

Hydraulic Modelling Services



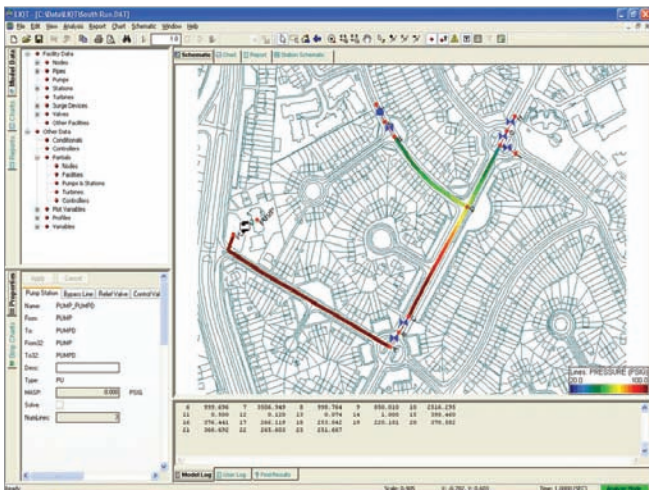
Germanischer Lloyd (GL) Industrial Services is the leading supplier of water focused hydraulic modelling speciality services to utilities and consultants through the provision of quality products and first class professional services. GL's knowledge of water hydraulics and asset management has been successfully applied for over 30 years, improving operational performance, regulatory compliance, safety and profitability for our worldwide clients.

Providing the right solution

GL can help you design and optimise your water assets and infrastructure. We understand the unique environment in which you operate and can help you find the right solutions. You need to design and maintain your assets, optimise resilience and performance, and create working practices that keep your workforce and the public safe, while responding to environmental and economic pressures and demands. GL tailors its solutions to meet your needs, either completing a fully encompassing project or providing specialist support at stages throughout the project.

Our areas of expertise include:

- Model build and calibration
- Network design and optimisation services
- Leakage and demand analysis
- Pressure management services
- Transient hydraulic services
- Extending modelling functionality to non-core users



Model build and calibration services:

GL provides hydraulic modelling services to help utilities construct, develop and maintain hydraulic models. Our services include:

- Network model build from mapping, GIS and asset databases
- Demand modelling and analysis
- Field test design and implementation
- Calibration and verification of models
- Model conversion and enhancements services
- Development of extended period simulation models from existing steady-state models
- Guidance on model build and management procedures

Network design and optimisation services:

GL offers expertise and experience to advance utilities' hydraulic models to improve their overall network operation including:

- Optimisation of operating scenarios and capital improvements
- Network design for pipe routing and pipe sizing for new builds and rehabilitation programs
- Network rezoning and operational efficiency studies
- Energy audits and usage optimisation
- Water Quality modelling and incident investigation
- Fire flow and network resilience analysis

Leakage and demand analysis:

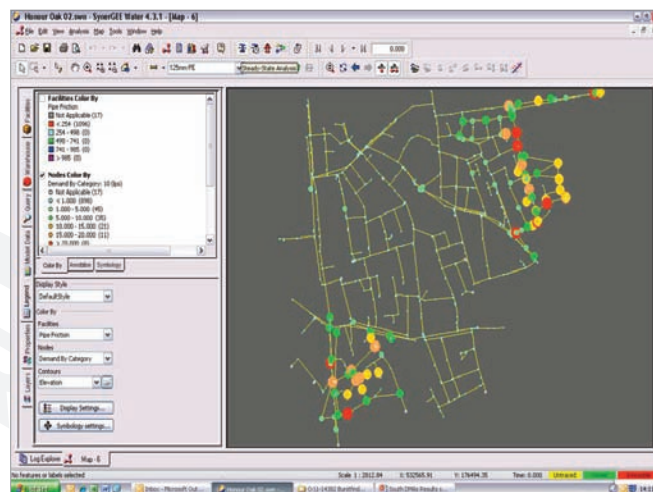
GL provides a balance of hydraulic modelling and field services to help utilities manage leakage and rationalise their water usage. Our services include:

- Leakage analysis and location using our Burstfinder technology
- Non-revenue water analysis and location
- Water demand analysis and forecasting
- Leakage field detection activities

Pressure management services:

GL offers a wide range of services in pressure management design and optioneering. These services complement leakage reduction and include:

- Pressure management scheme analysis and design
- Automated pressure management area optioneering
- Economic analysis of pressure management
- Average Zonal Pressure (AZP) and Hour Day Factor calculations



Transient hydraulic services:

GL's transient services help solve pipeline hydraulic problems and provide greater insight into the system's operational capabilities and performance including:

- Detailed surge analysis testing for potential causes of unanticipated events, quantifying the impact and recommending relief facilities
- Study key operational changes that could be made to reduce the surge effects within networks
- Forensic investigation involving system recreation

Extending modelling functionality to non-core users:

GL understands models have significant value and believe their benefit can be extended around the business, including:

- Custom analysis using batch simulation for system wide model analysis
- Online real-time modelling for operational security
- Development of web applications to publish modelling information
- Customise and implement bespoke training courses

GL Industrial Services

Holywell Park, Ashby Road, Loughborough
Leicestershire LE11 3GR, UK
Phone: +44 1509 282000
Fax: +44 1509 282525
water@gl-group.com · www.gl-group.com/water