



# INFRASTRUCTURE SAFETY PLANNING.

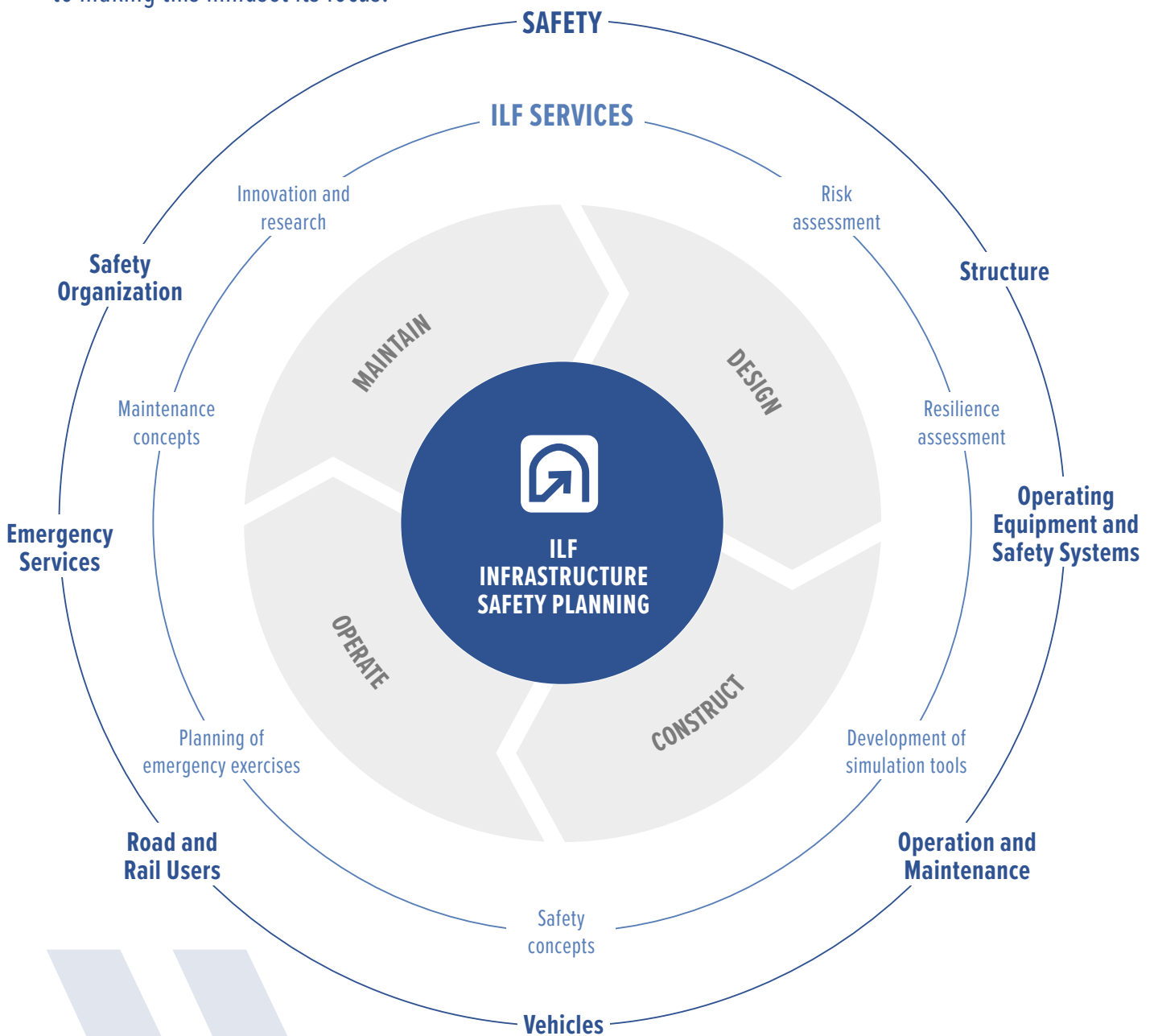
ENGINEERING EXCELLENCE.



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# INFRASTRUCTURE SAFETY PLANNING

Modern society has high expectations regarding the safety and reliability of technical systems, and often assumes that they provide full protection against hazards that pose threats to human life, the environment and material assets. This assumption of absolute safety is however unrealistic. A more realistic mindset towards safety would be to concentrate on identifying, minimizing and managing residual risks. As one of the leading consulting firms worldwide in the area of safety management for traffic and transport infrastructure, and especially underground facilities, ILF is committed to making this mindset its focus.





A holistic safety planning approach is key to the formulation of an integrated safety concept, with defined safety objectives laying the foundations for a systematic identification of hazards and analysis of risks. Whilst regulations and guidelines form the basis for safety planning, risk assessment allows safety standards to be quantified and residual risks to be presented in a transparent way. Risk assessment is thus particularly well suited for evaluating the effectiveness of safety measures, with the overall objective being to prevent and/or manage incidents through the definition and adoption of appropriate measures.

Drawing on its wealth of international project experience, and its European-based network of partner companies, authorities and universities, ILF has succeeded in establishing itself as one of the leading consulting firms in the field of traffic and transport infrastructure safety.



*“Our Tunnel Risk Model (TuRisMo) offers a pioneering approach to quantitatively assessing safety measures in tunnels.”*

Bernhard Kohl, Tunnel Safety Expert

## PROJECT HIGHLIGHTS

### Risk assessments

- Safety standards for railway systems, Austria
- Congestion risk in the Waterview Tunnel, New Zealand
- Risk of trains and ships colliding with bridges, Austria
- Risk-based choice of ventilation system for the La Linea Tunnel (8.7 km), Columbia
- Transport of dangerous goods along the Alb Ascent, Germany

### Safety concepts

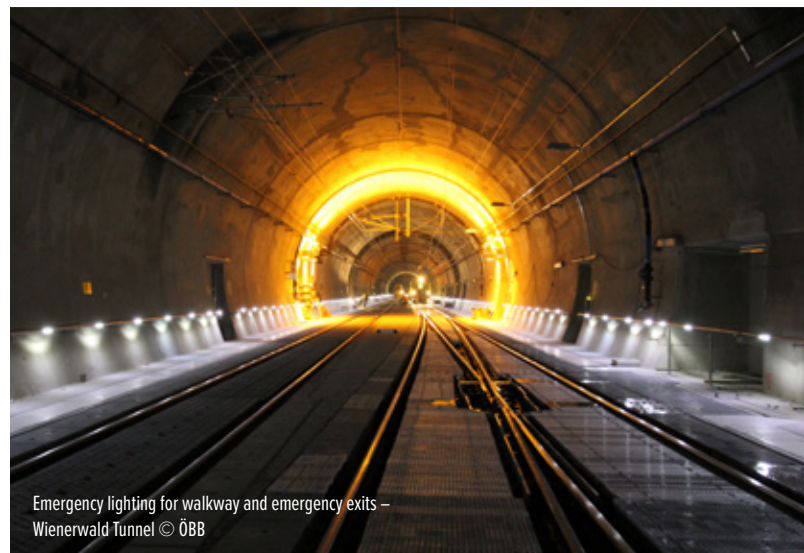
- Semmering Base Tunnel (27.3 km), Austria
- Tunnels on Vienna–St. Pölten high-speed railway line, Austria
- Koralm Tunnel (33.0 km), Austria – Safety and maintenance
- T9 Tunnel (8.1 km), Georgia – Safety and ventilation
- Belgrade City Tunnel, Serbia – Transport of dangerous goods

### Innovation and research projects

- SECMAN – Security risks for bridges and tunnels, EU
- RITUN – Evaluation of road tunnel resilience, Germany
- ALLTRAIN – Hazard catalogue for traffic and transport infrastructure, EU
- FFFS – Evaluation of fixed fire-fighting systems, Germany
- RAINEX – Impact of extreme rainfall on traffic and transport infrastructure, EU



Road tunnel lay-by



Emergency lighting for walkway and emergency exits – Wienerwald Tunnel © ÖBB



Traffic management for emergencies – Closure of Ofenau Tunnel



Railjet on trafficable slab track – Wienerwald Tunnel © ÖBB



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