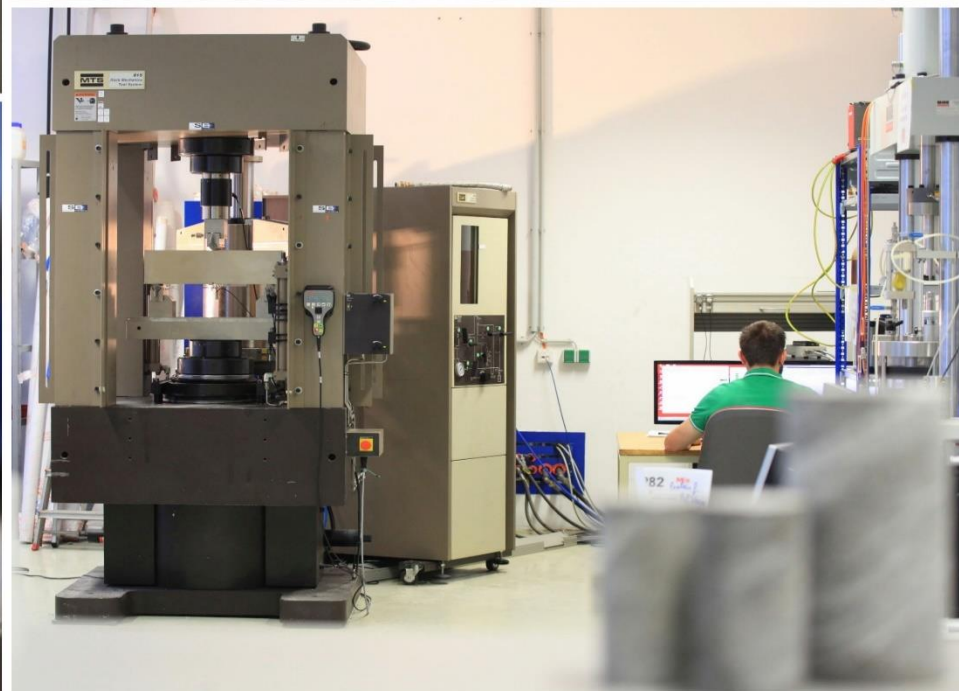
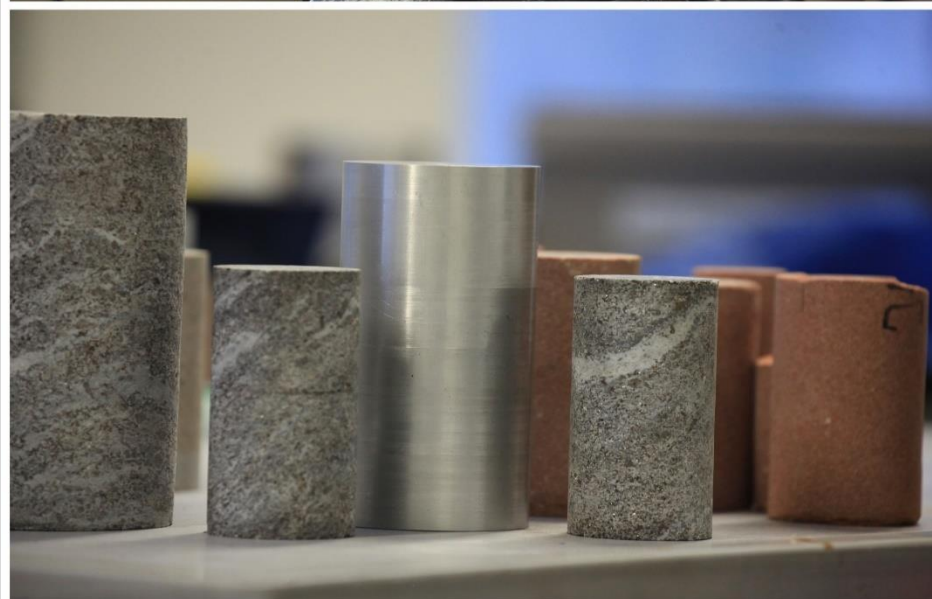


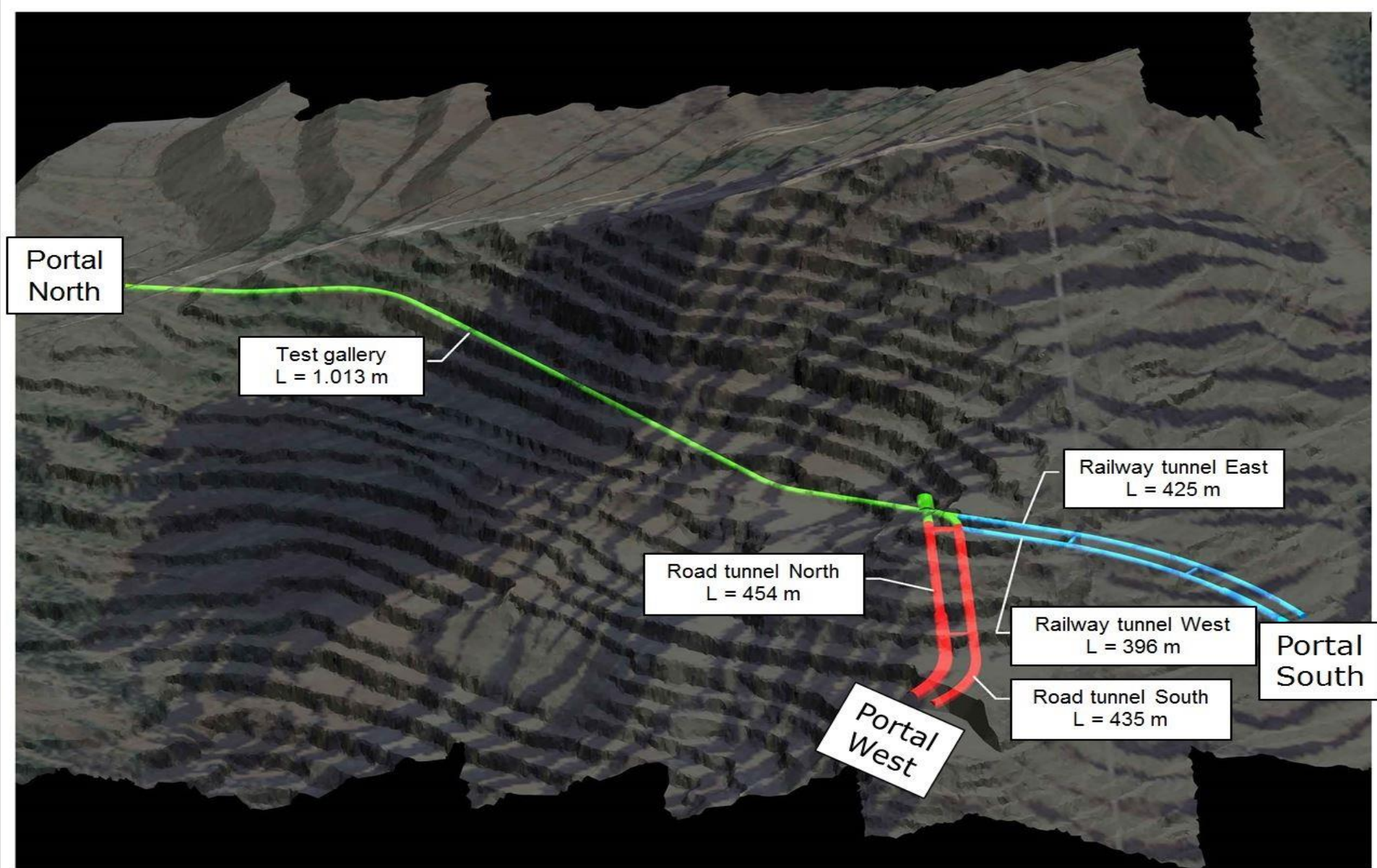


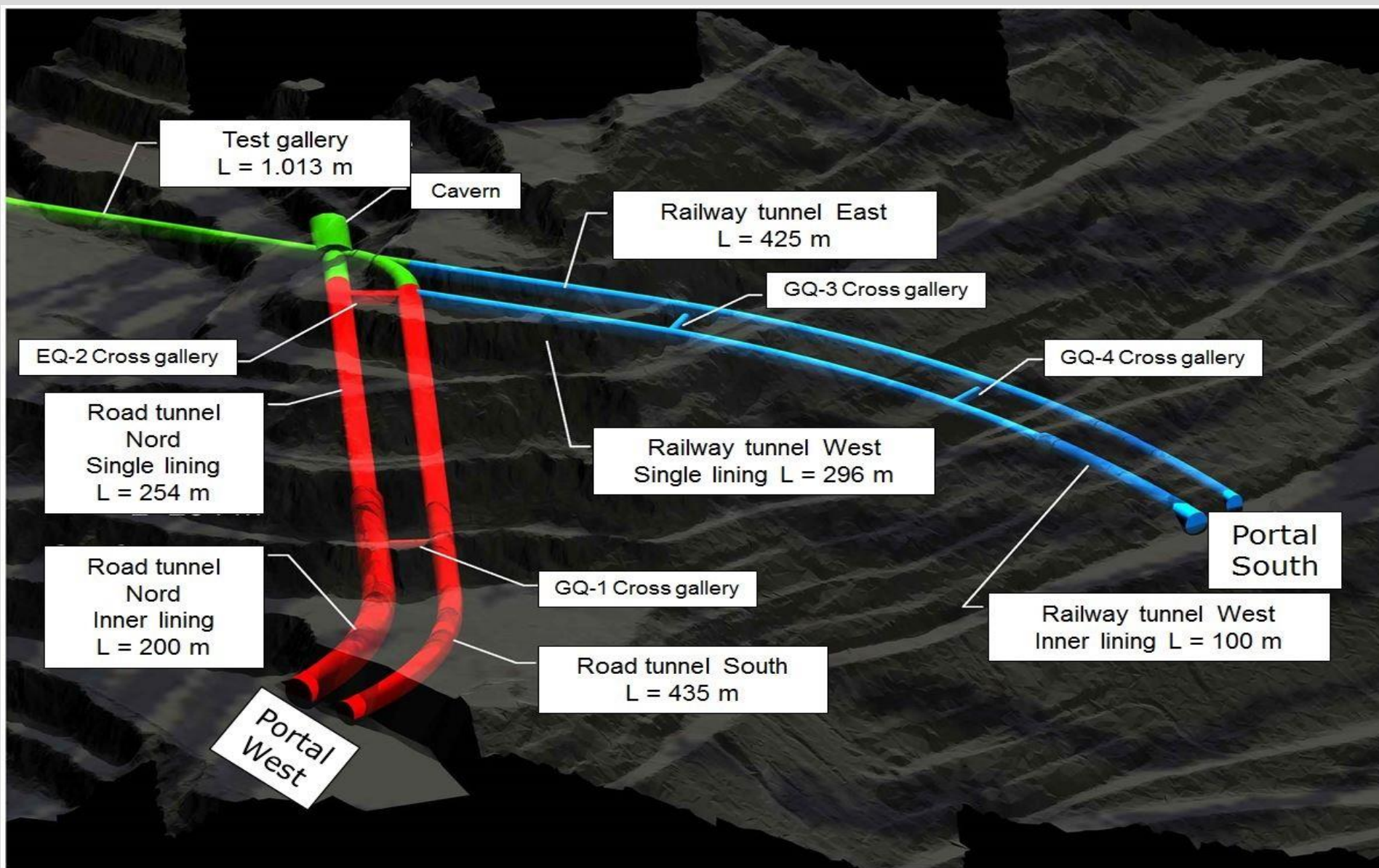
Research@ZaB – Research at Zentrum am Berg



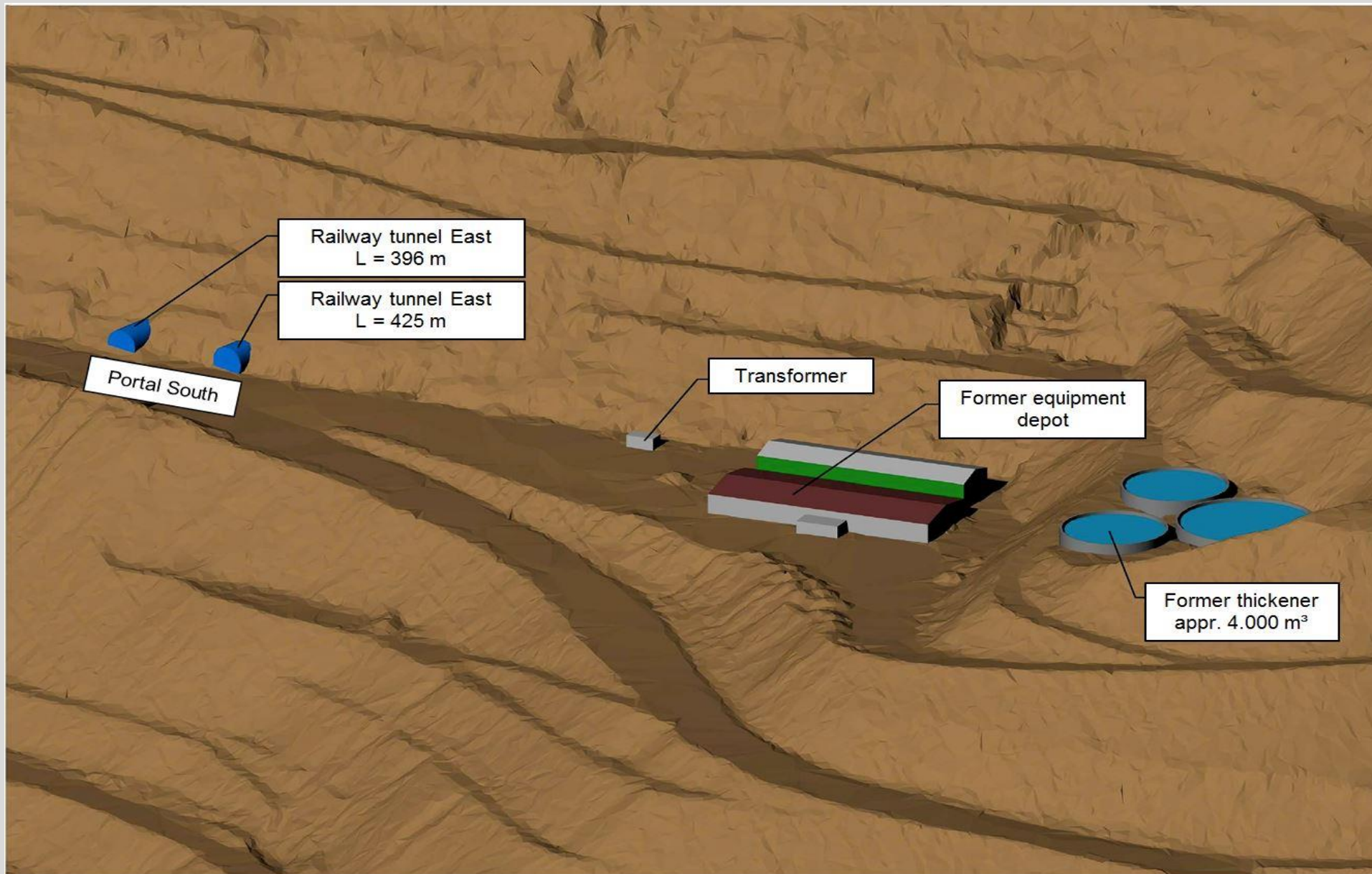
- Research, development and seminar centre for the construction and operation of underground facilities (tunnels, underground train systems, underground mines, underground power plants, deep drilling systems for the petroleum industry)
- Research and training centre for emergency organisations
- Training and education centre for the service and maintenance personnel as well as for users of the road and railway infrastructure





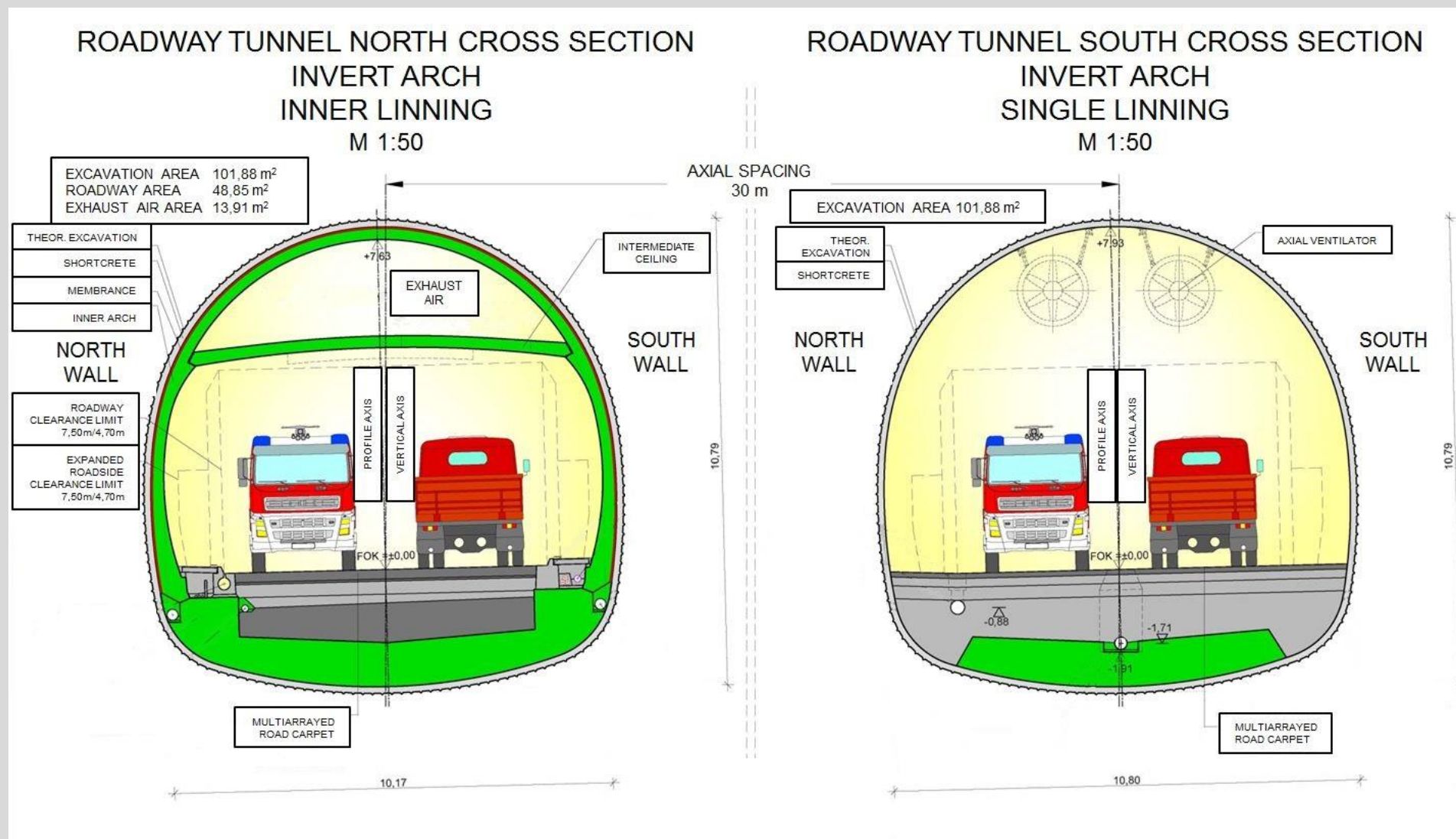




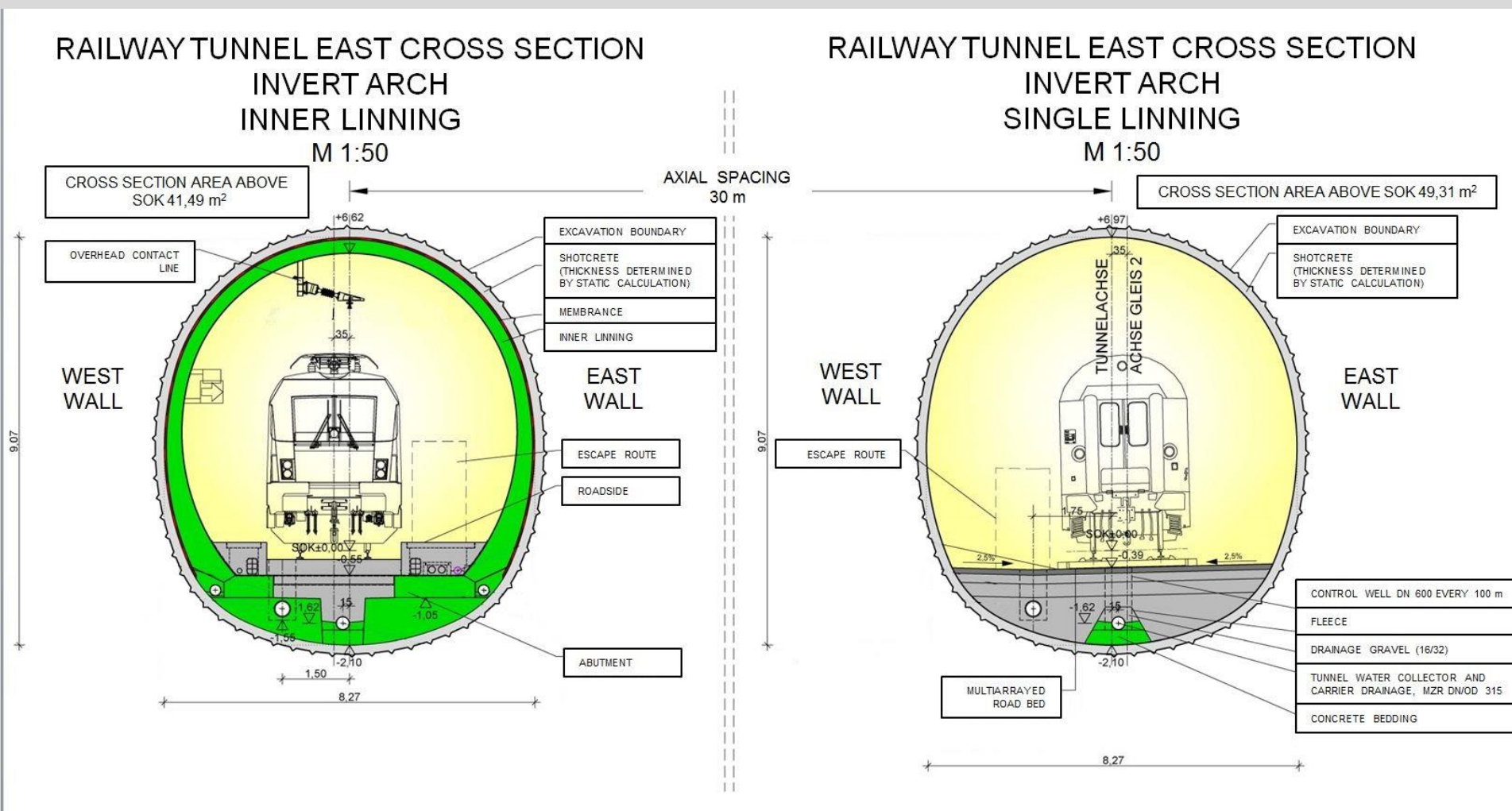




Cross Sections at ZaB



Cross Sections at ZaB





Research topics

| Preliminary Design | Tender Design | Construction | Operation | Maintenance & Repair |
|--------------------|--|--------------|-------------------------------------|----------------------|
| | Geology und Geophysics | | | |
| | Geothermal energy | | | |
| | NATM and TBM technology, blasting, support measures | | | |
| | Underground mining technology, construction technology | | | |
| | Care for ressources; benefits for excavated material, recycling | | | |
| | Concrete technology (cement, coatings, etc.) | | | |
| | Technical equipment like aerodynamics, ventilation, automation technology, lighting, safety and control techniques, etc. | | | |
| | ICT-applications, e.g. optoacoustical ICT, automation software | | | |
| | Measurement and analysis technology | | | |
| | Numerical simulation for all special underground fields | | | |
| | Ecological balance and environmental research | | | |
| | Research in consideration of influences and effects on climate and environmental changes | | | |
| | | | Evaluation, certification | |
| | | | Security research, fire tests, etc. | |
| | | | Training and seminars | |

USP of Research@ZaB

Research@ZaB is an **unique infrastructure** throughout Europe (EU Core-Facility):

- **scientific** and **applied research**
- **real environmental circumstances** in conjunction with university
- **direct practical relevance**
- **know-how transfer** through coordination of a **neutral** and **independent** body.

The Research@ZaB project is an invitation to **national** and **international** companies, **scientific** associations (university as well as non-university) and **public institutions** for a joint implementation of research (e.g. EU projects).

Location of Research@ZaB

Research@ZaB is located in Eisenerz, Styria, a mining area.

Advantages include:

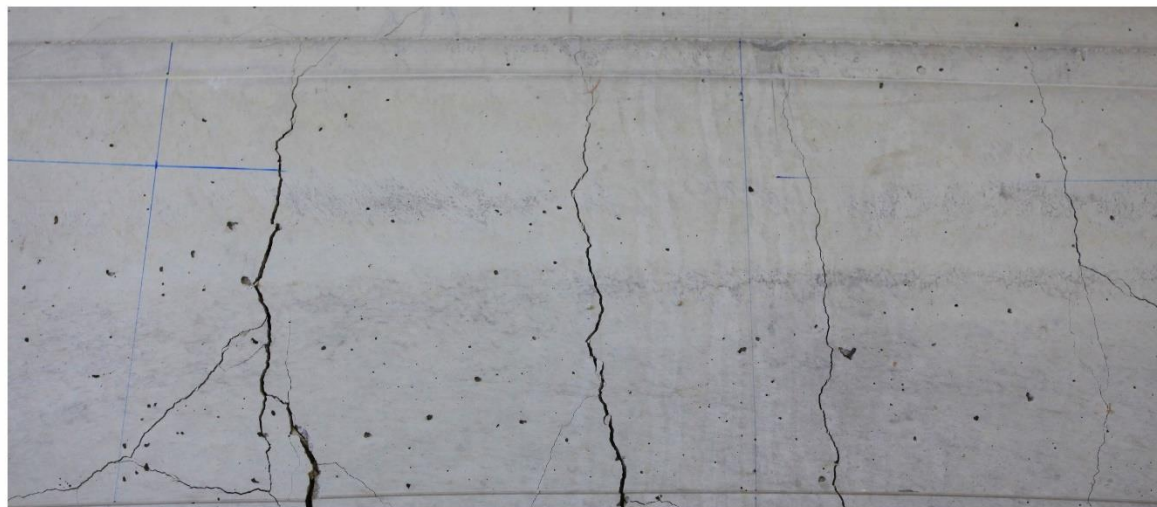
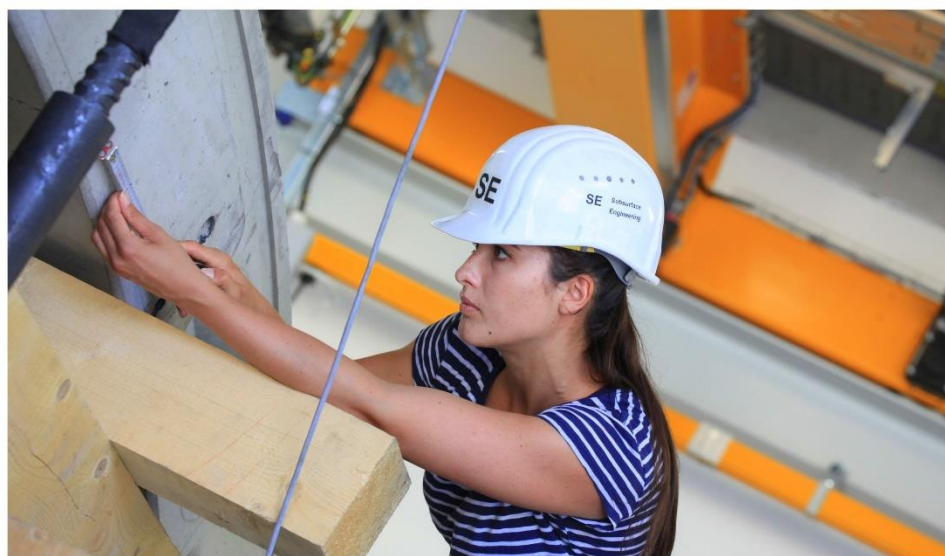
- Research and development in an active mining area close to Montanuniversität Leoben
- Long-term and sustainable use of existing tunnel systems
- Environmental circumstances and scale 1:1
- Unique framework for engineering research:
 - Constant climate conditions (humidity, temperature), ideal for long-term tests
 - Connected to rail
 - Use of existing infrastructure

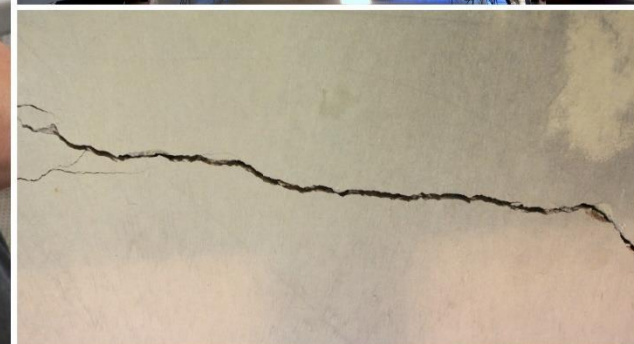
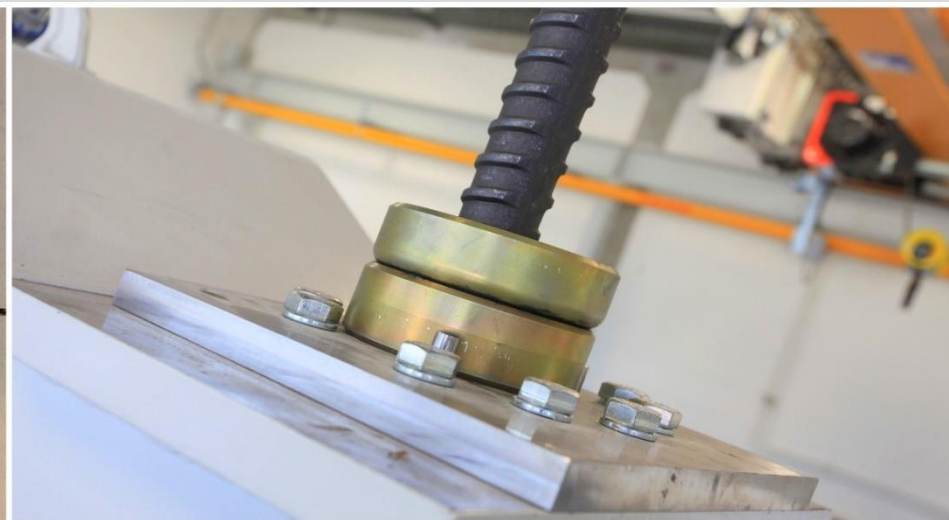




Test Facility for segmental linings















ZaB site - visits with international students



Students from Wuhan, China



NATM Master Students from 18 countries





Presslergallery

Training and seminar centre for

- Researchers
- Academically educated personnel in the area of underground mining and tunnelling
- (international) students
- Service and maintenance staff
- Companies
- User of road and rail infrastructure
- Relevant industry involving their suppliers



Organisation of ZAB

- Research@ZaB is an organisational unit of Montanuniversität Leoben.
- This ensures an independent and neutral position and also a research organisation which is a top priority for many key actors from national and international scientific and economic bodies.
- This guarantees the long-term management of the large-scale research stability and sustainability.
- There is also a co-operation and networking with other austrian technical universities – TUG und TUW („TUAustria”).



RESEARCH@ZAB
Research at Zentrum am Berg

Welcome to a fruitful cooperation!

Contact:

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