

## GRAND PARIS EXPRESS L15O M1

### Grand Paris Express - France

The project concerns the creation of a new metro line, the southern section of Line 15 west (between île Monsieur and the future Bécon-les-Bruyères station). This line is part of the project to extend the public transport network of the Grand Paris Express which will connect the territories of the Island of France and the capital.

#### Scope

- 14km of automatic line in single-tube tunnel
- 5 new stations (including two hybrid shaft/cavern stations)
- 16 ancillary works
- A railway siding in tunnels

#### Challenges

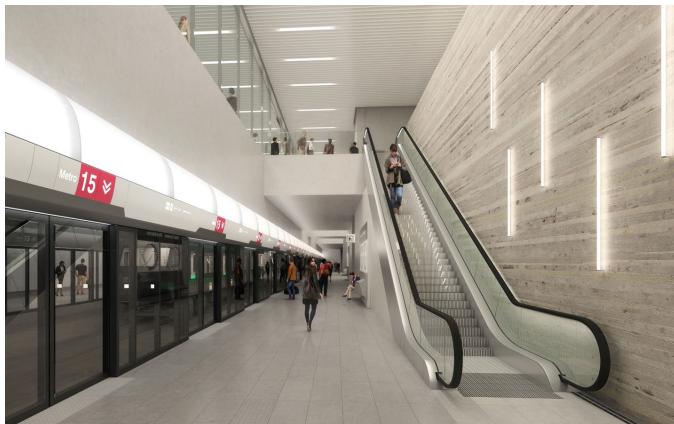
- Passage of the tunnel boring machine under the A13 tunnel, built in 1939
- Crossing the moving slope of Saint-Cloud
- Very densely built area, especially with skyscrapers up to 220m in the heart of the La Défense area
- Numerous interfaces with rail networks

#### Amberg Services

- Supporting the consortium of companies with the overall tunnel studies during the design-build tender process
- Realization of a 3D hydrogeological model
- Design of a GIS tool representing the information of the different actors
- Layout design in conjunction with system experts
- Dimensioning of tunnel connection branches - ancillary works
- Proposal for the auscultation system



- Leapfrog 3D geological model, with 3D visualization of the building, tunnel, stations and OA



- Platform of the Gare de Rueil – Suresnes Mont-Valérien



- Perspective of the forecourt of Rueil station

## AMBERG FACTS

### Contracted value JV

- Support during offer: € 5.2 million
- Success fee

### Contracted value Amberg

- Assistance during offer: € 0. 8 million
- Success fee € 1.7 millions

### Project Phases & Duration

Offer phase	2020 – 2022
Adjudication	2022
Feasibility study	2022 – 2024
Construction phase	2024 – 2032

### Project details

#### Tunnel

- Double-track single-tube tunnel
- Excavation diameter 9.85m,
- Total length of the bored tunnel: 14km
- The section starts from the Ile Monsieur well in Sèvres, the interface point with line 15 South and ends at the Bruyère Park well in Courbevoie, interface with the northern section of line 15 West. The section, entirely in tunnel, has connecting branches every approx. 800m to the ancillary structures. The tunnel crosses the Parc de Saint-Cloud located in a moving slope and the business district of La Défense with many skyscrapers.

#### Stations

- 5 underground stations,
- Each station has its own architecture due to the context (existing buildings, variable passenger flow, depth of 20 to 50m)
- 3 stations are carried out in open excavation with molded walls
- 2 stations are built using a hybrid method: a main shaft with a moulded wall and open excavation and extensions for the cavern platforms.

## CLIENT FACTS

### Overall cost

- Total € 3.5 billion

### Overview project

- Construction of a section of line 15 west extending line 15 south
- 5 new stations
- 1 two-lane single-tube tunnel of 14km
- 1 rear station in tunnel dug in traditional method
- Automatic metro
- Start of work scheduled for 2024
- Expected commissioning in 2032

### Special features of the project

- First project of the Société du Grand Paris in design and realization
- Passage in a moving slope
- Passage closes to towers up to 220m high
- Desire to have strong identities for each station

### Geology

- Heterogeneous geology including passages in chalk, limestone, clay and sand

### Contact Person

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