



Excellence in tunnel engineering

—
Consulting, planning, realisation
—

Excellence in tunnel engineering

Tunnelling remains one of the great challenges for engineers. Today, tunnels are built mainly in densely populated metropolitan areas. This involves the highest safety and environmental standards, complex construction processes and logistics. Basler & Hofmann is a specialist for the most demanding tunnel projects.

Our speciality: tunnel construction under complex conditions

Basler & Hofmann has decades of experience in tunnel construction under complex conditions – when it comes to both mechanical and conventional tunnelling, bedrock and loose soil, and difficult hydrological conditions. Time and again, our projects have expanded the limits of what is technologically possible. We have built tunnels through difficult geology underneath busy places and buildings, sensitive infrastructures and bodies of water. Many years of experience and our ongoing willingness to develop innovations are the cornerstones of our success.

Underground mining services:

- Feasibility studies, planning and project development for road and rail tunnels, tunnel systems, caverns and precautionary construction measures
- Assessments of conditions, repair and restoration of underground constructions – without disrupting ongoing activities
- Multidisciplinary, all-encompassing management of large-scale infrastructure projects
- Expertise, safety and risk assessments
- Site supervision and client support

Integrated risk management

Tunnelling in inner-city areas requires a highly sophisticated risk management strategy. Our safety practices are based on scientific research and are tried-and-tested in practice. This includes the safety plan, the emergency organisation as well as the monitoring and alarm concept.

All disciplines covered by one team

At Basler & Hofmann, all technical and specialist disciplines relating to tunnel construction are found under a single roof and involved in the project. For example, specialists in rail and road construction, utility lines, environmental regulations, traffic, safety, vibration and fire safety can be brought in at any time. Our goal is to provide integrated solutions for which every detail has been considered well in advance. The benefit for our customers: coordination is a constant, ongoing process within our team. There is one point of contact for all issues.

1 Fäsenstaub Tunnel (CH)

Two lane road tunnel in loose soil in densely built urban area and low overburden.
Civil Engineering Authority Schaffhausen.
Total costs: € 170 m.

2 Zimmerberg Base Tunnel (CH)

The 10.7 km long double track highspeed tunnel in rock, loose soil and partly underneath the groundwater level was excavated by a hardrock and a mixshield TBM with 12.4 m diameter each.
SBB Swiss Federal Railways. Total costs: € 480 m.

3 Wienerwald Tunnel (A)

First TBM drive for a railway tunnel in Austria.
11 km long double tube highspeed tunnel in difficult geological conditions. The Wienerwald Tunnel is a key element in Austria's highspeed railway network.
ÖBB Infrastruktur AG. Total costs: € 350 m.

4 Weinberg Tunnel (CH)

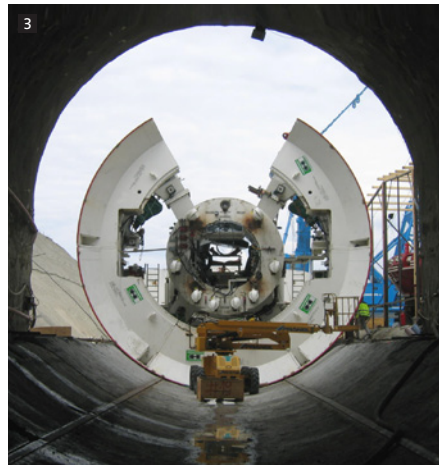
The 4.5 km long Weinberg Tunnel is part of the New Zurich Crossline. It passes closely underneath the river Limmat, the most frequented places in the city and highly sensitive buildings.
SBB Swiss Federal Railways. Total costs: € 360 m.

5 Koralm Tunnel (A)

The 33 km long Koralm double tube highspeed railway tunnel is Austria's largest ongoing project to extend the national network.
ÖBB Infrastruktur AG. Total costs: € 820 m.

6 Flims Bypass (CH)

The 4520 m long two-lane road tunnel bypasses Flims, a winter sports resort in the Swiss alps. Difficult geological conditions like a loose bedded landslide section and an open karst system with water ingress had to be mastered.
Civil Engineering Authority Graubünden.
Total costs: € 230 m.



Integrated solutions

At Basler & Hofmann, our expertise in tunnel construction is embedded in a network of related disciplines. Our clients benefit from broad-based engineering, planning and consulting services with high environmental and quality standards.

A wide range of competencies

Basler & Hofmann is an independent engineering, planning and consulting firm working in the fields of construction, infrastructure and environment. We employ people from more than 30 disciplines. Our experience has shown that viable solutions often require more than just a single specialist. The same is true when it comes to tunnel construction. Our tunnelling experts work in teams with professionals in the fields of rail and road construction, special foundation engineering, water and environmental services – to name just a few.

A partner you can depend on

Since being founded in 1963, Basler & Hofmann has grown steadily while retaining its independence as a family-run company. Today, the Group has more than 500 employees and operates offices in Switzerland, Germany, Slovakia and Singapore.

Pioneers in quality and environmental management

In 1994, we were the first engineering firm in Switzerland to receive ISO 9001 quality certification. The introduction of our ISO 14001-compliant environmental management system is yet another example of what makes us a pioneer.

Well-connected in the industry

We are members of SIA, usic, Europengineers and the Swiss Tunnelling Society (STS).

Structural engineering

- Structural design
- Façade engineering
- Glass structures
- Steel engineering
- Structural dynamics

Civil engineering

- Ground engineering and geotechnics
- Site infrastructure
- Utilities provision
- Special foundation engineering
- Landfill engineering

Tunnelling

- Underground engineering
- Cut-and-cover tunnels
- Rail tunnels
- Road tunnels
- Gallery construction
- Caverns

Transportation engineering

- Alignment
- Roads and highways
- Track and railway design
- Bridge design
- Railway technology

Energy

- Building physics
- Energy efficiency
- Photovoltaics
- Low-energy buildings
- Renewable energy

Water

- Public health engineering
- Water treatment
- Water pollution control
- Hydraulic engineering
- Flood protections
- Hydropower

Safety and security

- Risk analysis and safety management
- Prevention of major chemical accidents
- Occupational health and safety
- Seismic design
- Protective asset design
- Biosafety

Development and management

- Property management
- Site development
- Education building development
- Business process engineering

Operation and maintenance

- Asset management
- Land surveys
- Site monitoring
- Geographical information systems
- Geodata management
- Technical and environmental due diligence

Consulting

- Building/project owner consultant
- Master planning
- Expertise
- Legal services
- Communications consultancy

Urban transportation

- Planning and urban design
- Airports
- Railway stations
- Train control systems
- Logistics

Environmental engineering

- Environmental management
- Vibration and noise protection
- Soil and contamination
- Asbestos and building contaminants
- Environmental chemistry
- Environmental technology

Building services

- Mechanical, electrical and plumbing engineering
- Building integration and controls
- Operational enhancements

Project teams

Basler & Hofmann provides a specialist technical team for every project. All disciplines necessary to achieve the best solution are represented.



Excellence in tunnel engineering

Consulting, planning, realisation

Our strengths

Basler & Hofmann specialises in challenging tunnelling projects in urban areas and under difficult geological conditions:

- Decades of experience in both conventional and mechanical tunnelling
- Integrated planning involving all technical and specialised disciplines in a single project team
- Comprehensive range of services: from feasibility studies to construction site management
- A specialist in integrated risk management
- A central point of contact for our customers