



New railway track Prague Main Station - Masarykovo Station - Libeň, Vysočany, Holešovice

CLIENT

Správa železniční dopravní cesty, státní organizace
(SŽDC, s.o.), Praha 1 – Nové Město, Dlážďená 1003/7

LEAD DESIGNER

SUDOP Praha a.s., Praha 3, Olšanská 1a

CONSTRUCTION PERIOD 07/2004 – 09/2010

VALUE 8321.2 mil. CZK

Construction of the south branch of the Vítkov tunnel was rated in the most complicated category of the excavation works classification. The tunnel is situated longitudinally under the Vítkov hill and passes under the prestigious area of the Vítkov National Memorial including the equatorial statue of Jan Žižka. Due to the presence of these structures, the work cycles had to be adjusted to keep the monitored deformation performance of the work within the required design limits.

The length of the driven part of the tunnel is 1,251 m. The two-track tunnel has been equipped with emergency refuges on both sides, each 25 m, along with pedestrian walkways on both sides of the tunnel. A new Austrian tunneling method (NRTM) was used for the creation of the tunnels. The tunnels were driven in the rock material, which is rated in four excavation classes: 3, 4a, 4b and 5a. The rock material was blasted. Two-layer tunnel lining was used, temporary and permanent, with an inserted water membrane at the upper tunnel vault. The lower tunnel vault and sections of the tunnel with bottom structure were not provided with any water membrane.

The permanent tunnel lining has been constructed from in-situ concrete 0.3 – 0.6 m thick, only 60 % of which was carried out as reinforced concrete.

Total length of the tunnel	1,365 m
out of this driven	1,251 m
out of this excavated	114 m
Maximum height of the overlying rock	45 m
Longitudinal slope	0.3 %
Directional curves	R=647.8 and R=601.8 m
Width of the tunnel excavated section	12.8 m
Height of the tunnel excavated section	9.5 -10.4 m
Cross area of the excavated section	96 -108 m ²
Total volume of the excavated soil	108,907 m ³
Four connection corridors of total length	99.54 m