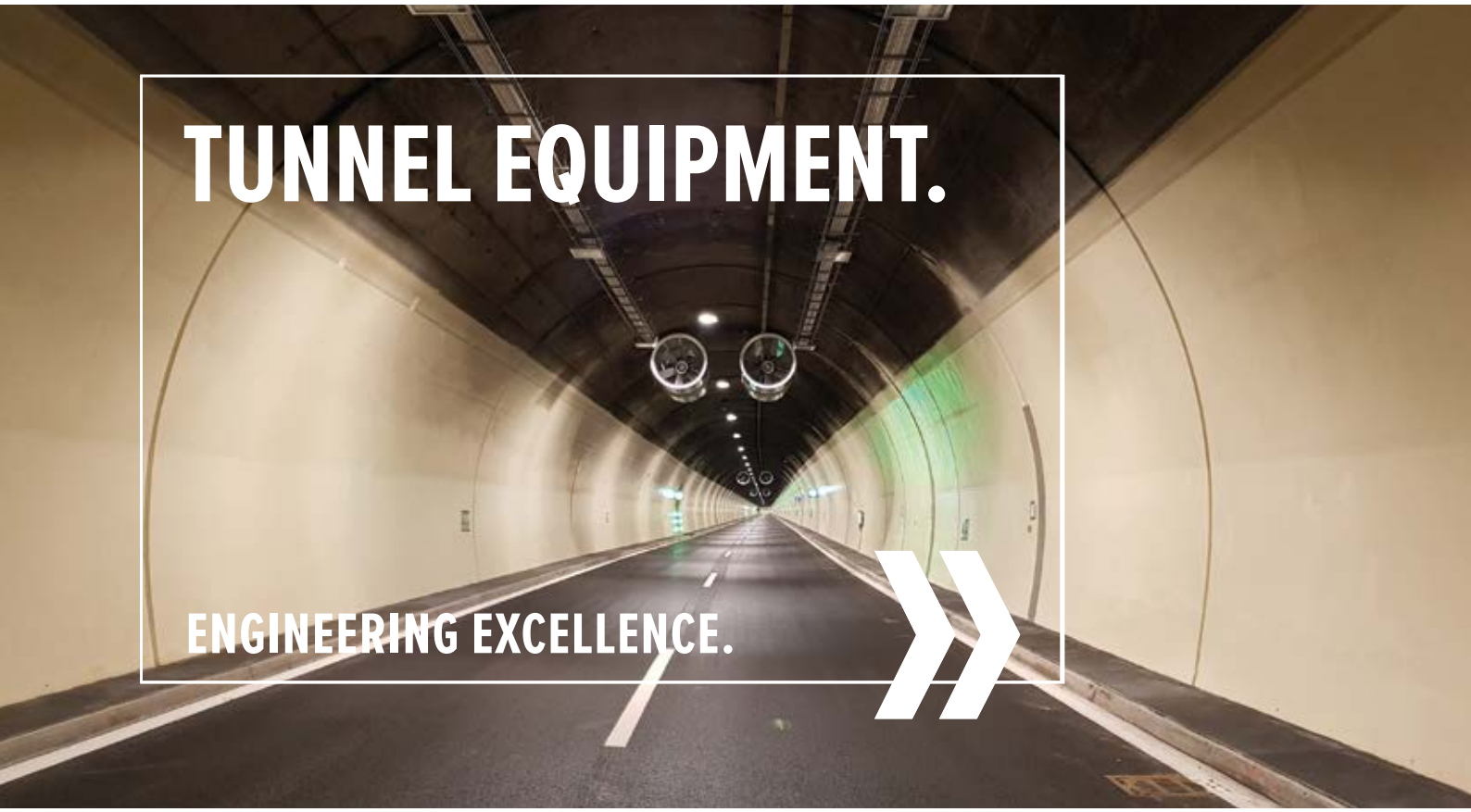
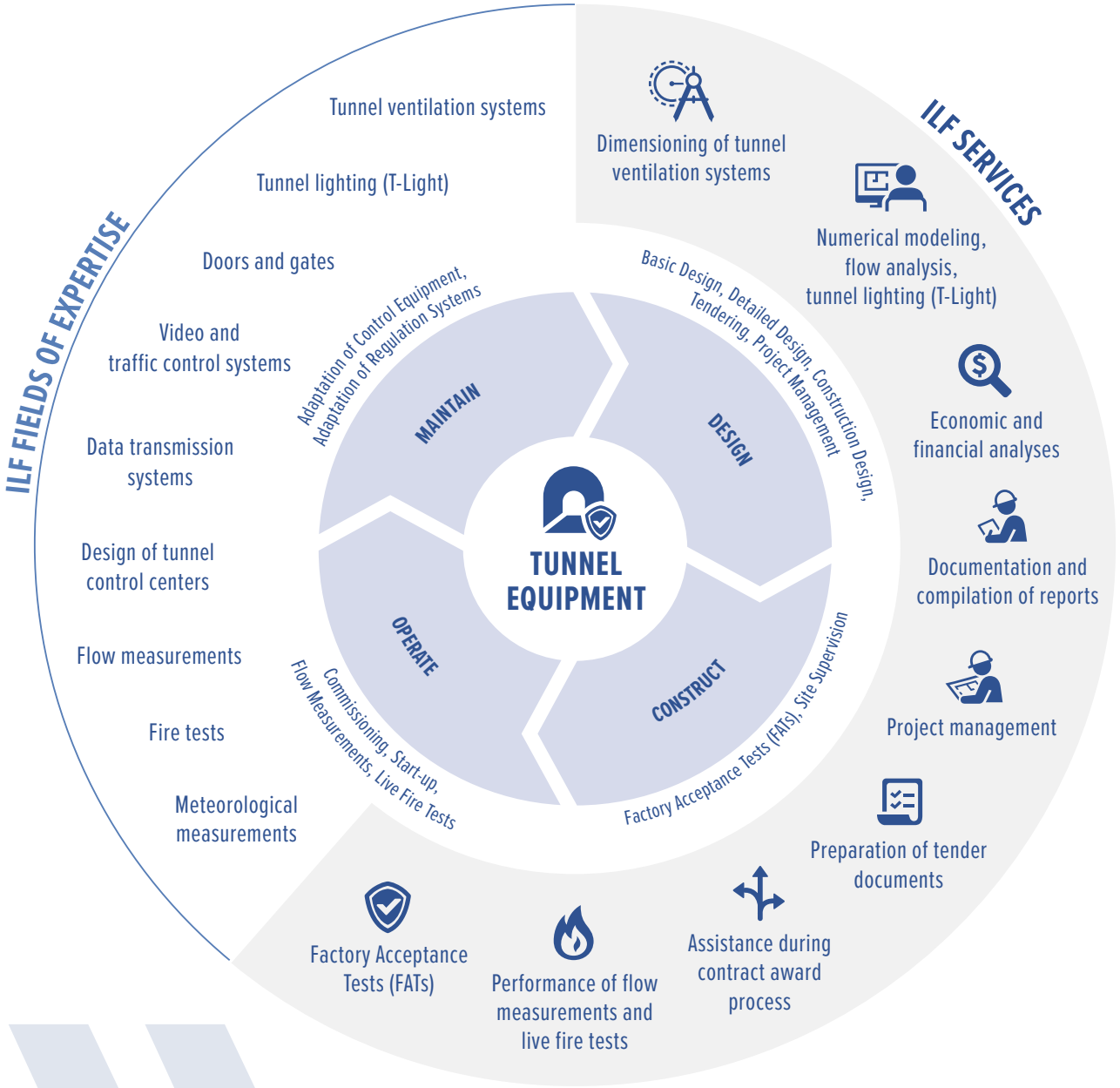


ILF
CONSULTING
ENGINEERS

TUNNEL EQUIPMENT

Ever longer tunnels, increasingly stringent safety requirements and stricter environmental regulations lead to growing demands being placed on the equipment installed in tunnel structures. These demands and the requirements of tunnel owners and operators, with regard to economic efficiency, energy efficiency and state-of-the-art technology, are to be taken into account during all stages of the design, construction and commissioning process. Having worked on more than 250 road and rail tunnel projects worldwide, ILF is an experienced partner for making sure all the demands and requirements of the respective projects are met from project design to project handover.



250 TUNNEL EQUIPMENT PROJECTS (FIRE LIFE SAFETY SYSTEMS)
IN OVER 50 COUNTRIES

WWW.ILF.COM/BUSINESS-AREAS/TRANSPORTATION-URBAN-SPACES/TUNNELS-CAVERNS/TUNNEL-EQUIPMENT/

For more than five decades, ILF has been involved in the interdisciplinary planning and design of tunnel structures and underground train stations, with the design of electromechanical equipment also playing an important role. Tunnel ventilation in particular is a central and safety-relevant aspect, which partially determines the dimensions of tunnel structures.

The earlier air flow aspects are quantified, the more efficiently and cost effectively the resulting structural and electromechanical requirements can be coordinated with each other. Operation and safety components such as energy supply, tunnel lighting, traffic control, communications and safety equipment, tunnel control systems, auxiliary systems as well as water and wastewater systems are also part of ILF's portfolio, enabling the complete range of tunnel equipment to be designed from a single source.

"Client-oriented design of tunnel equipment, which redefines state-of-the-art development, paves the way for safe travel through underground structures for decades to come."

Reinhard Gertl, Department Manager
Mechanical Engineering

PROJECT HIGHLIGHTS

Tunnel ventilation

- Arlberg Tunnel (15.5 km), Austria
- Follo Line (22 km), Norway
- Gubrist Tunnel (3 tubes, 3.4 km), Zurich Northern City Bypass, Switzerland
- U1 Underground Railway System (6 underground stations), Vienna, Austria
- Underground Railway System (11 underground stations), Munich, Germany

Electromechanical equipment

- 6 new tunnels on the A 44 Motorway – Hirschhagen Tunnel (4.2 km), Boyneburg + Holstein Tunnels (each 1.6 km), Bubenrad Tunnel (0.6 km), Dachsloch Tunnel (0.25 km), Alberberg Tunnel (0.45 km), Germany
- Liefering Tunnel, rehabilitation of tunnel equipment, Austria
- Langen Tunnel, rehabilitation of tunnel equipment, Austria

Site supervision/construction supervision

- Arlberg Tunnel (15.5 km), Austria
- Wald Tunnel (2.8 km), Austria
- Lötschberg Base Tunnel (34.6 km), Switzerland
- Mount Baker Ridge Tunnel (1.04 km) and Mercer Island Tunnel (340 m) on the Interstate 90 (MBRT & MIT I-90), USA

Tunnel ventilation

Electromechanical equipment

Site supervision/Construction supervision

Flow measurements

CONSULTING
ENGINEERS

www.ilf.com

Rev_0