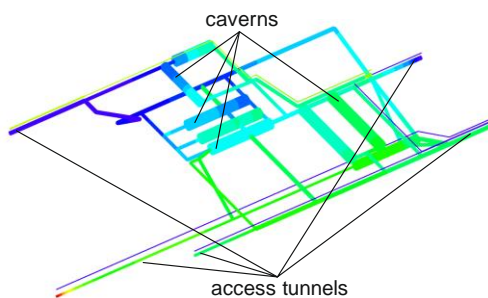




Tunnel environmental conditions during construction are affected by numerous factors



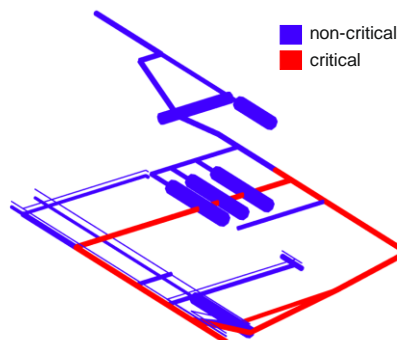
Temperature distribution in a complex tunnel network during excavation works

Information	
Type:	Segment
ID:	B1_S22
Temperature:	14.91 °C
Humidity:	78.90 %
Massflowrate:	289.23 kg/s
Volumetric flowrate:	241.03 m³/s
Velocity:	4.76 m/s
Cross-sectional area:	60.00 m²
Length:	500.00 m
CO (ppm):	0.04
NOx (ppm):	0.37

[CLEAR SELECTION](#)



Investigation of a specific point in the network by clicking on a segment



Identification of areas with critical conditions (e.g. pollutant concentrations)

Tunnel construction is becoming increasingly complex. Similarly, health and safety requirements are more and more demanding. In order to determine the environmental conditions and air quality in tunnel systems, sophisticated calculation tools are required.

The HBI simulation tool BAUKLIMA can be used to efficiently and reliably simulate the tunnel environment and air quality of a tunnel construction site from the start of construction to commissioning. The results of the calculations are shown in clear 3D representations.

The simulation method and visualization considerably simplify and accelerate the design of ventilation and cooling systems. Safety measures for pollutant and smoke releases are better planned.

## Our services

- Simulating the environmental conditions of tunnel systems and underground space that change during the course of construction - from excavation to commissioning
- Consideration of variable air routing with air ducts, jet fans, air-locks, etc., taking thermal up / down draft into account
- Modelling the tunnel environment under the influence of waste heat from machinery and cooling systems, considering daily and annual changes of operation and external conditions
- Determination of ventilation and cooling power requirements and system features
- Determine the tunnel environment for heat conduction and storage in the rock as well
- Calculate the airborne pollutant concentrations, e.g. CO, NOx, dust and smoke

## Your benefit

- Reduction of construction costs optimised ventilation and ventilation systems
- Easy assessment of various construction processes with regard to ventilation and cooling
- Intuitive and interactive 3D visualization of the course over time and all relevant measurement parameters via a web browser
- Evidence of compliance with occupational medical limits and safety