

# PLANNING & DESIGN

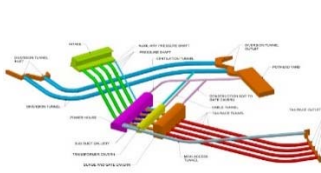
We are one of the world's leading engineering companies in underground infrastructure design with headquarters in Switzerland. For more than 50 years, we have been developing design and construction solutions in the fields of underground railway, road and metro tunnels, caverns and infrastructure galleries. Amberg Engineering specializes in innovative solutions for the subterranean space.

No matter whether it's a feasibility study, final design or construction for new or existing structures, our employees with their many years of experience, commitment and passion see to it that projects all around the world are a success.

We provide wide-ranging business activities from planning, design, site supervision, commissioning through to renewal and refurbishment of structures, interdisciplinary planning processes and project management to research and development.

## Our Expertise we offer to you are

- Geotechnical Engineering
- Structural Engineering
- Assessment and Rehabilitation of existing structures
- Ventilation and Safety
- Underground Space
- Nuclear Waste Management
- Site Supervision
- Project Management



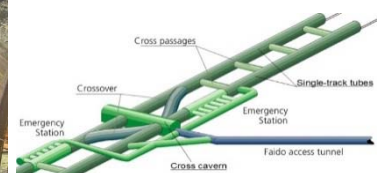
Vereinfachtes geologisches Profil



Rohschirminstallation



Unterteilung obere Paramentstollen



Schema der geplanten Anlage Faido MF

## Our Services

Our experts prepare the planning and carry out the design from A to Z across all phases of your project. We ensure your project is taken care of when it comes to Planning and Design of

- Geological surveys
- Geomechanical and structural model analyses
- Ventilation and safety technology
- Client assistance and project management

Depending on phase of your project, our services are applied project and customer relevant at its respective level of detail, especially when it comes to

- Integrated BIM Modelling with Geotechnical and structural 2D and 3D Modelling, comprising (dis)continuous numerical analysis, applying advanced modelling and simulation tools.
- Expertise is provided on thermal analysis of structures, evaluating temperature distribution in case of fire,
- Construction sequencing of geometrical complex structures.
- Digital planning in form of rapid engineering, information and data modelling, digitalization of inventory and the integration of BIM, GIS and geological information, resulting in the Development of efficient digital processes.

## We are active in

### Segments of underground infrastructure

- Rail, Road and Metro
- Hydro and Utilities
- Underground Space

### All types of underground structures

- Tunnels, Adits, Shafts and Galleries
- Caverns and Underground Space

### Geology & ground conditions

- Soft ground
- Squeezing ground,
- Swelling conditions,
- Fault zones
- Water and gas bearing ground

### Excavation methods

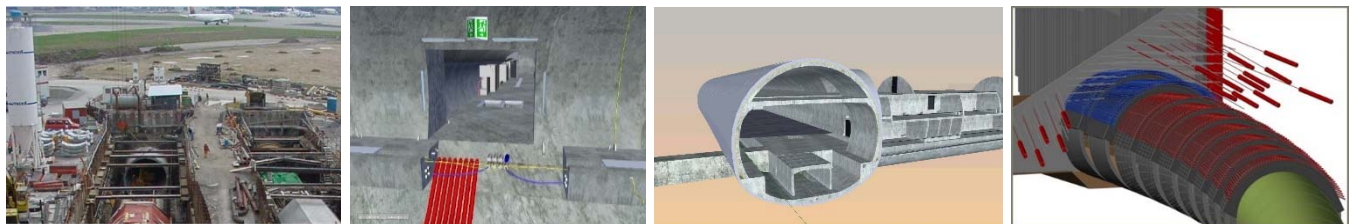
- TBM
- Drill & blast
- NATM
- Mechanically assisted excavation (road headers, excavators, rippers, etc)

## Our Competence

- Comprehensive experience in underground design, from early feasibility to final detailed design, mastering all phases of the lifecycle of underground infrastructures
- Site supervision to support you all the way
- Smart and feasible structural and geotechnical engineering solutions
- Developing big data and cloud-based applications to enable more efficient processes and working methods
- Clever, cost sensitive, value added alternatives

## Your Benefits

- A single competent partner
- Short decision-making processes enabling quick and competent reactions to changed conditions or unexpected events.
- The close collaboration among all Amberg Group companies– Amberg Technologies, Amberg Loglay and the Hagerbach Test Gallery – enables Amberg Engineering to meet customer needs even beyond its specific scope of expertise.
- Whether exploratory work, measuring technology, construction site logistics or the development of construction technologies – our clients benefit from the synergies within the Amberg Group.



## Selected References

Project	Gotthard Base Tunnel Switzerland	Project	Nagra Switzerland
Services	Project planning and design in engineering joint venture Stability analysis and proof	Services	Overall BIM coordination, Structural design of all underground structures
Client	Alp Transit Gotthard AG	Client	Nagra Nationale Genossenschaft für die Lagerung radioaktiver Abfälle
Project	Gubrist 3 <sup>rd</sup> Tunnel Switzerland	Project	Metro Delhi India
Services	Design of all underground structures, Design of ventilation system	Services	Design of segmental tunnel lining with earthquake load, Design of station/tunnel interfaces
Client	FEDRO Federal Roads Office, Winterthur Branch	Client	Italian Thai Development Public Company Ltd
Project	Berlin Metro U5 Germany	Project	Brenner Base Tunnel Austria
Services	Conceptual and tendering design, Implementation planning	Services	Basic Design, Final Design
Client	BVG Berliner Verkehrsbetriebe	Client	Galleria di Base del Brennero

**We are pleased to advise you in detail.**

**Talk with us.**



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