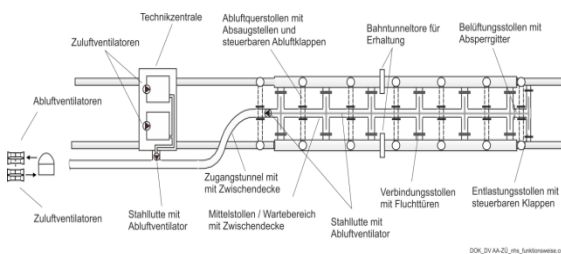
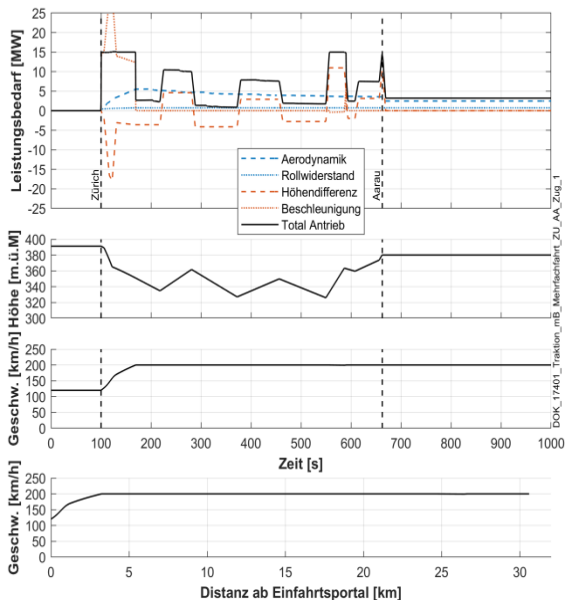


Diagram of direct connection joining Aarau with Zurich



Concept of emergency stop area in tunnel



Calculated traction power requirement and speed profile for a passenger train to travel through the tunnel

Description

The performance of the railway network between Aarau and Zurich is now reaching its capacity limits and is in need of improvement. This necessitates a new line, for which two engineering solutions have been developed and analyzed: A) A staged concept with the Chestenberg tunnel in phase 1 and the Chestenberg/Honeret tunnel in phase 2; B) A direct connection between Altstetten and Rapperswil without any intermediate connections or stages. In 2014/2015, a comprehensive comparison of the two approaches was made on behalf of the Federal Office for Transport (FOT). The study concluded that the direct connection was clearly better than a staged solution with the Chestenberg/Honeret tunnel. In the end, the substantially higher costs of the stageable version became the key, decisive factor. Accordingly, planning of the variant involving the direct connection was then carried out in detail as part of an extended concept study.

Services

HBI Haerter Consulting Engineers was commissioned by INGE Reusstal during the concept study for the Aarau - Zurich direct connection to define the aerodynamics and ventilation parameters of the planned tunnel structure.

- Aerodynamic studies of the tunnel system variants
- Validation of the tunnel cross-section area for the 30 km 2-track tunnel variant using appropriate calculation tools with respect to traction power requirements, micro-pressure wave limitation and pressure comfort criteria
- Definition of a suitable tunnel ventilation concept for normal, maintenance and incident scenarios
- Concept for the underground emergency stop area and required access structures
- Determination of required air volumes
- Rough specification of ventilation equipment and ventilation structures
- Coordination of results with tunnel safety and structural planning departments, and identification of open items and planning focal points for subsequent project phases