



Exhaust Fan



Jet Fan FAT



Smoke test

Description

The Flüelen Tunnel is part of the Swiss National Road A4. It forms the city bypass of Flüelen. The tunnel is a bi-directional road tunnel with one traffic lane per direction. The tunnel length is 2590 m.

The tunnel ventilation system is of longitudinal type with the option of a local extraction through the overhead duct. The ventilation building is located in the middle of the tunnel. It is equipped with two exhaust fans operating in parallel. The fans are used for extraction of smoke or polluted air through the overhead ventilation duct. The exhaust air is then discharged through a 230 m vertical shaft. At the northern portal, four jet fans are installed for controlling the longitudinal air-flow.

In order to meet the latest requirements with regard to tunnel safety, a parallel safety gallery (SiSto) was constructed. The safety gallery is connected with the main tunnel by nine cross-passages. The gallery is equipped with a pressurisation system operating from both portals of the gallery.

Services

HBI was responsible for the following scope:

- Design of tunnel ventilation and safety gallery ventilation: preliminary to detailed design
- Preparation of tender documentation for jet fans, axial fans, smoke dampers and safety gallery ventilation
- Bid evaluation and recommendation for contract award
- Evaluation of supplier's technical documentation, Factory Acceptance Tests
- Monitoring of equipment installation and commissioning
- Aerodynamic measurements, calibration of air-flow monitors, smoke tests
- Preparation of ventilation control system functional description
- Ventilation control system Site Acceptance Test