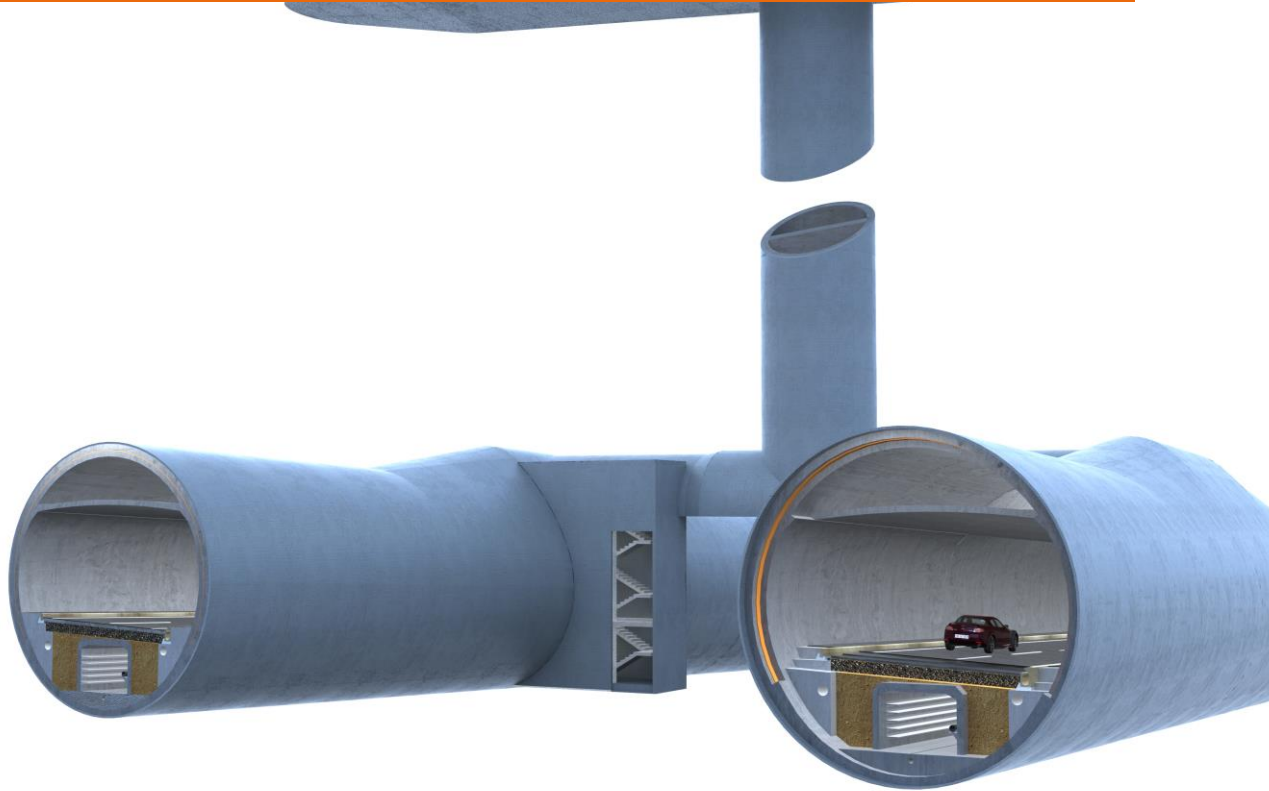


COMPLETE BYPASS LUCERNE



N02/N14

Bypass Lucerne, Switzerland

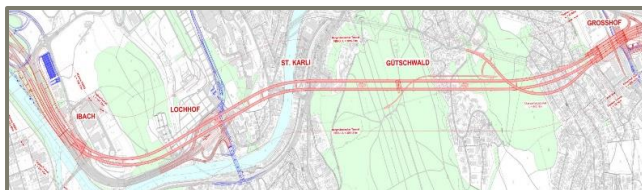
The connection point of the two highways A2 and A14 lies north of the city of Lucerne and runs through and in parts under the city of the agglomeration municipalities. The tunnel bypass is the core of the overall system and contains the two 2-lane tunnel tubes. The knots are located in the north in the Ibach area and to the south in the Grosshof area (AS Lucerne-Kriens).

Scope

- National road tunnel in direction traffic
- Tunnel tube north (FBNO): 3'016 m
- Tunnel tube south (FBSU): 3'061 m
- Cut-and-cover tunnel north: 151 m + 247 m
- Cut-and-cover tunnel south: 42 m + 25 m
- Operations centre Ibach, Grosshof
- Underground technical centres
- Emergency lay-by (widening)
- Intermediate ceiling
- Underground operation crossing
- SOS and hydrant niches
- Cross-connections (walkable and passable)
- Gütschwald ventilation centre with exhaust air shaft
- Overburden tunnel (connection Sonnenberg)
- Stacking basin at portal and low point

Amberg Services

- General project
- Final design and detail design (according to ASTRA)
- Overall project management
- Specialist planner tunnel construction / geotechnics
- Coordination of participating technical planner T/U, K, BSA
- Coordination of offices, authorities and municipalities



AMBERG FACTS

Contracted value JV

- Total in JV: approx. CHF 16 Mio.

Contracted value Amberg

- Total Amberg: approx. CHF 6.6 Mio.

Project Phases & Duration

- Project design TP 2/3: 2014 – 2016 (GP)
- Project design TP 2/3: 2017 – 2025 (AP, DP)
- Execution planned: 2027

Project details

- Mechanical and conventional tunnelling in the rock
- Soft ground tunnelling with partially low overburden to buildings and roads
- Construction aid measures (pipe umbrellas, injections, soil improvements)
- Underpass Reuss
- Intermediate attack St. Karli
- Shaft construction (Ø 8 m)
- Deep excavation pits
- Operations centres at portals and underground
- Implementation during operation, extensive construction phase planning
- Geotechnical dimensioning, statics
- Material management, loading station
- Comprehensive environmental regulations, inner-city, flood protection Reuss
- Preservation of evidence concept inventory
- Planning in 3D / BIM

CLIENT FACTS

Overall costs

- Total Amount approx. CHF 1.7 Mia (Stand 2019)

Overview project

- Subproject TP 2/3:
 - TP 2: Bypass tunnel and
 - TP 3: urban highway (incl. AS Luzern-Lochhof and tunnel Sonnenberg)

Bypass Tunnel

- length 2x ca. 3'000 m, directionally separated
- cross-section 134 m² (TBM), 129 m² (SPV)
- mining tunnel with cut-and-cover sections in soft ground and rock

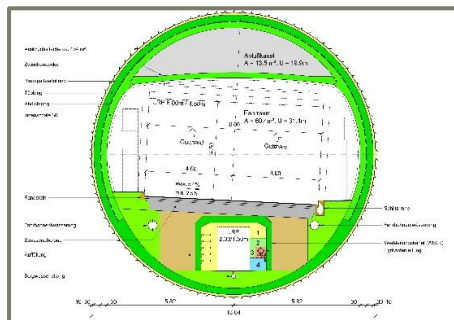
Geology

- Molasse (sand/iltstein, mergel)
- Weathered in the portal zones
- Soft ground in the Reuss crossing area

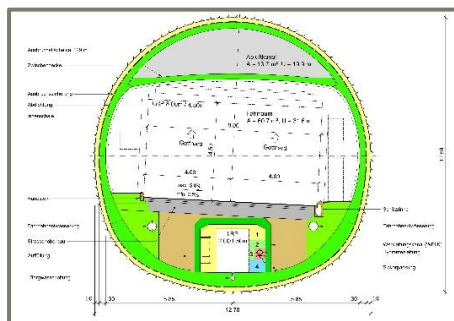
Contact Person

Federal roads office, Branch Zofingen
 Mr. Daniel Frey, project manager
 Tel.: +41 58 482 75 11
 eMail: daniel.frey@astra.admin.ch

Project overview TP 2/3



Standard profile TBM jacking



Standard profile SPV