

# oil & gas

## CAPABILITY STATEMENT

Houlder is a UK employee-owned business providing a high quality, sophisticated engineering capability within the marine environment. The company's Oil & Gas business plays a key role supporting drilling and subsea operations worldwide.

The Houlder name has been associated with maritime affairs since 1854, initially as the Houlder Brother's shipping line.

Houlder entered the Oil & Gas sector in the 1970s as both a drilling and subsea contractor, when the company designed, owned and operated drilling units, dive support vessel and semi-submersibles including the Orelia and Uncle John, which are still in service.

This capability statement outlines Houlder Oil & Gas resource, capability and wide range of projects.

If you require additional information, please contact –

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## Oil & Gas Client Services

Houlder provides discipline engineering and project services to the following clients:

- Drilling Vessel Owners
- Subsea/Well Intervention Vessel Owners
- Field Operators
- Oil & Gas Service Companies

Specific types of work undertaken on behalf of our clients are:

- Existing & New Vessel Topside Modifications/Upgrades
- Existing & New Vessel Hull Modifications & Stability Upgrades
- Shipyard Support (Project Management, Construction Supervision & Engineering)
- New Equipment Integration (Engineering, Installation & Commissioning)
- Accommodation Upgrades (Studies and Engineering)
- Subsea Equipment Handling Upgrades (Studies and Engineering)
- Equipment Load Out & Seafastening Design
- Deadweights, Inclining Experiments & Stability Assessments
- Fatigue Analysis and Assessment
- Class Liaison and Submittals
- Expert Witness Services: Arbitration Processes and Courts of Law
- Professional Services: Contractual & Warranty Advice
- Shipyard Services: Assessment, Selection and Negotiation

All services are provided by our in-house engineering team, which includes:

- Project Managers
- Construction Supervisors
- Structural Engineers
- Marine Engineers
- Naval Architects
- 2D & 3D CAD Designers



## Project Management and Shipyard Supervision

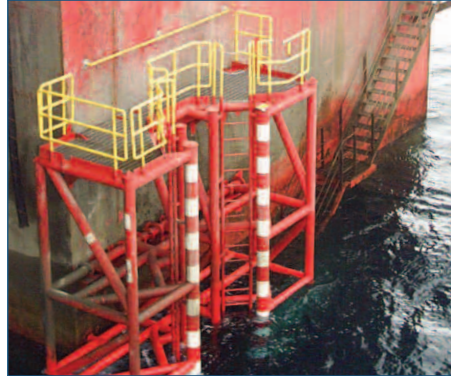
Houlder Oil & Gas Project Management services co-ordinate engineering design, manufacturing and installation work at client and sub-contractor premises. The company also provides specialist Construction Supervisors to manage shipyard and offshore construction work.

Houlder's experienced shipyard management personnel include suitably qualified Project Managers, Commissioning Engineers, Steelwork and Welding Inspectors, Paint Inspectors, and Cutting Inspectors.

All personnel can be deployed to client premises and shipyards globally.



*BYFORD DOLPHIN, Houlder designed and supplied this prefabricated deck extension being shipped to Norway for installation.*



*STENA TAY, Surfer boat platform, design and prefabricated in Aberdeen before being shipped for installation in Nigeria.*



*WELL ENHANCER, Houlder designed, prefabricated and installed mezzanine decking for Helix Well Ops.*



*APACHE II, Houlder assisted Technip with the commissioning of the conversion at their Pori construction yard, Finland.*



*NORMAND SUBSEA, Houlder assisted Subsea 7 with fitting out the ROV-SV in Norway – providing an onsite project manager.*



*AKER BARENTS & BYFORD DOLPHIN at Weston Norway. Houlder supplied works supervision during an extensive upgrade. Houlder installed a ROPS delivery system to the AKER BARENTS during offshore operation.*



*TRANSOCEAN 714, Houlder provided Engineering Services, Project Management and Construction Supervision during the rig's upgrade at Invergordon, Scotland. The scope of work included installation and integration of new accommodation modules and total refurbishment of existing accommodation.*

# Design, Build, Installation and Commissioning

## Drilling

Houder provides drilling and work-over facility design for offshore platforms, semi-submersibles, jack-ups and drill ships. Specialist areas relate to slant drilling, tender assisted drilling, deep water mooring, dynamic positioning and surface BOPs.

## Pipelaying

The company's capability and previous experience includes the design of complete ship installations for laying flexible or rigid flowlines. It also includes all aspects of design and integration of pipelaying systems and equipment onto new build and converted vessels.

## Diving & ROV Systems

Houder Oil & Gas has extensive experience designing diving systems and their integration into support vessels including equipment installation, build supervision, commissioning and testing. Houder is also able to assist with all aspects of ROV installation onboard vessels including the structural verification of deck loading, interface grillage designs and customised deployment, launch and recovery arrangements.

## Specialist Handling Systems

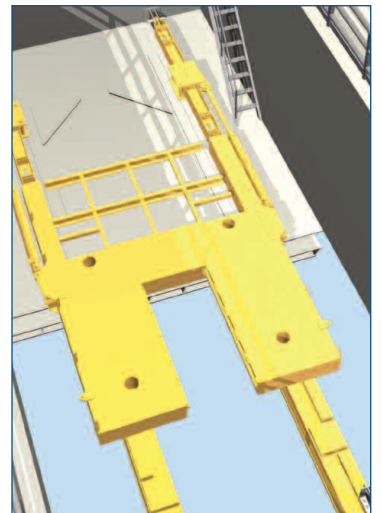
Houder Oil & Gas has extensive experience designing specialised, bespoke equipment for the drilling industry. This experience ranges from Concept Studies through to Turnkey Delivery and installation of complete systems. Houder has a proven track record supplying customised mechanical handling solutions for subsea and drilling operations.

Houder has long standing relationships with specialist sub-contractors for fabrication, hydraulic design and assembly and electrical installation. This means clients can draw on established pool of expertise for these projects.



*ROPS ARMS, Houder designed DNV Class Approved Telescopic Arms used to limit overside operations in the moonpool*

*BESPOKE SKIDDING SYSTEM, designed, built and installed by Houder on the Byford Dolphin for BP Exploration.*



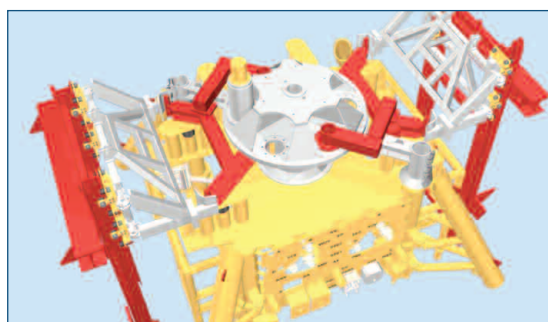
*TREE SKIDDING SYSTEM & BOP GRIPPER ARMS, designed, fabricated and installed by Houder on the Stena Don.*



*SUPPORT & ACCESS STEELWORK, prefabricated and installed for Ocean Rig's Leiv Erikson in preparation of the installation of ROPS arms*



*GUIDE FUNNEL, under test in Aberdeen having been designed and supplied to Total Akpo by Houder.*



*TREE RUNNING TOOL GUIDANCE SYSTEM, bespoke collapsible guidance system designed, built and installed on the Byford Dolphin for BP exploration.*

## Marine Engineering

Houlder Oil & Gas has extensive experience of marine operations, safety systems, mooring systems, dynamic positioning and specialist handling equipment and structures. All aspects of marine related projects from concept, FEED, design and construction through to testing, commissioning and operation can be undertaken using the company's in-house specialists.



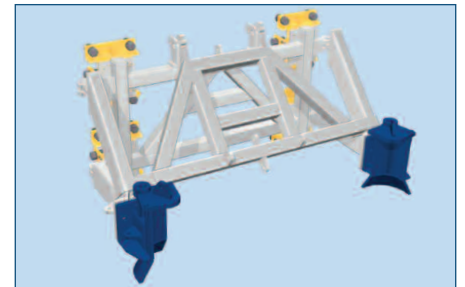
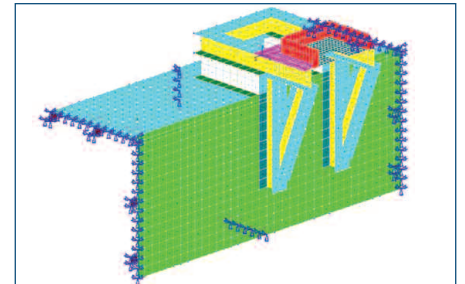
## Structural Design

Houlder Oil & Gas provides structural design and CAD design to a wide range of clients throughout the offshore industry. Projects range from full vessel upgrades to equipment Seafastening.

Structural Design is carried out to latest industry codes (AISC, DNV & ABS) using verified in-house tools and proven software (FS 2000, ASAH-H, Staad-Pro & MathCAD).

CAD design work for general arrangements, vessel arrangement and fabrication drawings are completed in AutoCAD. Full vessel design and system animations are carried out using Inventor 3D.

All engineering and design work is developed and supported by undertaking vessel surveys (whilst the vessel is operating offshore or at shipyard). All attending surveyors have offshore survival certification.



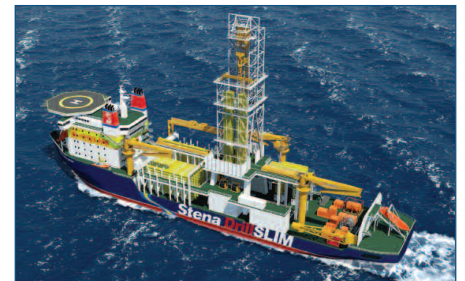
## Naval Architecture & New Vessel Design

Houlder Oil & Gas undertakes new vessel design at its offices in Aberdeen and London. It also draws on the resources of Houlder's wholly owned subsidiary Hart, Fenton & Company, which specialises in new build offshore support, RoRo, cable laying and specialist use vessels.

Recent vessels developed have been a DP FPSO vessel for Vampire Production, the Drill Slim Lightweight Drill Ship and a Deepwater Wind Turbine Installation Jack-Up vessel.

Naval Architecture services also include Deadweight and Incline Experiments, Sponson Design and Hull Global Analysis. Stability work is carried out to latest Class Society Guidelines and is undertaken by surveyors experienced with jack-ups, semi-submersibles and monohulls.

Software utilised includes NAPA, AQWA Offshore & Nupas.



## Recent Clients

|                                      |                                                                    |
|--------------------------------------|--------------------------------------------------------------------|
| Drilling Vessel Owners:              | Stena Drilling, Transocean, Pride, Ensco, Maersk, Dolphin Drilling |
| Subsea and Well Intervention Owners: | Technip, Acergy, Subsea 7, Helix Well Ops, Canyon Offshore         |
| Field Operators:                     | BP Exploration                                                     |
| Oil & Gas Service Companies:         | Schlumberger, MiSwaco, Aker Qserve, Gardline Geosciences           |

All engineering and design work is completed in accordance with Houlder's Quality Management System, which is certified to Lloyds Assurance to BS EN ISO 9001:2000.