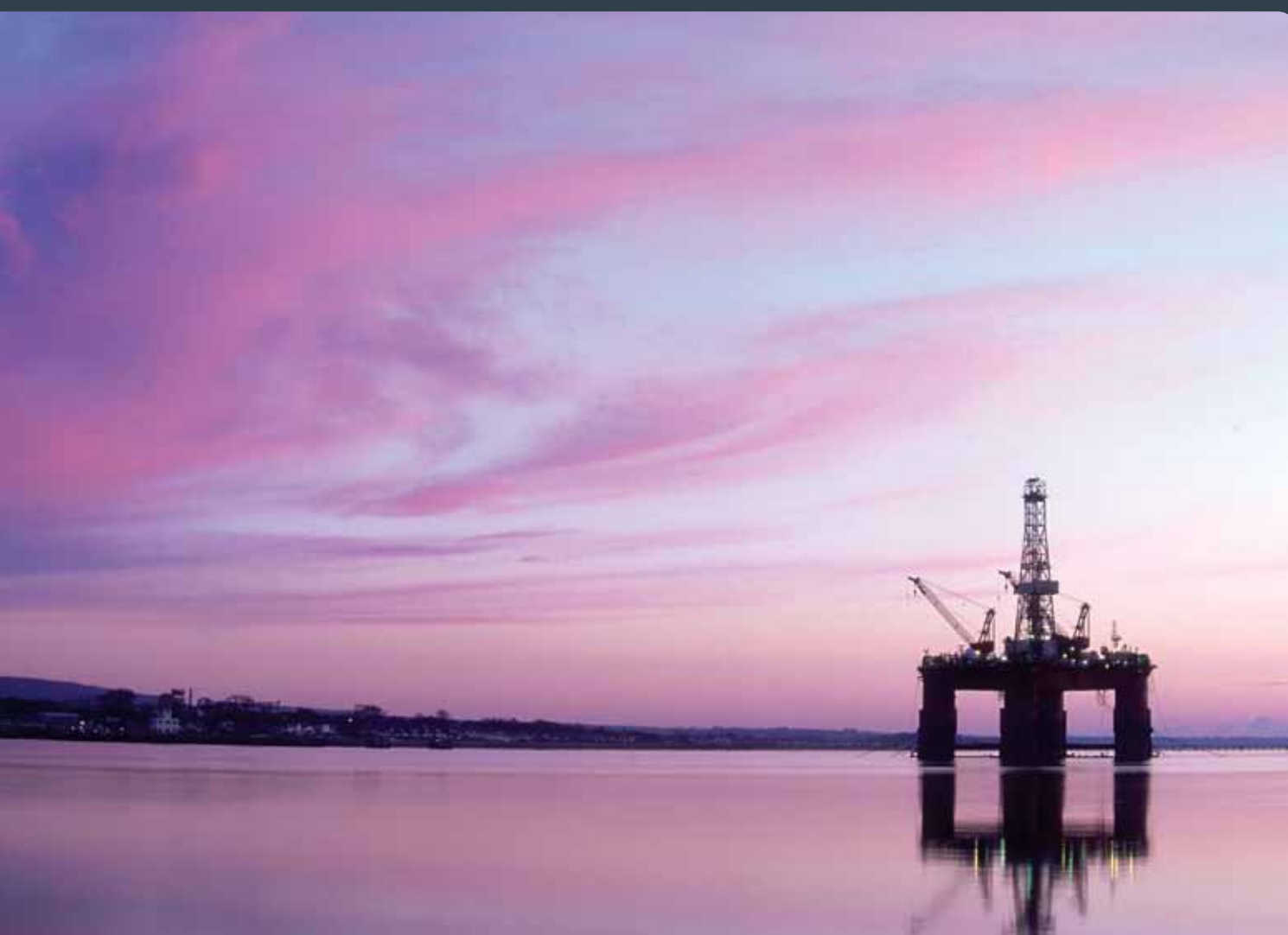


Oil & Gas

GL Noble Denton



www.gl-nobledenton.com

GL Noble Denton

INDEPENDENT MINDS CONNECTED

As demand for energy takes exploration and production operations to ever more challenging extremes of geography and climate, the commercial and personal risks are amplified and the rewards ever harder to realise. When combined with increasingly tight operational and environmental regulation, the pressure on the industry is unprecedented.

GL Noble Denton offers expert advice and practical assistance from an independent position to help ensure that regardless of scale or complexity, projects and ongoing operations are both safe and profitable.

History of GL Noble Denton

1867

Germanischer Lloyd (GL) founded as a maritime classification society

1904

Noble Denton founded to provide technical assurance and project execution services to complex marine operations

1961

Noble Denton expands business offering to include seafaring and gas engineering services in the North Sea

1976

GL diversifies business offering to include technical services in the oil and gas industry

2003

Noble Denton acquires US-based marine surveyors, Martech Unlimited Inc

2004

Noble Denton strengthens R&D, engineering and project management capability through acquisition of BOMEL Ltd. (UK)

2007

Noble Denton acquires Norwegian R&D, engineering and project management company, Intelligent Decisions



When faced with challenges as complex and diverse as ultra-deepwater drilling, field development in fragile ecologies, LNG facility and pipeline construction in Arctic or Saharan conditions, or safely extending a refinery in a dense urban area, **GL Noble Denton** can be trusted to provide a truly independent source of practical insight and support, detailed assurance and reliable technical advice.

We use our unrivalled experience and intelligence, together with our world-leading software tools to help you reduce risk, meet increasingly stringent government and environmental regulations and to improve efficiency from the seabed to the city gas main, at every stage of the asset lifecycle, from design to decommissioning.

For over 140 years we've been independently innovating to make maritime, offshore and onshore energy operations safer, more reliable and more efficient. We achieve this by working closely with our clients to help them understand their needs in three key areas:

**No affiliations,
no preferences,
no bias.**

Plan, Design and Develop

Improve Efficiency, Reduce Risk:

From the earliest point in a project, GL Noble Denton's deep experience, unique, independent and trusted proprietary tools and capabilities enable operators to minimise risk and cost throughout the future life of the asset by optimising every aspect of its design, engineering and construction.

Operate and Optimise

Increase Safety, Integrity, Reliability and Performance:

Every aspect of an asset's operation is critical and faces huge technical, environmental and financial challenges. Our expert teams use a combination of practical experience and cutting-edge simulation modelling to provide you with options for plant, process and production optimisation at every point on the value chain, helping maintain the asset value.

Assure

Enhance Quality, Compliance and Safety:

Assurance underpins everything **GL Noble Denton** offers. Our experienced multiskilled teams and our proven software solutions provide Certification, Verification and Inspection services that help to minimise exposure to risk and lost time incidents from the earliest pre-FEED design work, through smooth-running, safe and efficient operations, to clean and compliant decommissioning.

Noble Denton acquires British marine safety consultancy, Poseidon Maritime Ltd., and Lowe Offshore International Inc a US-based project management

services company to the oil and gas industry

GL acquires Advantica (UK), the former R&D arm of British Gas

GL acquires American Materials

Consulting Services, a quality assurance and control services company, and Canadian PV Inspection Services, a third-party inspection company

2008
GL acquires risk management consultancy, Trident Consultants (Malaysia)

Noble Denton acquires Standard Engineering AS, a Norwegian

engineering services and naval architecture company, and offshore design consultants, Brevik Engineering AS, also of Norway

2009
GL enhances its risk engineering competence through the acquisition of International Refinery Services (Singapore)

GL merges with Noble Denton

2010
GL Noble Denton is launched, combining Noble Denton and the oil and gas division of Germanischer Lloyd

GL Noble Denton

PLAN, DESIGN AND DEVELOP

Safety, reliability and operational efficiency are key concerns for any major facility development or project, and with the right experience and expertise, these can be designed-in from the beginning.

From the very earliest economic and engineering feasibility studies, through project-planning, field, asset and facility design, to engineering, construction and project execution, **GL Noble Denton** provide practical input, powerful software tools, expert advice, and detailed consulting capability.

We bring a truly independent view from a global multi-disciplinary team with decades of success in the most challenging and complex project environments. Our dedication is to safety and reducing risk, whilst focusing on increased quality and efficiency.



GL Noble Denton approved the Troll A Platform, at an overall height of 472 metres, weighing 656,000 tons it is the tallest structure ever moved by mankind.

For the planning, design and development phase we offer a huge range of services from across our global practices including:

Analysis and Engineering Consulting

GL Noble Denton's experience across a marine and energy industry client base that encompasses oil companies, contractors, shipyards, consultants, designers and utility companies, provides a unique insight into a range of practices that we can bring to bear on your critical projects.

Field Development Planning

We offer practicable, optimal and economically viable solutions for offshore Field Developments combining core fixed and floating infrastructure design expertise with Subsea umbilicals, risers and flowlines and process engineering capabilities to evaluate the options for offshore developments to produce realistic and workable solutions.

Design

Our design capabilities range from the evaluation and development of initial concepts through to the design and drafting of the majority of marine structures, including mobile offshore drilling units and mobile offshore production units.

Project Management

Throughout all project stages, from inception to completion our team brings robust project management methodology to definition, design, specification, construction monitoring, procurement, regulatory interfacing, quality control and assurance of onshore, offshore and marine oil and gas assets.

Due Diligence

We offer independent assessment of project risks and controls to financial institutions, ensuring projects will be completed on time and within budget and that appropriate contingencies are in place. We also provide ongoing monitoring and advice to protect financiers' interests.

Construction Monitoring

Our tailored resource solutions will oversee and manage construction projects on site at fabrication yards. We assemble teams to meet the requirements of each project and client, and can deal with technical, managerial and administrative issues.

GL Noble Denton

OPERATE AND OPTIMISE

Every aspect of hydrocarbon production and distribution is highly capital-intensive. Small percentage improvements in operational efficiency or project execution can deliver millions of dollars in profit.

From commissioning or acquisition of an asset, **GL Noble Denton** provide operational support, life-long safety, integrity management and performance optimisation, right through to efficient, clean and compliant decommissioning.

We use our skills and experience, coupled with a comprehensive suite of software solutions to enhance safe, efficient and reliable operations from subsea and deepwater production through to onshore oil, gas and LNG processing, transport and storage to transmission and distribution networks.



World class software for the global oil and gas industry

GL Noble Denton offers a comprehensive portfolio of software solutions across the oil and gas sector. Our world class solutions enhance the safety, performance and integrity of assets across their lifecycle.

All GL Noble Denton software solutions come with a comprehensive range of consultancy, implementation and support services. Our services combine the right mix of technical /engineering consultancy, IT solution configuration, data migration, integration and training services to ensure every solution delivers the required business benefits.

Our operational support services include:

Testing

GL Noble Denton offer a range of world class testing services to our global client base from our purpose-built facilities based in the UK; Spadeadam Test Site for large scale hazard and non-hazardous testing and the Flow Centre providing the largest facilities in the world for high pressure natural gas flow testing.

Asset Integrity Management

Our Asset Integrity Management capability spans the production environment from the wellhead, through transmission systems, production and processing facilities and substructure to the point of delivery onshore.

Asset Optimisation

We enable oil, gas and LNG operators to increase production revenue, reduce operating expenditure and optimise commercial strategies. Our fundamental understanding of energy management optimisation has allowed us to develop leading edge solutions to assist our clients to meet the demands of the low-carbon economy.

Marine Operations

We specialise in the provision of world-class personnel and expertise in support of offshore marine operations, and active support for all marine operations is enabled through wider GL Group synergies.

Marine Consulting

Our mariners have both specialist offshore experience and detailed tanker knowledge which they use to perform surveys on oil and gas rigs, construction and support vessels, tankers and cargo/passenger vessels.

Marine Casualty Investigation

We provide a global service to lawyers, underwriters, P&I clubs and ship owners to investigate, report and act as an expert witness on marine and energy casualties.

Dynamic Positioning Services

Dynamic Positioning (DP) is a computer-controlled system that automatically maintains a vessel's position and heading. GL Noble Denton provides DP assurance services, including failure mode and effects analyses (FMEA) and failure mode, effects and criticality analyses (FMECA).

Transportation and Installation

Including phase analyses, simulation exercises and Dynamically Positioned float-overs; we combine a unique mix of practical marine and engineering skills to solve complex marine transportation and installation projects.

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ASSURE

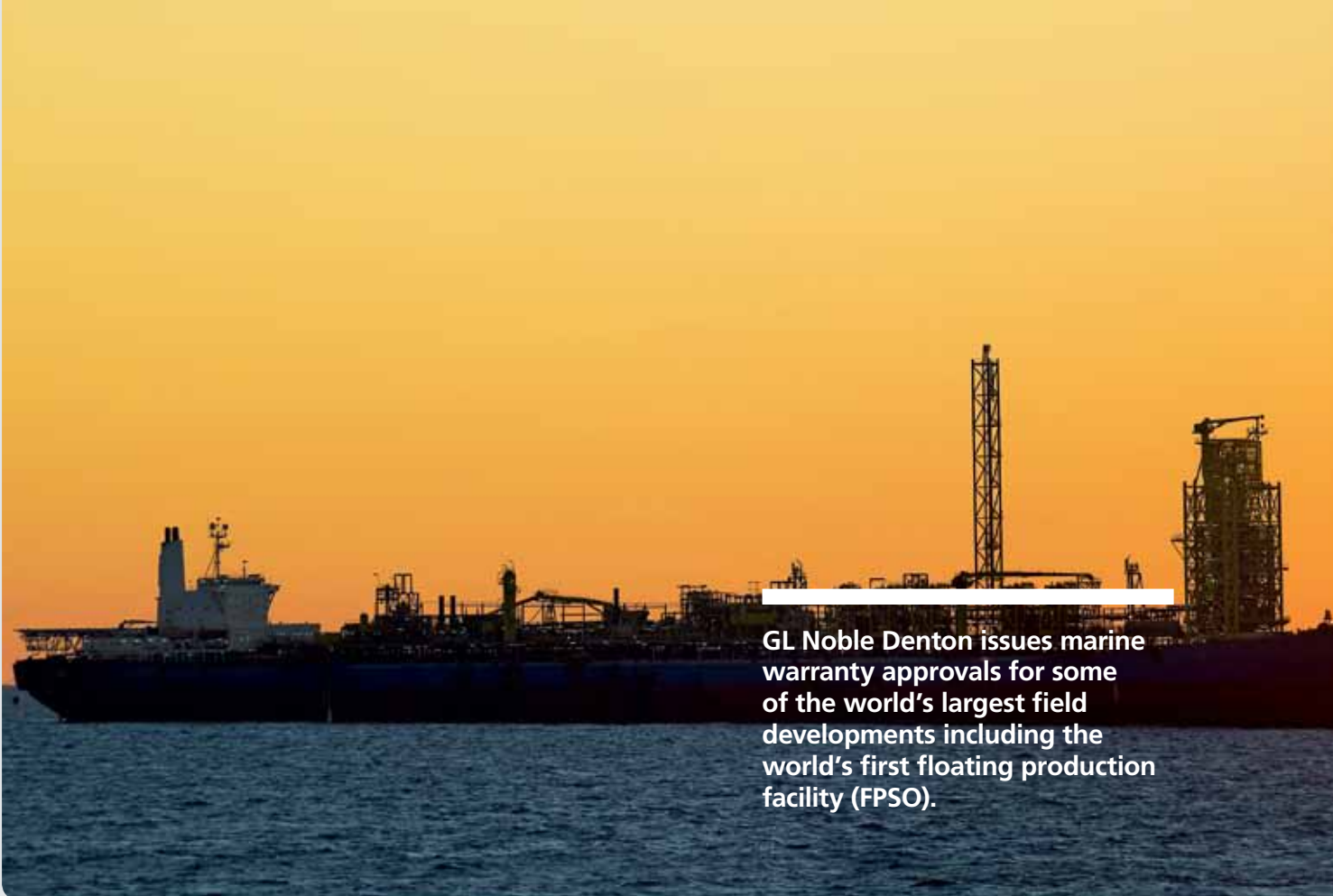
All stakeholders in an enterprise need confidence that the plans made, assets deployed and procedures adopted are fit for purpose, safe and will meet their regulatory, financial and operational obligations throughout their operational lifespan.

GL Noble Denton's approach to assurance ensures clients' achieve a positive outcome for even the most challenging projects, while risks are mitigated and minimised.

We provide a comprehensive set of services to support projects from initial design certification and verification through to quality assurance and in-service inspection and compliance management.

Founded as a Maritime Classification Society, we have comprehensive experience covering marine, offshore and industrial assurance which makes us uniquely able to offer objective independent assessment across the entire energy supply chain.

Our expert teams have deep specialist knowledge of every major operational area from subsea and floating production operations, risers and flowlines, platforms, rigs and export pipelines, through to LNG compressor trains, receiving terminals, refineries and even national and city gas distribution networks.



GL Noble Denton issues marine warranty approvals for some of the world's largest field developments including the world's first floating production facility (FPSO).

We draw our pool of experts from our global practice teams to deliver services including:

Certification

GL Noble Denton's design appraisal and inspection experts identify safety-critical elements of an asset, through checking design, manufacturing, commissioning and installation of these components.

Verification

Our verification services aim to ensure the safety and reliability of offshore units through design, construction and operation. Acting as an independent verification body, we assist with the fulfilment of regional statutory and company requirements.

Inspection and Quality Assurance

We monitor oil and gas projects worldwide, generating customised data reports analysing key issues of a particular venture, including accounting, auditing, logistics and workflow.

Safety and Risk Consulting

Effective and economic safety and risk management is essential and we offer a full range of technical consulting services managing process risks for all assets in the oil and gas value chain.

Marine Warranty

Working on behalf of insurance underwriters, our expertise and experience is put to use evaluating operational risks and assessing the feasibility of working practices, combining a technical review of literature with on-site inspections.

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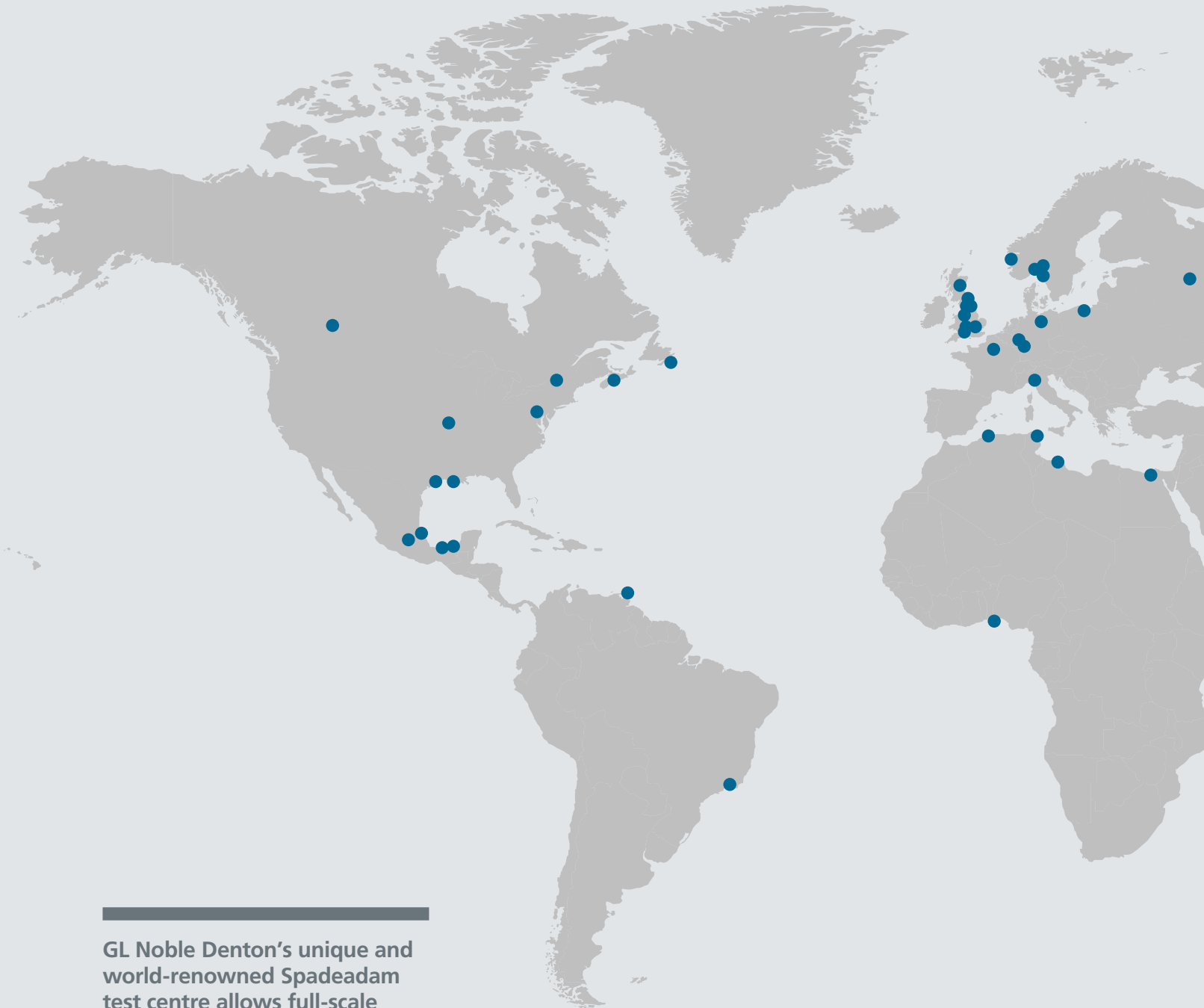
YOUR GLOBAL OIL AND GAS PARTNER

GL Noble Denton are independent advisors providing consulting, design, assurance and project execution services, combining excellent engineering and analytical skills with operational experience of offshore, maritime and onshore oil and gas assets.

Our clients operate at every point in the value chain of the oil and gas industry, from Investors and Insurers, Offshore, to Onshore Operators and Contractors, and right through to Network Operators:

- Mobile Offshore Drilling Units
- Mobile Offshore Production Units
- Fixed Platforms
- Subsea, Risers, Umbilicals and Flowlines
- Offshore Support Vessels
- Offshore Pipelines
- Onshore Pipelines
- Onshore Production
- Hydrocarbon Storage
- Import Terminals
- LNG Production, Transport Storage and Distribution
- Refineries and Petrochemicals
- Distribution and Transmission Networks

● GL Noble Denton presence



GL Noble Denton's unique and world-renowned Spadeadam test centre allows full-scale pipeline testing to the extremes of operating conditions including explosions and catastrophic failures.



GL Noble Denton

Americas

Brazil – Rio de Janeiro
Canada – Calgary
Canada – Dartmouth
Canada – St John's
Mexico – Ciudad del Carmen
Mexico – Mexico City
Mexico – Poza Rica
Mexico – Villahermosa
Trinidad and Tobago – Port of Spain
USA – Houston
USA – Lafayette
USA – Mechanicsburg
USA – Muskogee
USA – New York

GL Noble Denton

Europe

Germany – Hamburg (GL Group HQ)
Germany – Herne
Germany – Mulheim/Ruhr
Germany – Stuttgart
Italy – Cinisello Balsamo
Kazakhstan – Aktau
Kazakhstan – Atyrau City
Norway – Brevik
Norway – Oslo
Norway – Sandefjord
Norway – Stavanger
Poland – Gdansk
Russia – Moscow
UK – Aberdeen
UK – London (GL Noble Denton HQ)
UK – 10 further locations across the UK

GL Noble Denton

Middle East

Bahrain
Iran – Tehran
Kuwait – Kuwait City
Oman – Muscat
Qatar – Doha
Saudi Arabia – Al Khobar
United Arab Emirates – Abu Dhabi
United Arab Emirates – Dubai
United Arab Emirates – Sharjah

GL Noble Denton

Africa

Algeria – Algiers
Egypt – Cairo
Libya – Tripoli
Nigeria – Lagos
Tunisia – Tunis

GL Noble Denton

Asia and Pacific

Australia – Brisbane
Australia – Perth
Brunei – Kuala Belait
China – Beijing
China – Shanghai
India – Bangalore
India – Navi Mumbai
Indonesia – Jakarta
Korea – Seoul
Malaysia – Kuala Lumpur
Philippines – Manila
Singapore
Thailand – Bangkok
Vietnam – Da Nang City
Vietnam – Hanoi
Vietnam – Ho Chi Minh City
Vietnam – Vung Tau City



As a world class technical service provider for the oil and gas industry, we have the experience, expertise and global scale to act as your independent advisor and global operational partner to ensure safety, sustainability and superior value.

Our Mission and Values

All over the world, we know where we're from and where we're heading. We are proud of our collective heritage. It defines who we are today and what we'll be in the future.

Our Global Mission

Smarter: Operating in the most efficient way using our expertise and networks to deliver industry leading services.

Greener: Ensuring sustainability and efficiency through our processes and ways of working and helping our clients maximise their resources and assets.

Safer: Risk and safety management is integral to all that we do. Understanding clients' needs to minimise risk, ensure safety and compliance of their assets.

Our People Values

Embrace Change: Our flexibility and desire to change sets us apart. Enabling us to build internal networks to fully support our clients' needs. Taking personal ownership of change drives us forward and maximises our future potential.

Enhance Trust: Building trust underpins all of our relationships both internally and externally. Earning respect based on our clients' perception of our reliability, dependable quality and relentless focus to deliver. From trust we aim to earn respect and build long term partnerships.

Deliver Results: Believe that making a difference matters. Providing innovative, realistic solutions based on technical certainty, well founded advice and attention to detail.



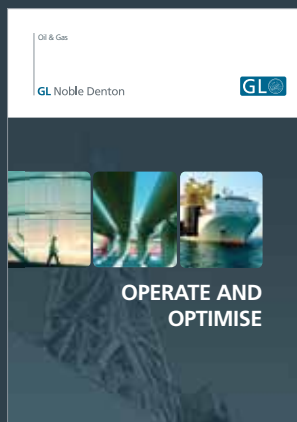
GL Noble Denton

We have an office near you, wherever you are based. If you would like more information, please contact us:

Email: glnobledenton@gl-group.com

Website: www.gl-nobledenton.com

Group website: www.gl-group.com



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