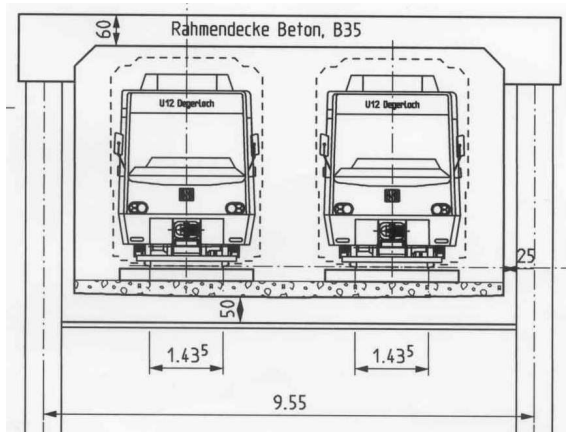
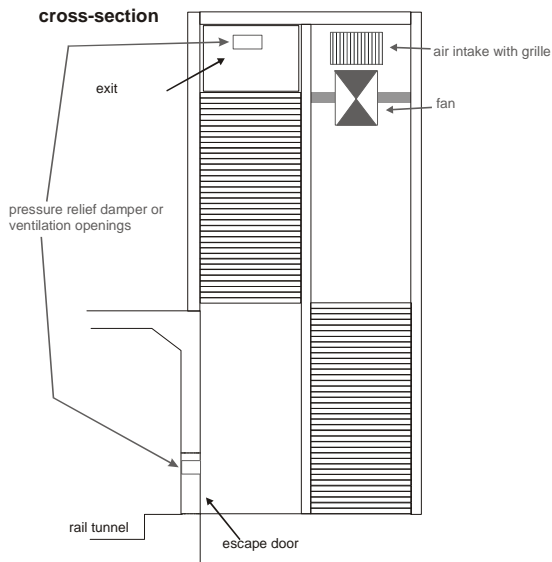


Overview of the extension of the city railway network



Cross-section of the double track tunnel (cut-and-cover)



Elements for the ventilation of the emergency exit

Description

The city of Stuttgart is planning the U12 city railway line as a double track link between Hallschlag and Münster. A part of the line with a total length of 600 m is designed as an underground double track tunnel with an open station (Bottroper Strasse station). The city railway system is operated by Stuttgarter Strassenbahnen Ltd. (SSB). The network consists of 120 km track length.

Within the scope of the preliminary design of the U12 city railway line, HBI Haerter Consulting Engineers was mandated with the development of a concept to support self-rescue in the event of a fire.

Services

HBI provided the following services:

- Definition of the detailed objectives for ensuring safety in case of a fire accounting for the relevant German regulation (BOS-trab) for city railways
- Preparation of a numerical model for calculation of the air flows induced by the ventilation and the moving trains
- Analysis of the aerodynamic conditions and design of the safety relevant measures in the tunnel
- Consideration of the inclination of the tunnels to determine the influence of thermal buoyancy in the event of a fire
- Overall specification of the safety measures: hand rails, escape route signage, escape route lighting, ventilated emergency exits
- Presentation of the further steps of the design
- Documentation of the results and revision of the interfaces with civil engineering

As a result of the services delivered by HBI, the safety in the event of a fire and the ventilation measures were adequately confirmed and the project received its formal approval from the authorities.