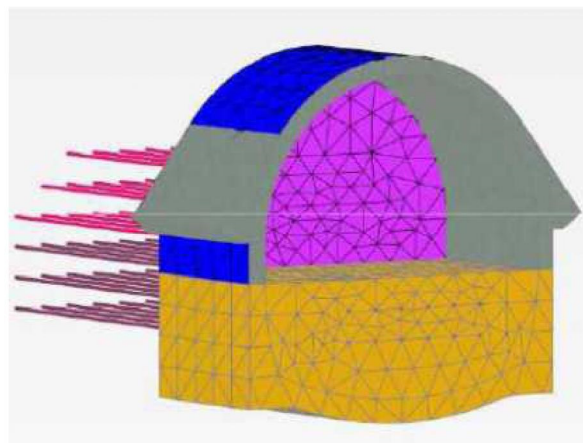
**BOUYGUES / SYSTRA**

### Project owners

Ministère de la Justice  
(High Court in Paris) /  
RATP (Metro Line 14)

### Miscellaneous

High Court in Paris: building  
foundations (61500 m<sup>2</sup>),  
Metro Line 14: 6 km long  
tunnel and 4 new metro  
stations



### Description of the project

More and more often, large-scale projects require complex stress-strain modelling for a better understanding of soil-structure interaction.

For a number of years, Terrasol has been carrying out 3D finite element modelling for structures as varied as retaining structures (the Odeon Tower in Monaco), foundations of complex buildings (the Louis Vuitton Foundation for Creation, the new High Court in Paris), underground works (the extension of Paris metro line 14), foundations of civil engineering structures (the Third Bosphorus Bridge), etc.

### Key features

- High Court in Paris: Geotechnical Project Management
- Paris Metro Line 1: assistance to Project Management

### Description of the mission

Let's consider 2 recent cases :

- The new High Court in Paris in the Batignolles area (a 160 m high building) : the aim of the 3D modelling was to understand the behaviour and interaction of the deep foundations of the three building cores with the complex Paris geology. This model made it possible to better estimate the settlements and the load transfer within the piled-raft foundation system.
- The dismantling chamber for the metro line 14 BM : this underground excavation is located below old buildings in the 8th Paris district. The 3D model was to prove that the compact shape of the structure and the construction methods helped to limit settlements.

Through these numerous cases, we have developed our know-how, and determined the limits of such modelling. We are thereby able to propose relevant approaches in accordance with each project specific issues and design progress.

### terrasol

Immeuble central seine  
42 - 52 quai de la rapée  
75583 Paris cedex 12 France  
Tél +33 1 82 51 52 00  
Fax +33 1 82 51 52 99  
info@terrasol.com