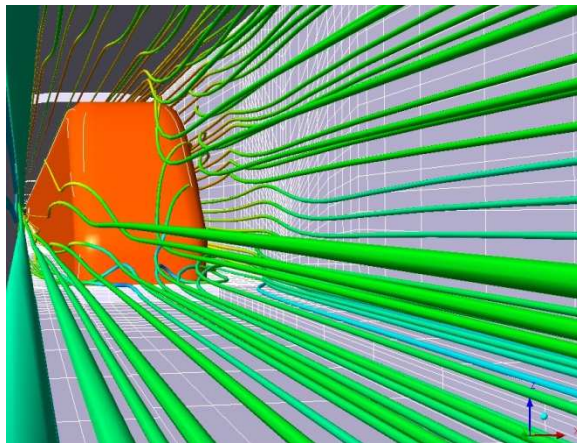
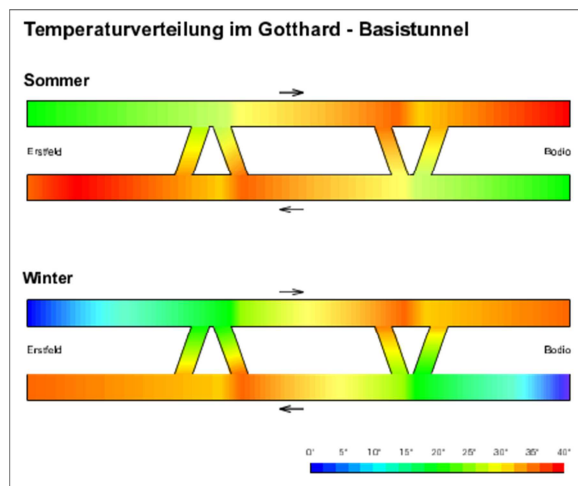


Installation of a fan in a tunnel



Visualisation of flow through a rail tunnel



Calculation of climate in the Gotthard base tunnel

With more than 1000 successful reference objects HBI Haerter Consulting Engineers is an internationally leading consultant specialised in tunnel ventilation. Quality, innovation and reliability characterize the services of HBI. The consultancy services include:

- Tunnel ventilation
- Pollution dispersion calculations
- Aerodynamics & thermodynamics of tunnel systems
- Safety concepts
- Ventilation in case of fire
- Measurements
- Fire and smoke tests
- Cooling and ventilation of construction sites
- 3D fluid flow calculations (CFD)
- Refurbishment of ventilation installations
- Optimisation of the controls of ventilation
- Construction site supervision
- Expert opinion and studies
- Calculations of climate in tunnel systems
- Mechanical equipment in tunnel

Within the tunnel ventilation project, HBI's services range from feasibility studies, environmental measurements and preliminary studies over concept and detailed design, control system design, tender specifications, site supervision to commissioning as well as optimisation during operation and refurbishment.

Detailed information is available in the following documentation as well as on HBI's website www.hbi.ch.