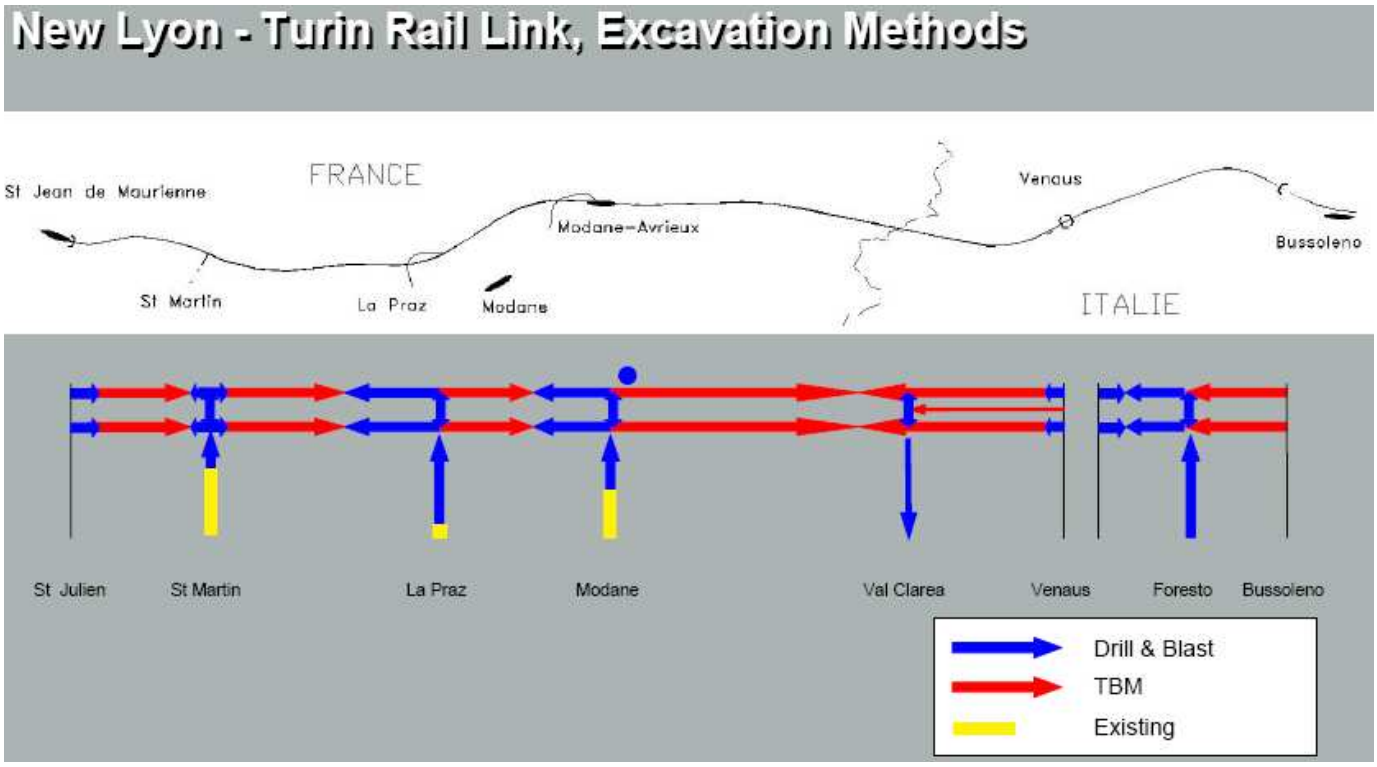
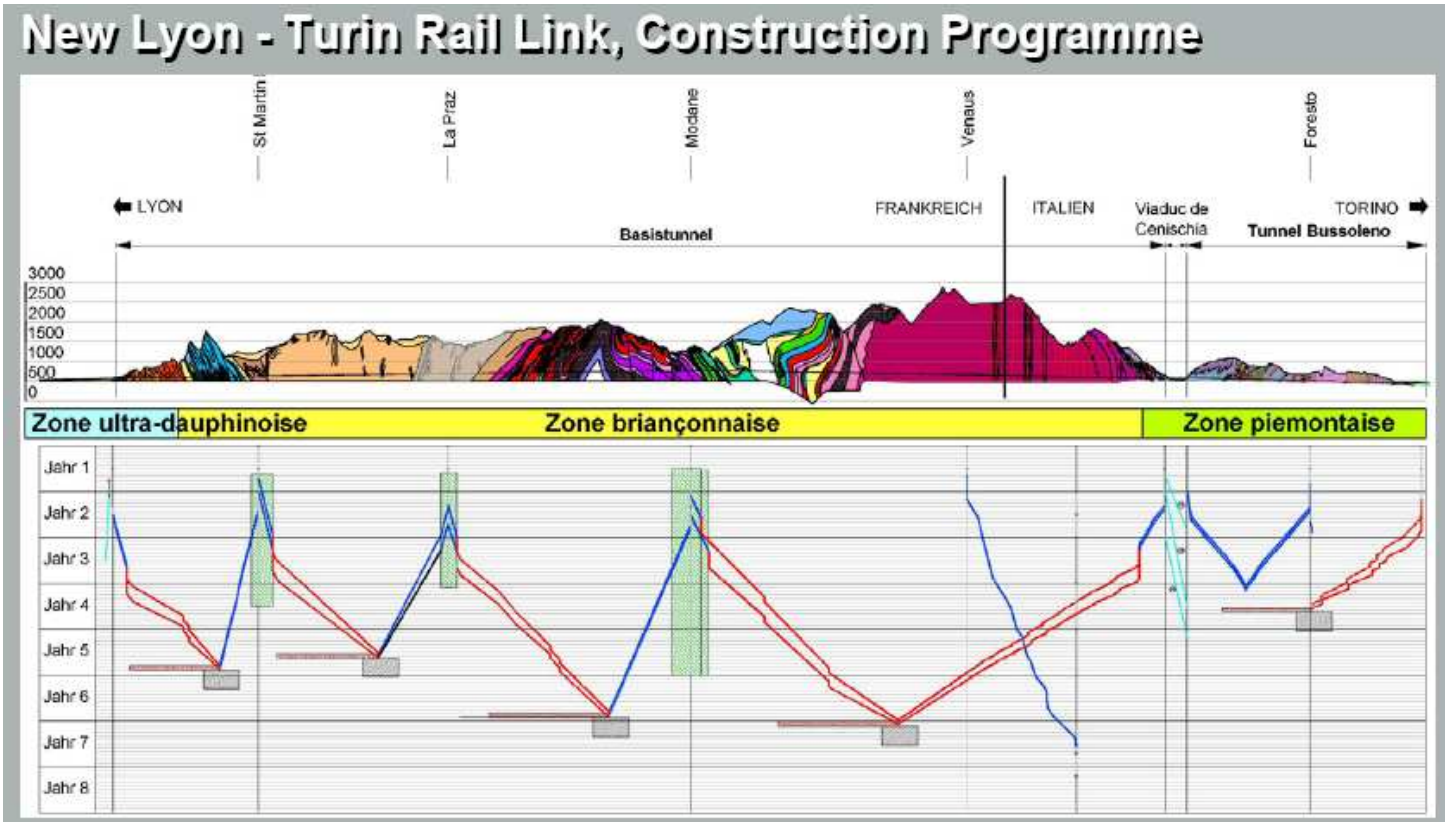
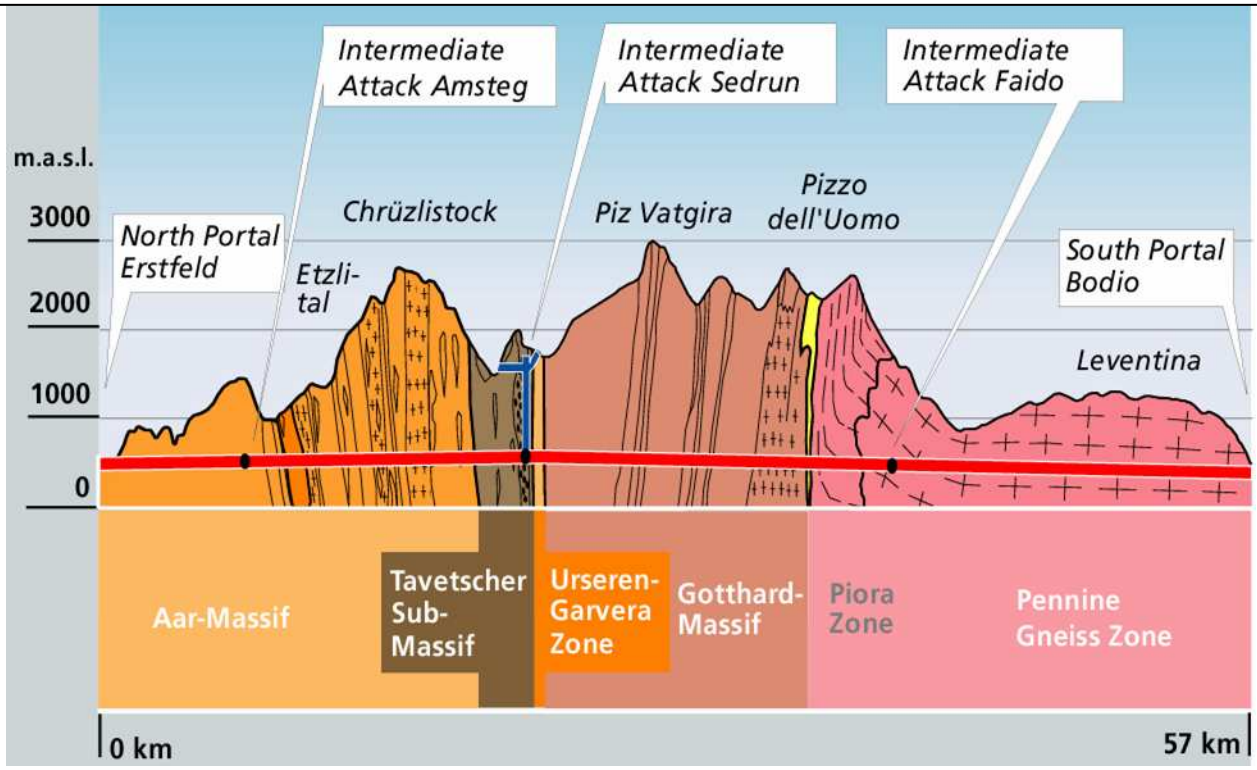
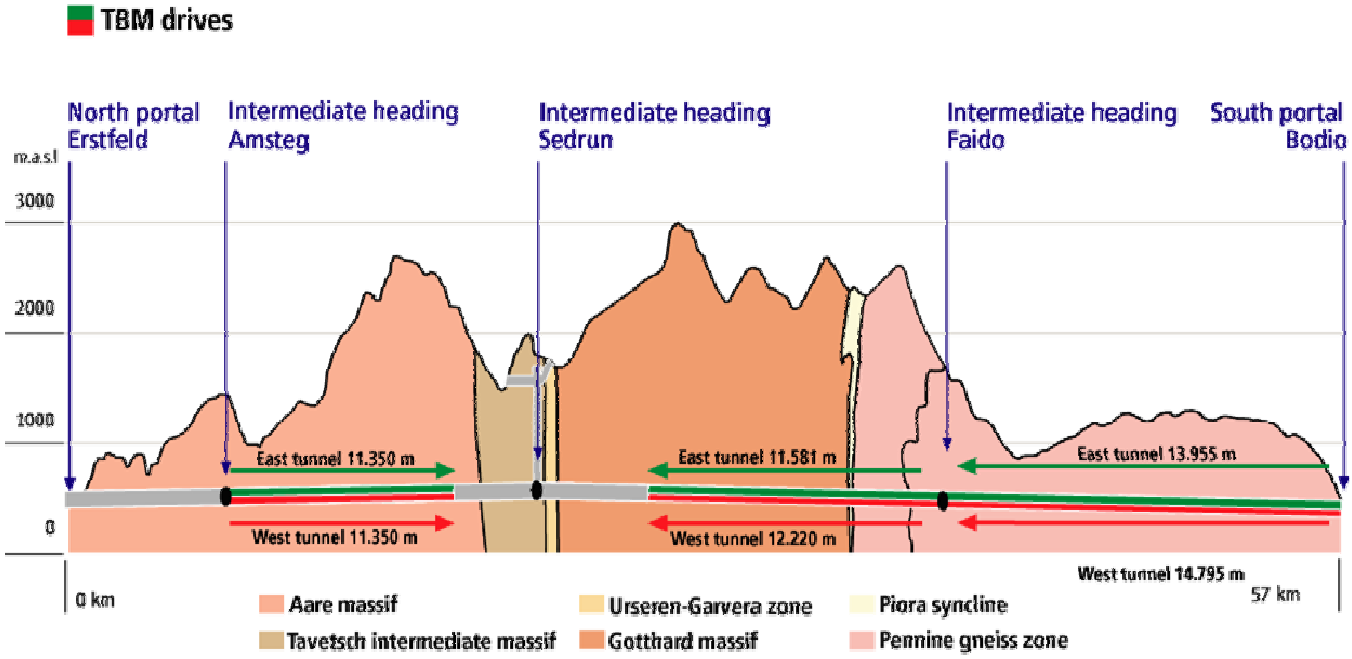
EXAMPLE OF EXCAVATION PLANNING
TUNNEL LYON-TURIN

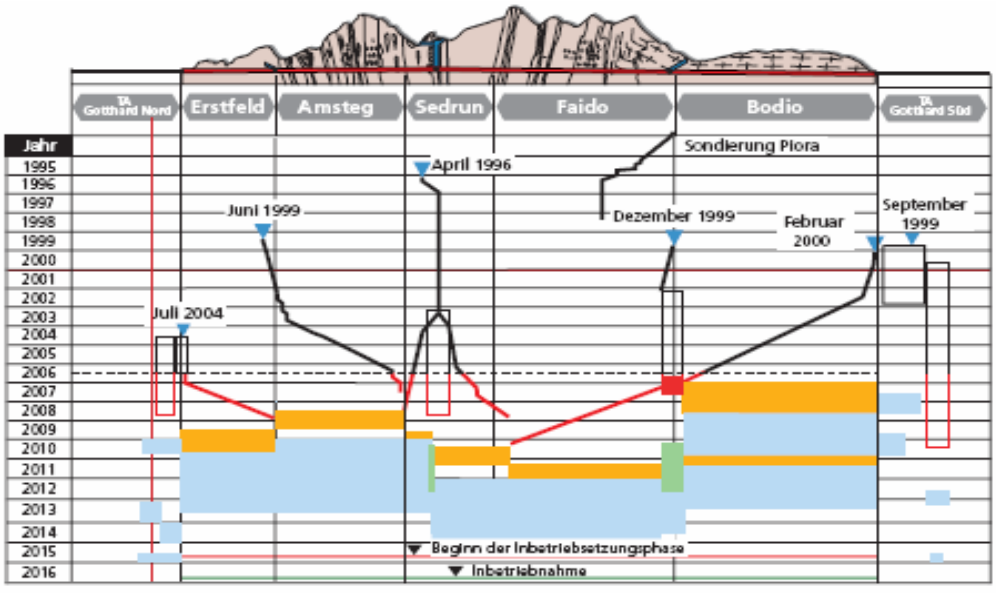




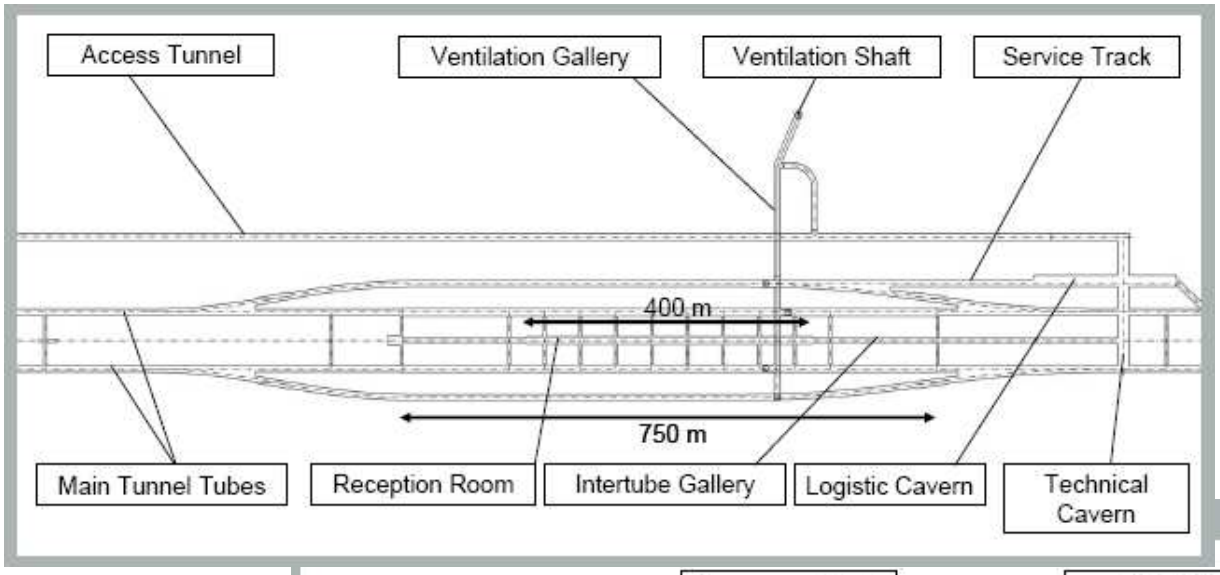
EXAMPLE OF EXCAVATION PLANNING – GOTTHARD BASE TUNNEL

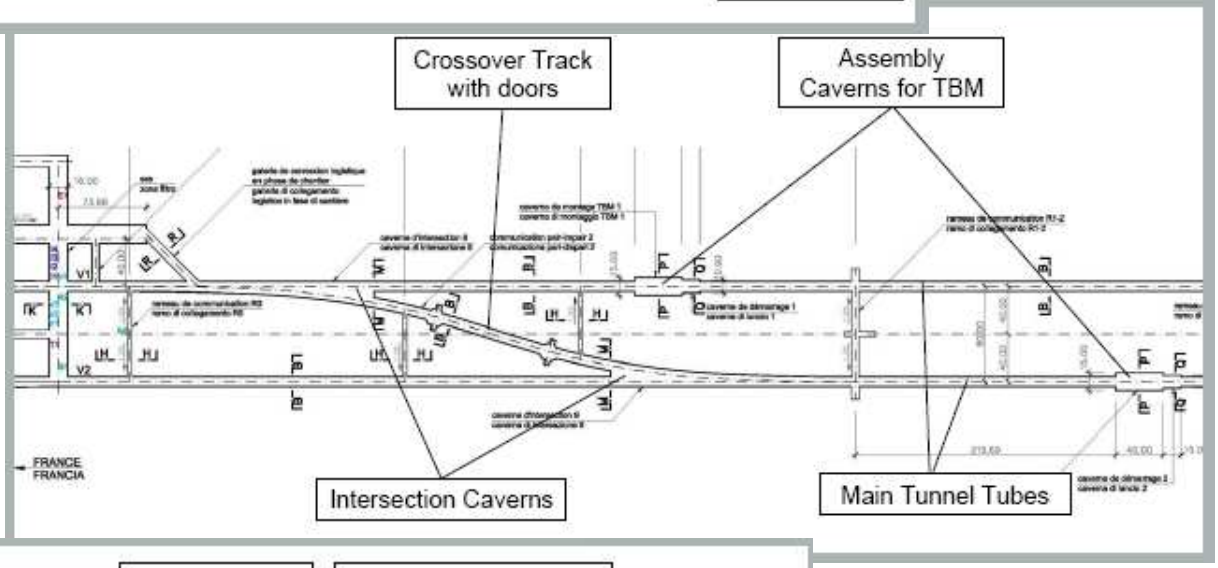


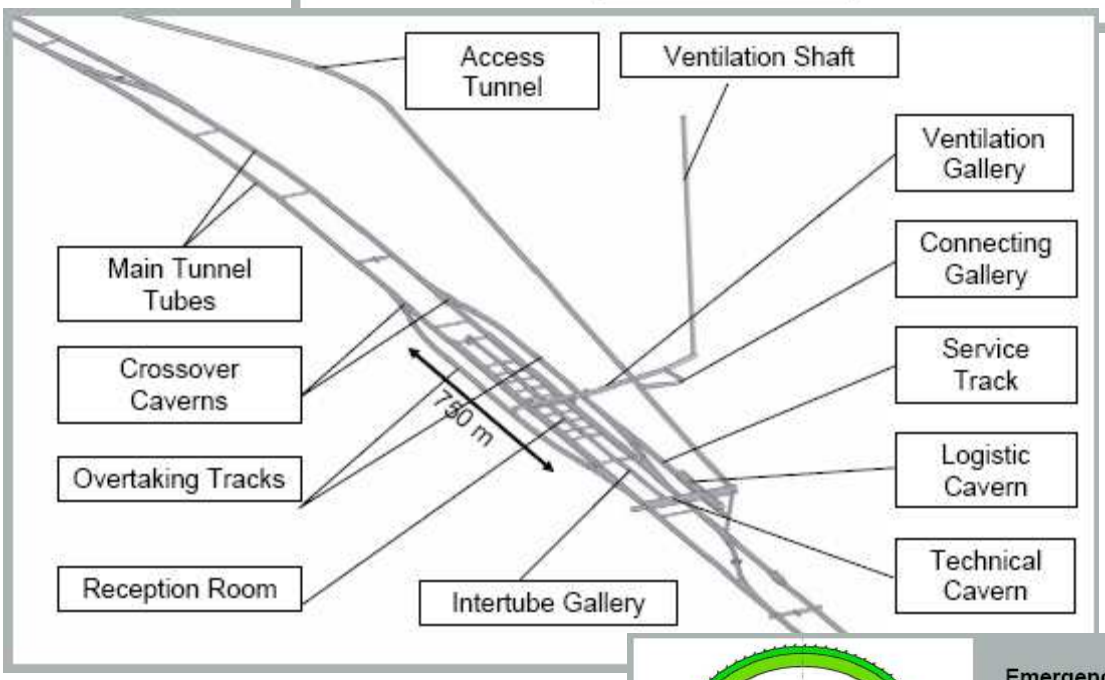


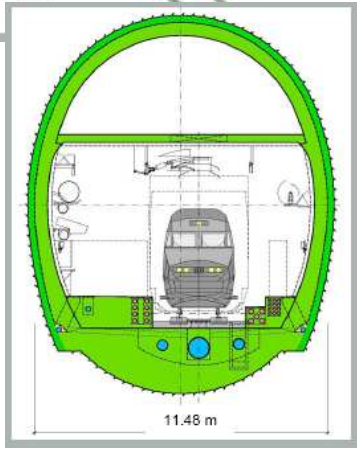


EXAMPLE OF MULTIFUNCTIONAL STATION





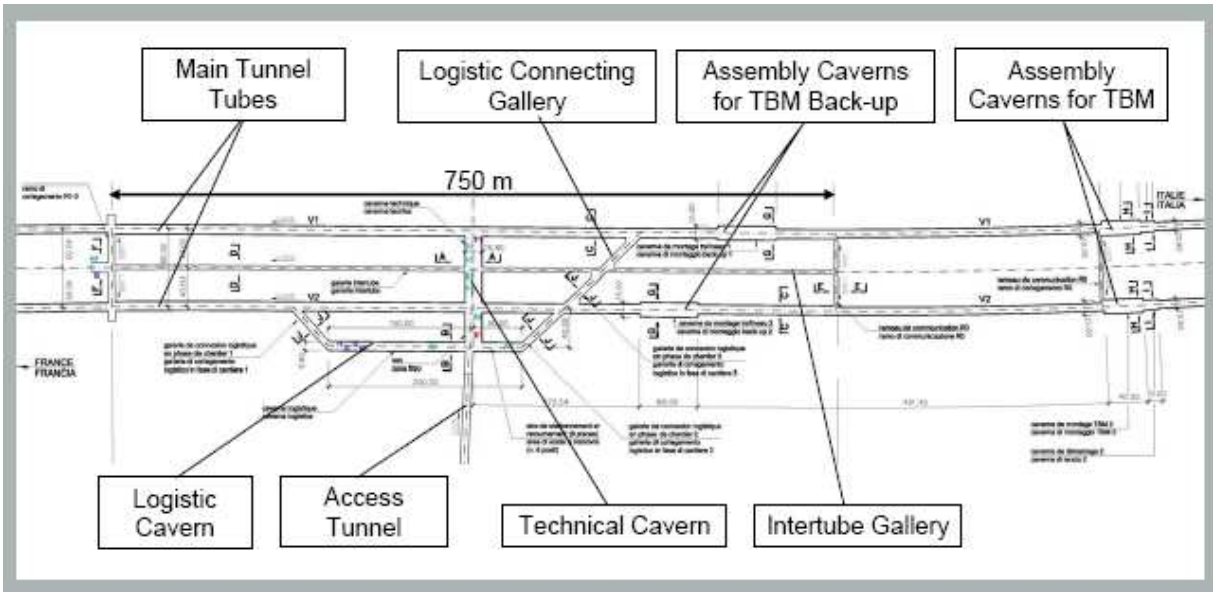


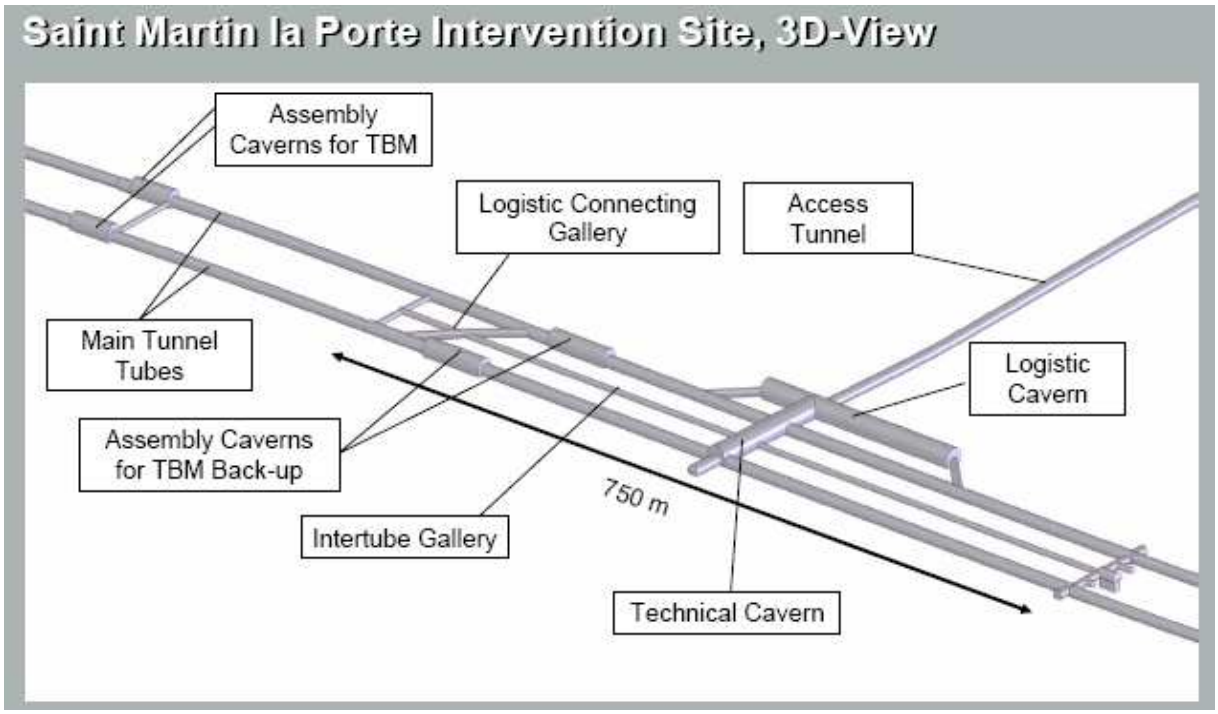


Emergency Halt (L = 750 m):

- Intermediate ceiling for smoke extraction
- Enlarged platform (width = 3 m)
- Clearance suitable for "Rolling Road"
- Umbrella Waterproofing, full water-proofing in case of sulphate-laden groundwater
- Lateral arch drainages
- Ground- and wastewater pipes
- Installations for air conditioning and ventilation of technical rooms in cross-passages
- Equipments for rail technology
- Safety elements

EXAMPLE OF JUNCTION ADIT-TUNNELS





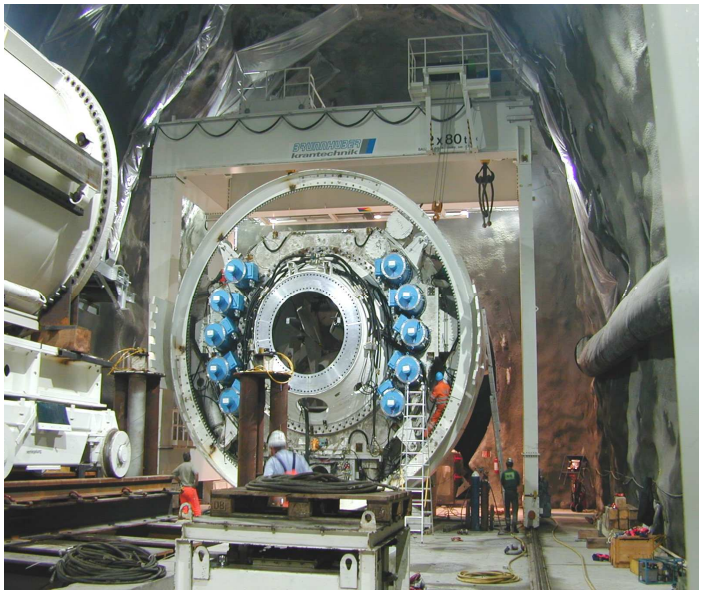
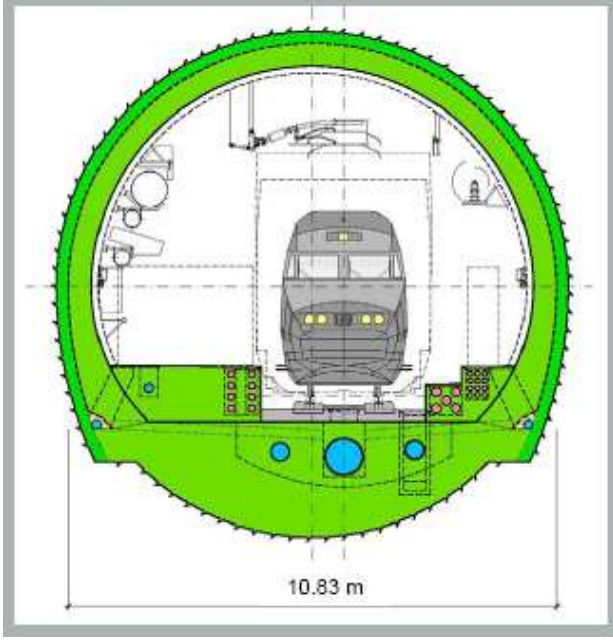


Figure of TBM assembly chamber

EXAMPLE OF JUNCTION ADIT-TUNNELS 2

Saint Martin la Porte Intervention Site, Cross-Section



Emergency Halt (L = 750 m):

- Enlarged platform (width = 3 m)
- Clearance suitable for "Rolling Road"
- Umbrella Waterproofing, full water-proofing in case of sulphate-laden groundwater
- Lateral arch drainages
- Underground- and wastewater pipes
- Installations for air conditioning and ventilation of technical rooms in cross-passages
- Equipments for rail technology
- Safety elements (handrail, emergency lighting etc.)

