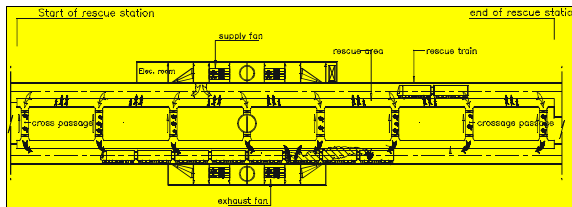
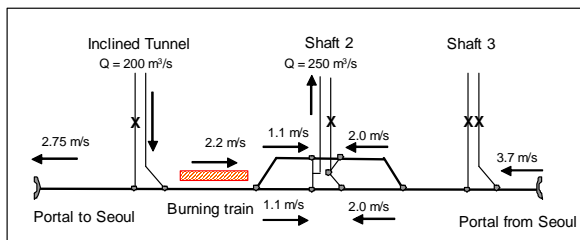


Overview of the Young Dong Project



Emergency station



Emergency ventilation in the event of a burning train in the tunnel (example)

Description

The Young Dong Railroad Tunnel, the longest railway tunnel-to-be in Korea, is a 16.3 km single-track rail tunnel with a crossing station and will be operated with electric and diesel trains.

The limitation of diesel fume concentration was a key requirement in the design of the ventilation system. In addition, a safety concept was required taking appropriately into account the event of a burning train.

Korea National Railroad – KNR, the building owner, contracted the Daewoo Consortium with the turn-key project. HBI Haerter Consulting Engineers was mandated by Daewoo as their specialist for ventilation and safety engineering.

Services

HBI Haerter Consulting Engineers provided the following services:

- Determination of the design criteria on the basis of HBI experience with similar projects and international standards
- Estimation of the diesel emissions of the diesel locomotives to be operated in the tunnel
- Numerical calculations of the movement of smoke in the tunnel as a function of train movement, thermal buoyancy and the designed ventilation system
- Provision of a quantitative risk analysis
- Planning of measures to avoid possible safety risks, in particular design of a rescue station within the tunnel
- Development of a ventilation concept for normal and emergency cases
- Satisfying the requirements of the ventilation and safety systems set by the building owner with regard to operational, maintenance and replacement costs