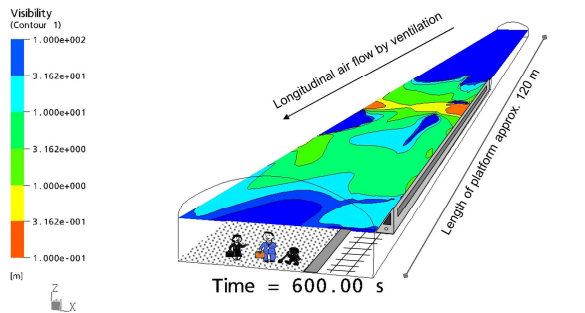


Plan view of the metro station Marienplatz in Munich



CFD study concerning smoke propagation on the platform. Visibility 2.5 m above platform level at an air velocity of 1 m/s

Description

Marienplatz is one of the most frequented stations of Munich's metro system. 30 years after its construction, a smoke extraction system was installed to provide a state-of-the-art degree of fire safety for the station.

The ventilation concept is based on a smoke extraction from the platform endings. A ventilation station is used for both platforms of the station. The smoke is carried out to Marienhof. The refurbishment was done in 2006/2007.

Services

The following services were provided by HBI Haerter Consulting Engineers:

- Feasibility study for different smoke extraction systems in the case of an emergency in the station
- Definition of functional ventilation objectives with authorities considering results from recent 1:1-scale fire test of the City of Munich
- Determination of the final ventilation concept
- Transient 1D-simulation of the air flow in all tunnel sections and station access/exits with the computer code THERMOTUN, considering the movement of the trains and the influence of the ventilation measures
- Transient 3D-simulation of the smoke propagation on the platform with the CFD-code CFX
- Detail design, tendering, site management for the electro-mechanical equipment (axial- and jet-fans, fire detection system, control system and power supply)
- Site acceptance tests and measurements and validation of system performance according specifications
- Training and documentation of ventilation systems