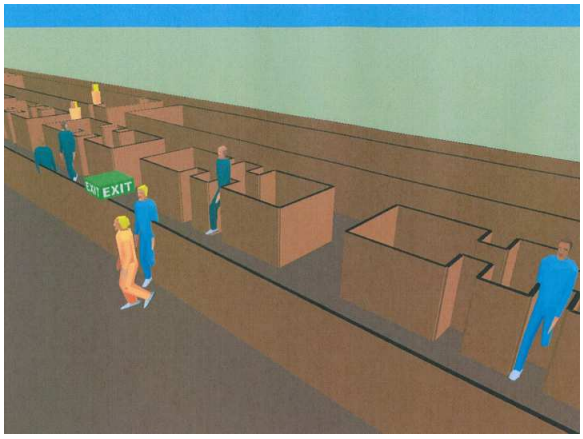
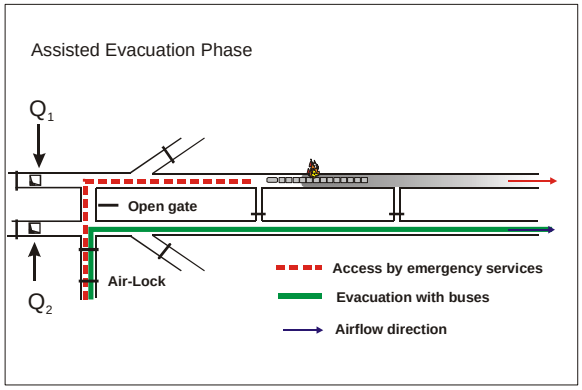
Service: Escape route planning and rescue concepts



Escape of tunnel users from their vehicles



Rescue phase in a twin-bore tunnel system with cross-passages, evacuation taking place in the smoke-free non-incident tube

Smoke extraction through shaft in the event of fire

Fires in underground transport system have to be considered at an early design phase of a project. Based on a comprehensive risk assessment and a useful combination of preventive and curative measures, it is important to find the optimum solution for a given project. Evacuation and rescue concepts are important requirements for a successful handling of underground fires.

Our services

- Development of escape and rescue concepts for underground transport systems in collaboration with the operator, the fire brigade, the civil engineers, etc.
- Calculation of smoke and gas concentration by means of 1D and 3D computational simulations to check the efficiency of the smoke exhaust system
- Design of ventilation and smoke exhaust systems for tunnels or underground tunnel systems
- Calculation of escape and evacuation times depending on the number of escaping passengers and the detailed geometry of the underground system
- Provision of input data for quantitative risk analysis

Your benefits

- Based on our experience from major, international, large-scale projects we have developed significant know-how in the planning of escape and rescue routes in underground systems.
- We are able to implement safety concepts and to design the equipment for smoke removal.
- HBI Haerter Consulting Engineers is a member of PIARC WG 6 “Tunnel Ventilation and Fire Control“. You have access to the latest developments and results in the area of smoke removal from tunnels.
- HBI utilises state-of-the-art numerical tools for design and performance validation.