

# INTEGRATED URBAN DRAINAGE.

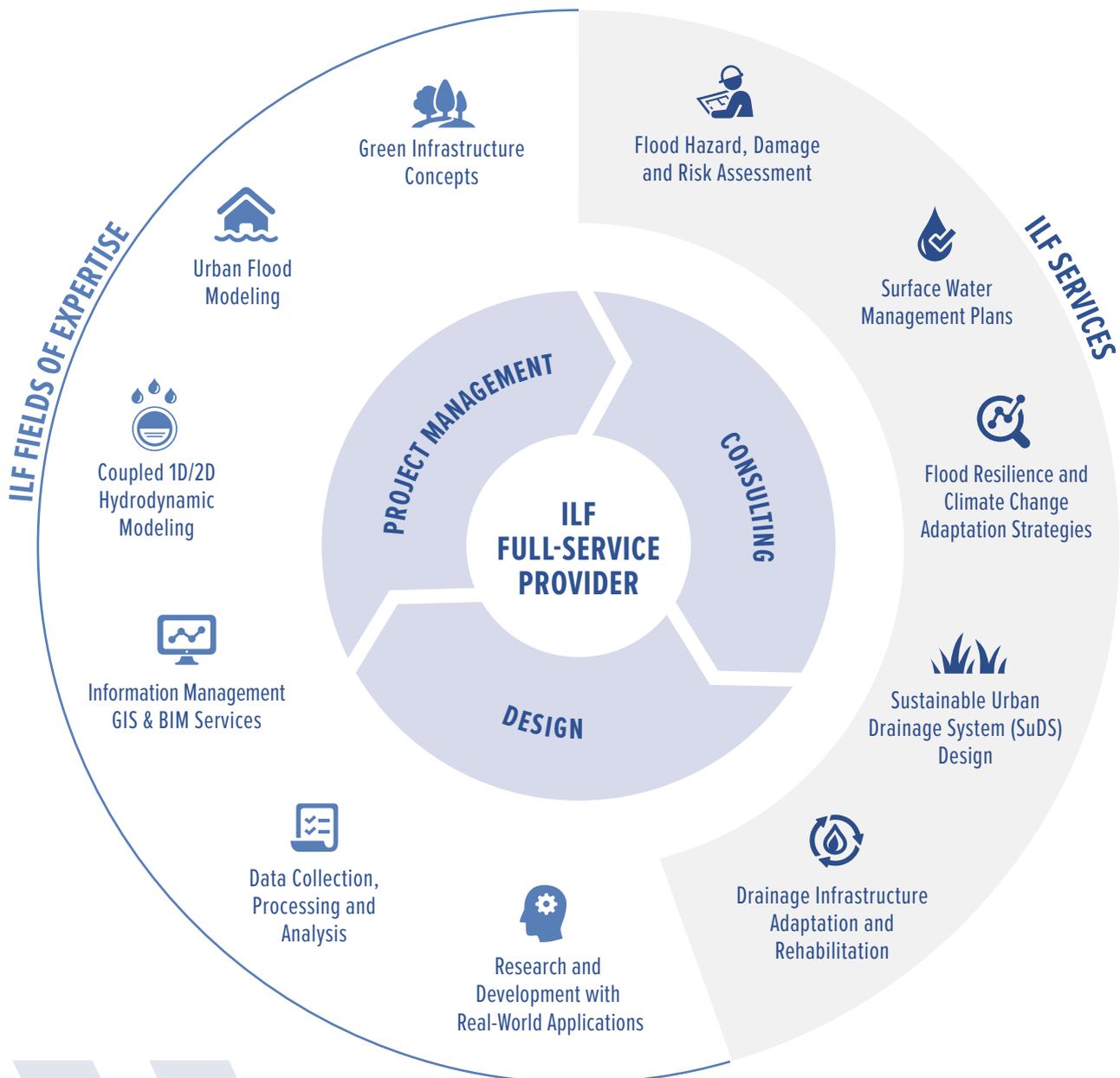
ENGINEERING EXCELLENCE.



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# INTEGRATED URBAN DRAINAGE

Drainage systems are challenged by continued urbanization, accelerated climate change and aging infrastructure, resulting in hydraulic overloading of drainage systems and increased flooding. To address these challenges and to contribute to ensuring safe and attractive urban environments, ILF goes beyond traditional engineering, by taking an integrated urban drainage management approach.



**30 FLASH FLOODS RECORDED WITHIN TWO WEEKS IN GERMANY DURING 2016, WITH 2.4 BILLION USD OF ACCUMULATED DAMAGE**

Today's urban drainage challenges require an all-encompassing response, in essence an Integrated Urban Drainage approach, which is not limited to mere physical adaptation or indeed rehabilitation of existing systems, but incorporates sustainable urban drainage planning and management concepts. This results in adaptable drainage systems that reduce flood risk, increase water resources locally, improve water quality and decrease the burden on existing sewer systems.

ILF has a long-standing history of holistic project delivery in the water and environment sector. The concept of Integrated Urban Drainage is met by ILF's multi-disciplinary pool of experts, who are not only capable of delivering customized solutions but also of facilitating the development of innovative ideas to satisfy future needs.



*“Integrated Urban Drainage requires an appreciation of the causes and consequences of surface water run-off and the actions needed by all of us to minimize the risks.”*

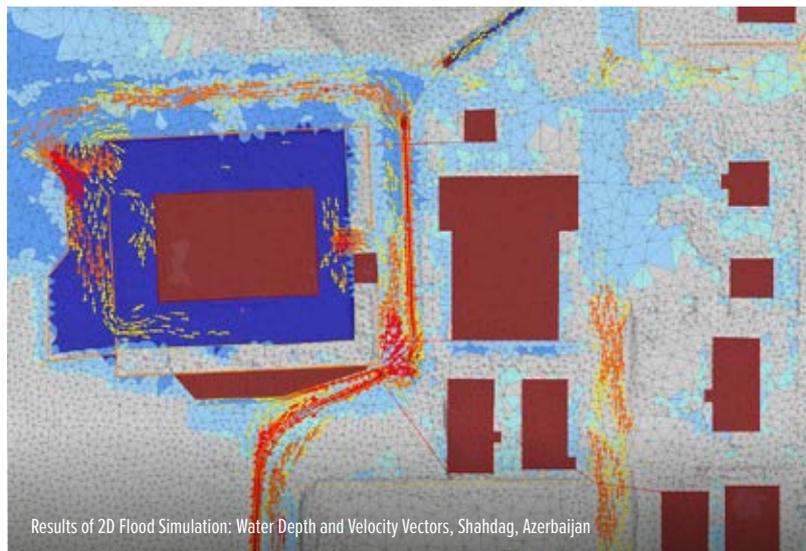
Dr. Günther Leonhardt,  
Urban Drainage Expert

## PROJECT HIGHLIGHTS

- Review and update of stormwater masterplan (15,000 ha urban area), Eskisehir City, Turkey
- Study and design of combined sewer system (45 km length), Korça, Albania
- Adaptation of stormwater and sewerage system (up to 3,500 mm in diameter) of Mittlerer Ring road, Munich, Germany
- Pluvial flood hazard mapping using 2D modeling (3.35 km<sup>2</sup> area), Baden-Wuerttemberg, Germany
- Flood hazard mapping and risk analysis (26 ha area), Shahdag Mountain Resort, Azerbaijan
- Rehabilitation and renewal of sewer system and stormwater overflow structures, Wattens, Austria
- Design of stormwater drainage, retention, infiltration and treatment system, Birago Barracks in Melk, Austria
- Condition and capacity assessment of combined sewer and drainage systems, Bregenz, Hittisau and Mäder, Austria
- Extension of separate and combined sewer systems, Dornbirn, Feldkirch, Mäder and Nüziders, Austria



Flooding of Underpass, Innsbruck, Austria



Results of 2D Flood Simulation: Water Depth and Velocity Vectors, Shahdag, Azerbaijan



Example of Sustainable Urban Drainage System



Stormwater Retention Tank, Wattens, Austria



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