

## Our People...



We believe that the key to our success lies not only in our core values of honesty, integrity and respect for people, but also in the wide range of technical skills and expertise our personnel can bring to bear in servicing the needs of our clients.

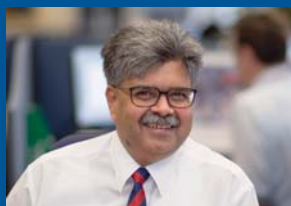
Our experienced international staff of professionally qualified master mariners, naval architects, multi-disciplined engineers and surveyors are able to form a rapid appreciation of a client's requirements and respond effectively to these needs either individually or as multi-disciplinary teams. This enables us to tackle any task, from a straightforward routine survey to the most complex, multi-disciplinary problems and casualties.

### Our Master Mariners...

Our Master Mariners have command experience and many have shore management experience as marine superintendents, pilots, rig movers and fleet managers. They come from a broad background with experience in oil, chemical and gas tankers, bulk carriers, general cargo vessels, salvage, towage and offshore construction vessels.

### Our Naval Architects...

Our Naval Architects have specialist knowledge in ship design and construction, classification societies and ship research. This is particularly beneficial in newbuild and conversion projects, ship surveys and casualty investigations including collision analysis and ship safety studies focusing on strength and stability.



### Our Marine Engineers...

Our Marine Engineers are similarly experienced, having served as Chief Engineer and also ashore in superintending and management roles, or in classification societies as Surveyors. Hull and machinery problems, bunker disputes, newbuilding disputes and structural surveys are strong features of their expertise.

### Our Electrical, Instrumentation and Control Engineers...

Our EIC Engineers have been specialising for many years in the design and construction of oil tankers, LNG carriers and Floating Production Storage and Offtake vessels. This enables them to provide expertise on newbuild and conversion studies as well as to provide important input into the design and construction of the latest technical innovations.

For further enquiries, please contact Harry Lee, Business Development Manager.

Tel: +44 (0) 20 7934 8160

Email: [harry.lee@shell.com](mailto:harry.lee@shell.com)

Web: [www.shell.com/shipping](http://www.shell.com/shipping)

## Our Services...

Our business involves us in a wide variety of maritime matters, from project management of newbuild and conversions to maritime consultancy, surveys and audits. In each of these areas, we are able to investigate, advise, analyse and survey as necessary, in accordance with our client's instructions.

### The professional services we offer include, but are not limited to:

- Engineering design and concept feasibility
- Ship design and naval architectural analysis
- Intact and damage stability calculation and assessment
- Specification writing for major refit and conversion
- Project management including plan approval and provision of technical on-site supervision
- Maritime safety audits and vessel condition surveys
- Technical and commercial risk assessment
- Maintenance of single point mooring buoys and systems
- Procurement and distribution of spares and equipment
- Marine and electrical repairs
- Quality Assurance approval assessment and implementation

### In addition, Shipping Technology applies its engineering expertise to:

- Ship hulls
- Tank arrangements
- Accommodation
- Helidecks
- Naval architectural calculations
- Structural strength and fatigue analysis
- Mooring system integration
- Power generation and distribution facilities
- Ship-related utility systems
- Safety systems
- Engine room systems
- Instrumentation and control systems
- Cargo and ballast handling
- Export metering
- Oil and gas separation facilities
- Oil stabilisation
- Gas treatment
- Gas compression
- Seawater injection facilities
- Topside related utility systems
- Flare systems
- Tandem mooring and offloading systems



## The Future...

Even in the new millennium, shipping remains as essential as it ever has been to the successful functioning of global commerce.

An increasing number of rules and regulatory systems pose new requirements and obligations on shipowners and their operations, whilst shipping related issues, incidents and casualties receive ever greater attention from the world's media and the general public, particularly in regard to environmental issues.

As shipping lanes, waterways and ports continue to become more and more congested and scrutiny of the shipping industry increases in its intensity, Shell Shipping Technology remains dedicated to providing an independent, high quality service to respond rapidly and effectively to the needs of the shipping industry in the 21st century.

For further enquiries, please contact Harry Lee, Business Development Manager.

Tel: +44 (0) 20 7934 8160

Email: [harry.lee@shell.com](mailto:harry.lee@shell.com)

Web: [www.shell.com/shipping](http://www.shell.com/shipping)

## Conceptual Design

Early decisions on the feasibility of all manner of projects can be aided by carrying out conceptual design studies. We have extensive experience on a range of such projects, both in the support of shipyards and on behalf of various Shell and Joint Venture clients from all market sectors.

These studies range from small refits to complete newbuild projects and encompass all types of vessels and floating structures.

From the earliest stages in all design and development projects, production capacities and working practices are paramount.

As part of this process, we rely on our personnel, who are, on a day-to-day basis, providing technical solutions on live projects.

We also tap into the expertise from the Fleet Management Group who are involved in the daily operational running of the Shell fleet. They provide a sounding board towards proposed concepts and solutions so that the designs recommended are reliable and operationally fit for purpose.

Shipping Technology is proud to be at the forefront of turning concepts into reality and has been for many years.

- Concept studies (design development and design verification)
- Conceptual studies for field development plan (EPP)
- Concept analysis and testing
- Feasibility studies
- LNG import/export terminals (VAR1/VAR2)
- Research and development
- Early project definition
- Cost estimation
- Engine room layout and drawings

LNG Terminal Concepts



For further enquiries, please contact Harry Lee, Business Development Manager.

Tel: +44 (0) 20 7934 8160

Email: [harry.lee@shell.com](mailto:harry.lee@shell.com)

Web: [www.shell.com/shipping](http://www.shell.com/shipping)

## Basic Design

After a concept design has been developed with a client, the design can be further revised to a stage where approvals can be sought from relevant Classification Societies and Statutory Authorities.

This involves deploying the structural design into scantling plans such as the Midship Section, Profile & Decks and Shell Expansion drawings as well as refinement to the longitudinal strength calculations.

Working closely with external consultants, our marine engineering discipline develops the balance calculations and system schematics for ship, engine and cargo systems, identifying among other things flow rates, pump capacities, pipe diameters and materials. Outline equipment arrangements are produced ensuring that the available space is optimised.

The electrical generation and distribution philosophies are developed in conjunction with the owner or the vessel operator, taking into consideration the marine engineering requirements, to produce single line diagrams.

The electrical load balance is refined and major electrical equipment identified and located. From this information, preliminary cable routes and short circuit calculations can be submitted to the owner/operator and where appropriate, to Class for approval.

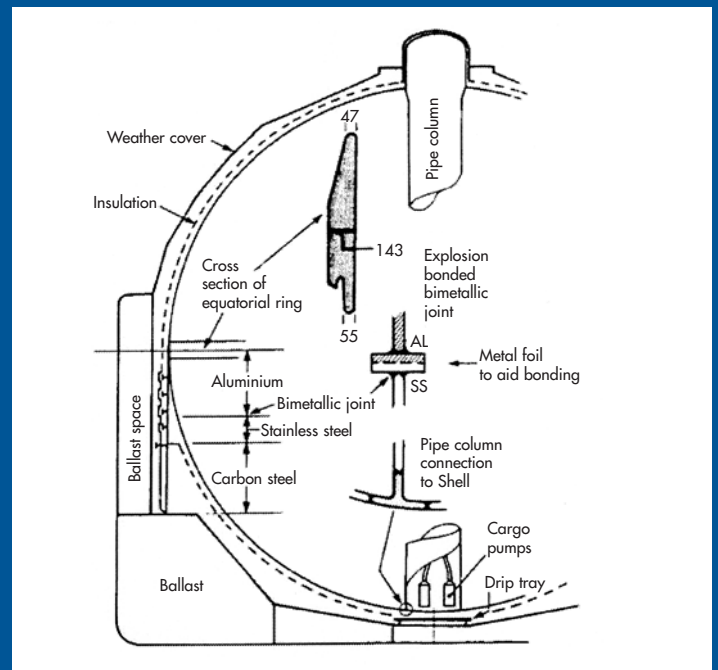
Safety issues such as structural fire protection, escape routes and life-saving appliance plans are produced allowing Statutory Authority approval.

As this information is made ready, the general arrangement drawing is updated and weight estimates are further refined for stability purposes. Material lists and equipment databases are instigated as appropriate.

All this information is submitted to the relevant Classification Societies & Statutory Authorities for approval.



Two 'G' class LNG carriers



## Naval Architecture

Following the conceptual design development with the customer, designs are submitted through the approval stage to the relevant Classification Societies & Statutory Authorities.

The naval architect department uses many different types of design software for modelling of ships and performing versatile design analysis calculations including:

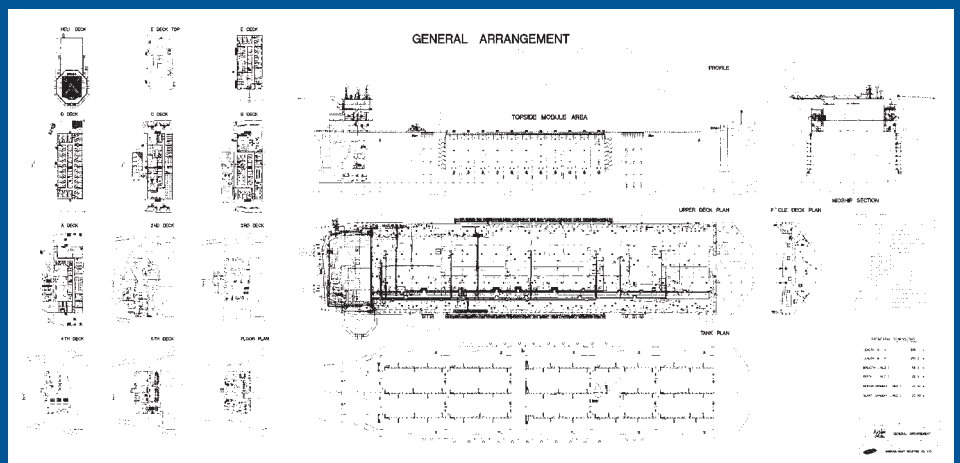
- 3D modelling of the entire ship
- Standard naval architectural calculations
- Report generation

The systems we operate are in line with the major classification authorities and shipyards worldwide for initial and basic ship design, comprising hull surface definition, production-level fairing, the definition of a vessel's compartmentation and all types of naval architectural calculations.

Geometry definitions are based on a complete 3D product model created by the system, and it can be used both for preliminary design and for the production of final delivery documentation. The model covers all the required applications in naval architectural design and can be used for the analysis of any type of floating structure.



*3D models assist design efforts*



For further enquiries, please contact Harry Lee, Business Development Manager.

Tel: +44 (0) 20 7934 8160

Email: [harry.lee@shell.com](mailto:harry.lee@shell.com)

Web: [www.shell.com/shipping](http://www.shell.com/shipping)

## Naval Architecture

The team is constantly updating its expertise in all areas of the naval architectural field. Our close association with industry groups, classification technical committees and ongoing involvement with research and development projects ensures that the latest technologies and best practices are used in daily engineering tasks.

Support for the fleet activities, structural review of the condition of chartered vessels and ongoing provision of expertise for operating companies provide a wealth of operational expertise that could be employed not only as part of the concept studies and new building activities but also enable us to add value to any Naval Architecture issues in relation to floating vessels.

Asset Integrity Management of ships feasibility of any floating production storage and offtake (FPSO vessels) are a new area of interest for owners and charterers. We would be pleased to assist in managing the ongoing concern of structural integrity and operational feasibility of any FPSOs.

Our team of experienced naval architects is able to provide an integrated engineering solution to your problems.

Our expertise covers:

- Hull form and arrangement development
- Motoring: speed and powering, manoeuvring
- Sea-keeping
- Damage and intact stability
- Structural design and appraisal
- Trials and commissioning
- Thermographic surveys



*Complete naval architecture service – from plan review...*



*...to shipyard quality control and oversight*

For further enquiries, please contact Harry Lee, Business Development Manager.

Tel: +44 (0) 20 7934 8160

Email: [harry.lee@shell.com](mailto:harry.lee@shell.com)

Web: [www.shell.com/shipping](http://www.shell.com/shipping)

## Structural Design

Liaison with clients, Classification Societies and close co-operation with involved shipyards has proved invaluable in developing structural designs.

Structural design scantling calculations are reviewed by our experienced naval architects. Their application enables the rapid checking of prototype structural designs and associated strength analysis in accordance with the classification authority rules.

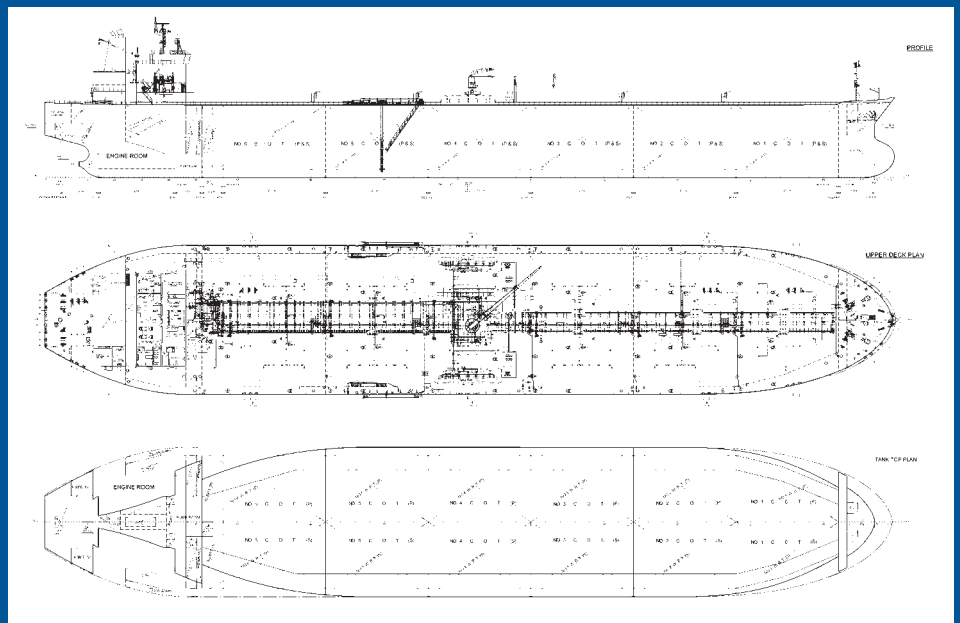
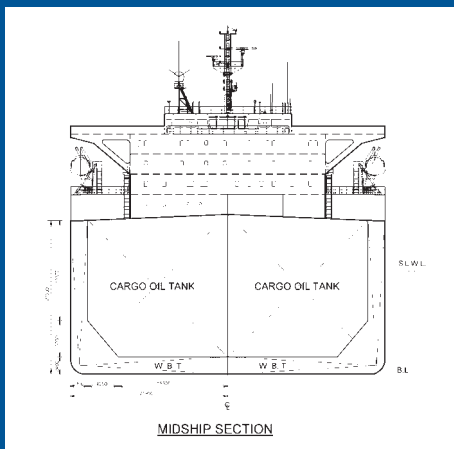
Our designers use AutoCAD to develop 'traditional' 2D structural detail drawings. Using pre-defined industry drawing standards, these are produced to a high level of detail in a short timescale and subsequently issued to the Classification Societies, authorities and the clients for approval.

With complex structures that are subject to high stresses, for example the design of large FPSOs, a more rigorous analysis than 'design by rule' is required.

In such cases, our designers can utilise specialised software packages to fully scrutinise and optimise structural designs, ensuring that the resultant structure meets all regulatory requirements with respect to structural stability and is 'build-friendly'.

This method facilitates the rapid assessment of various structural arrangements through a 'what if' scenario at the early stages of the design development, and subsequently enables more stringent control over the final design, with the added benefit of weight and/or fabrication cost savings.

By undertaking these analyses in-house, we can reduce the time taken in developing the structural design. This is achieved as a result of a minimum of rework resulting from Classification approval comments.



For further enquiries, please contact Harry Lee, Business Development Manager.

Tel: +44 (0) 20 7934 8160

Email: [harry.lee@shell.com](mailto:harry.lee@shell.com)

Web: [www.shell.com/shipping](http://www.shell.com/shipping)

## Mechanical Design

Each design is developed to incorporate the principles of providing simple, reliable and easily maintained systems that satisfy both the client's operational and the relevant Classification and Statutory requirements.

Detailed calculations are carried out to establish and optimise the correct equipment and pipe sizes and to ensure that they comply with the relevant construction rules and specifications.

System diagrams are produced utilising an AutoCAD package to provide the basis for production of piping information for installation.

Ease of maintenance and testing is also taken account of during the design of the systems.

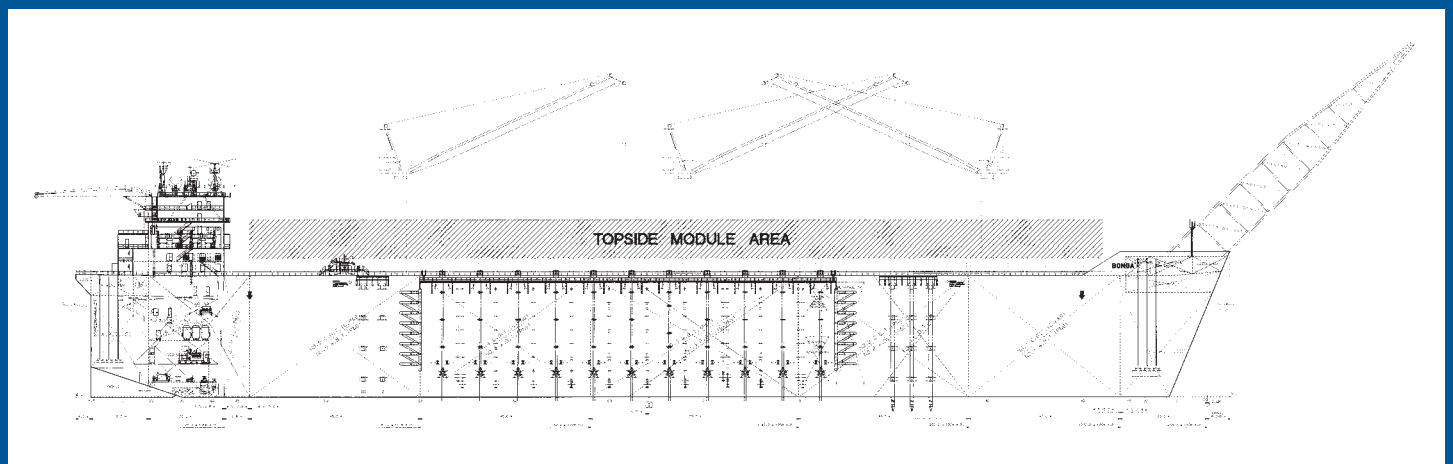
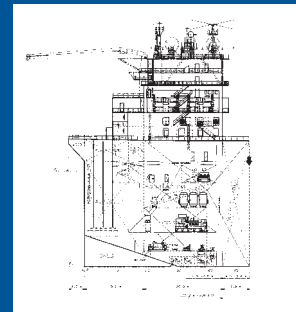
Purchase specifications based on the above systems and calculations can be provided to ensure that accessible, easily maintainable quality components are used.

Shipping Technology staff have been involved in the design of machinery arrangements involving limited space on various projects including commercial, naval and offshore vessels.

Those designs have been carried out at both concept and detailed phases of projects to incorporate the optimum operational and maintenance functions within boundaries set to maximise the revenue earning capabilities of the vessels in question.

Arrangements are based on logical processes in handling consumables, spares etc. at the same time, ensuring a safe and ergonomic working environment for the ship's crew.

The mechanical design team consists of engineers with extensive shipyard and merchant naval experience, providing an in-depth understanding regarding the operational requirements of Owners/Operators.



For further enquiries, please contact Harry Lee, Business Development Manager.

Tel: +44 (0) 20 7934 8160

Email: [harry.lee@shell.com](mailto:harry.lee@shell.com)

Web: [www.shell.com/shipping](http://www.shell.com/shipping)



## Electrical Design

The electrical design team has provided conceptual and detailed design studies for various refit, conversion and newbuild projects on a wide range of vessel types including oil tankers, LNG carriers, FPSOs and product carriers.

Designs are based on the principle of simplicity and reliability and are in full compliance with the requirements of any relevant regulatory bodies.

Experience and in-depth studies are applied to determine the demands for electrical loads, generation and distribution in the vessel. Optimisation of the equipment used is a prime concern and is dealt with to the highest degree. Purchase, installation and operational costs are taken into account during the design.

Electrical design covers all aspects of the ship's operation and includes automation and control systems as well as platform management systems utilising field bus technology and fibre communication systems. High, medium and low voltage switchboards are designed from block and single line diagrams through to control circuit and inter-connection diagrams and short circuit fault current analysis.

Topographical drawings, schematics, interconnection diagrams, cable schedules and bills of materials are developed to the relevant specifications, rules and standards for all systems, including stand-alone equipment and systems such as fire detection and dynamic positioning.

Our experienced team of design engineers utilise a range of specialist software covering such topics as lighting calculations and polarprints, and short circuit current calculations.

Electrical and electronic design and system integration services have been carried out for both marine and industrial applications incorporating feasibility studies, new installations and upgrade, refurbishment and conversion projects.

These have included:

- Complete electrical installations for low, medium and high voltage systems
- Lighting systems
- Cable sizing and routing
- Power generation and distribution combined with network analysis
- Power management systems
- Electro magnetic compatibility (EMC) compliance studies
- Instrumentation and control systems
- Electronic circuit and PCB design
- Network and communication systems
- Energy conservation systems
- Failure mode analysis
- Advisory, consultancy and inspection services



For further enquiries, please contact Harry Lee, Business Development Manager.

Tel: +44 (0) 20 7934 8160

Email: [harry.lee@shell.com](mailto:harry.lee@shell.com)

Web: [www.shell.com/shipping](http://www.shell.com/shipping)

## Special Highlight: Manoeuvrability

Critical to most ports and terminal operations is the ability to manoeuvre, particularly in confined waters.

Within Shell Shipping Technology, we utilise PC Rembrandt to provide innovative solutions to this problem. PC Rembrandt is a specialised module for the calculation and analysis of designed manoeuvring properties.

The system is used to predict ship manoeuvrability at an early design stage as required by IMO, and can produce data for wheelhouse posters, pilot cards and manoeuvring booklets.

The system can also be used for dimensioning of manoeuvring devices, for predicting ship manoeuvrability and for partly replacing expensive model tests.

This system, with computer generated imagery and expert assistance from Shell Shipping Technology, has been used successfully in the Bonga hull transfer to/from the River Tyne



Computer simulation improves vessel manoeuvring



For further enquiries, please contact Harry Lee, Business Development Manager.

Tel: +44 (0) 20 7934 8160

Email: [harry.lee@shell.com](mailto:harry.lee@shell.com)

Web: [www.shell.com/shipping](http://www.shell.com/shipping)

## Special Highlight: Small EP Projects Support

Shipping Technology has a long and extensive involvement with Shell Exploration and Production. The Bonga, Fluminense and other FPSOs are prime examples of the high level of support we are capable of providing for such large projects. However, we would also highlight that we are capable of supporting smaller operational projects.

In many instances where EP requires marine expertise in the transfer of equipment, Shipping Technology's team of experienced rigmovers and pilots can provide assistance which can save time and money.

Early Shell Shipping Technology involvement from the conceptual, design, tendering and contractor prequalification stages of a project can identify potential difficulties and provide solutions to be designed in, avoiding expensive, last-minute solutions.

The Awoba gas module moves in the USA and Nigeria are a recent example of smaller projects where we can provide on-site technical assistance to ensure a project is undertaken in the most efficient manner possible.



*The Awoba gas module move*

For further enquiries, please contact Harry Lee, Business Development Manager.

Tel: +44 (0) 20 7934 8160

Email: [harry.lee@shell.com](mailto:harry.lee@shell.com)

Web: [www.shell.com/shipping](http://www.shell.com/shipping)

## Floating Production Storage and Offtake Units (FPSO) Technology

Working with Shell Shipping Technology gives you access to tried and tested services and technology based on our in-depth involvement in the newbuild and conversion of FPSOs since the 1960s.

From the concept selection where our experts can assist in the systematic review of computerised sizing of cost and schedule estimates, to the preparation of tender documentation and assessment of the right shipyard, we leverage our ongoing relationships to make the best choices for your project. Our experts are capable of dealing with commissioning, sea trials, integration and construction. You can be sure of a one-stop solution with Shell Shipping Technology.

When you opt to convert a tanker into an FPSO, the real work starts. With us assisting every step of the way, we help smooth the process and procedures behind obtaining necessary approvals for your choice of a donor ship.

We assist in evaluating the strength and ability of the ship to operate in the field environment through fatigue analysis and provide structural enhancements if necessary. We are on hand during construction and even there to assist in rig tow and installation.

Not only must an FPSO be solidly built, it must also be solidly anchored. What goes on below the waterline to ensure that your FPSO doesn't start to drift is a science by itself. We have the expertise available to ensure that your FPSO system is designed and proven.

FPSOs are not required by maritime legislation to be classed under any Classification Societies. Therefore, an operating FPSO nearing the end of its field life may need to undergo a comprehensive marine risk assessment and review before it is considered operational for the next phase of the life-cycle.

We have assisted in a number of marine reviews for FPSOs operating in hostile environments such as the Schiehaillion, Okha and the Sea Eagle, EA Field off Nigeria. In each case, our experts were instrumental in assisting with the identification of issues, causes and solutions to ensure that your asset is operating in peak condition.



*FPSO en route to a new home*

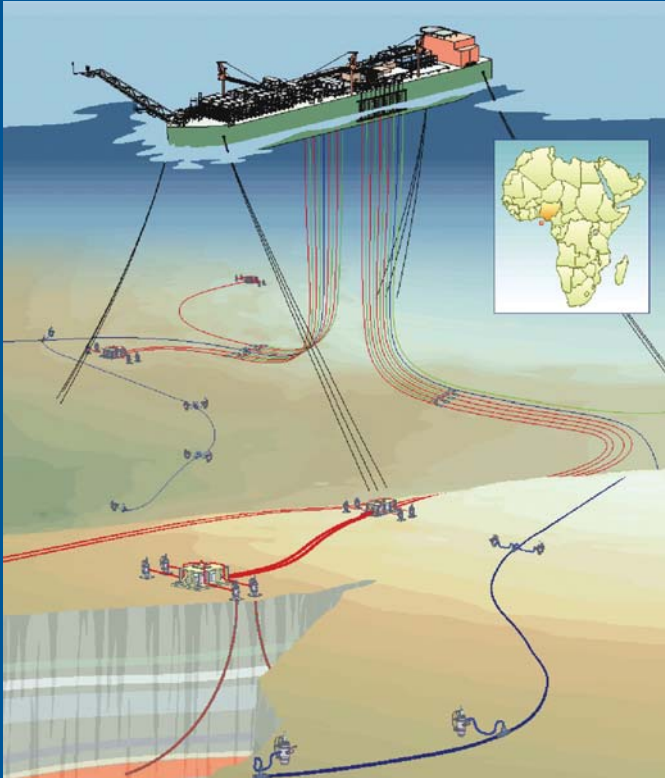
For further enquiries, please contact Harry Lee, Business Development Manager.

Tel: +44 (0) 20 7934 8160

Email: [harry.lee@shell.com](mailto:harry.lee@shell.com)

Web: [www.shell.com/shipping](http://www.shell.com/shipping)

## Recent FPSO and FSU Examples



**Project:** Enfield FPSO  
**Location:** 40km offshore from Australia's North West Cape  
**Production:** 100,000 bpd  
**Description:** Newbuild, double hull with a field life of 20+ years located in a severe cyclone area, deepwater (+350m) and environmentally sensitive.



**Project:** 2m barrel FPSO hull for Bonga, Nigeria  
**Shipyard:** SHI, Korea  
**Dimensions:** 295x58.6x32m (LBPxBMxDM)  
**First oil in November, 2005**



**Project:** Sea Eagle  
**Location:** EA Field, Nigeria  
**Production:** 140,000 bpd  
**Description:** First SPDC offshore FPSO and the 3rd largest FPSO in the world  
**First oil in 14 December 2002**



**Project:** Conversion of VLCC Sahara to FSU Fluminense  
**Location:** Bijupira-Salema Fields, Brazil  
**Production:** 120,000 bpd  
**Storage:** 1,300,000 bls  
**Description:** 15 Years Field Life  
**First oil in June, 2003**

## Marine, Ports and Terminal Advice

General and specialist surveys are undertaken by Shell Shipping Technology personnel who have established an excellent reputation and gained a wide range of experience in the field of surveys, audits and safety cases throughout the marine industry.

All surveys are carried out by experienced Marine Engineers and Master Mariners who are fully conversant with all relevant statutory regulations and regulatory body's requirements such as SOLAS and MARPOL.

The surveys/audits include the vessel's documented safety management system through to its application on board and the physical inspection of the equipment.

A wide range of surveys have been carried out by our Engineers on an extensive range of commercial, naval and specialist offshore vessels, including:

- Safety cases
- Condition surveys
- D.P. audits
- Pre-purchase survey
- Shipyards supervision

As projects move into a consolidation phase, the need to ensure proper operational management is in place grows stronger. Experienced negotiators would assist to support the running of your terminal operations, negotiate new tug contracts, cargo expediting services, vessel clearance and contracting strategies.

Our staff can assist in creating appropriate business processes and practical procedures for supporting daily operations. Our staff can also play the role of expert troubleshooters on an ad hoc basis.

The impact of upcoming legislation on marine operations will be severe. Shipping Technology assists in diagnosing the marine risk for your business in line with the latest developments on maritime rulings.

Shell is committed to maintaining a global leadership position in the Liquefied Natural Gas (LNG) industry. New market development activities need to be undertaken urgently. From LNG ship/shore safety studies to vessel interface and compatibility (as part of the opening of new trade routes) and Sales & Purchase (SPA) shipping advice, Shell Shipping Technology is ready to provide the necessary expertise to make the right decisions.



For further enquiries, please contact Harry Lee, Business Development Manager.

Tel: +44 (0) 20 7934 8160

Email: [harry.lee@shell.com](mailto:harry.lee@shell.com)

Web: [www.shell.com/shipping](http://www.shell.com/shipping)

## Shell in LNG Shipping

The operational expertise gained from extensive experience of day-to-day involvement in shipping is also an important resource available for input during the shipping acquisition process.

The Ship Management division in STASCO currently manages one of the largest LNG fleets in the industry and is located in the same London offices as the team that provides ship acquisition services. The Ship Management division can be utilised for consultation at all stages in the Plan Approval and Ship Construction Supervision process to ensure that the latest and current operational experience, particularly on operability, maintainability and safety are incorporated in new vessels.

The combined efforts of the Shipping Technology and Ship Management divisions have consistently delivered ships to their owners on time, budget and operated them safely and efficiently at the forefront of performance in the LNG trade.

STASCO has been involved in the ship management of LNG carriers for over 40 years. During this time it has been at the forefront of industry LNG ship management best practice and knowledge as evidenced by the safety record of vessel operations; early and extensive experience of all types of containment systems and, in particular, membrane technology systems; the unique supervision of LNG carrier life extension studies and unrivalled experience in the transfer of ship management 'know-how' to joint ventures in Malaysia, Brunei, Nigeria and Qatar.

### Ship Procurement

- Ship procurement (contract, specifications, clarifications)
- Factory Acceptance Testing of equipment
- Bid evaluation

### Full Approval and Execution

- Project execution for ships, LNG terminals
- Energy balance calculations
- Mass flow balance calculations
- Pipeline and machinery materials
- Plan approval
- Vessel enhancement
- Site supervision
- Project execution and yards
- Liaison with shipyards
- Sea trials attendance

In LNG shipping, Shell Shipping Technology provides a comprehensive range of services from feasibility and development studies through to ship/shore operations management, vessel acquisition, contract negotiation, vessel specification, equipment selection, plan approval, construction supervision, trials management and guarantee administration.

- 1964 Algeria to UK
- 1972 Brunei to Japan
- 1983 Malaysia I to Japan
- 1989 Australia to Japan/Europe
- 1990 Nigeria to Interim Trade
- 1994 Malaysia II to Japan
  - Korea
  - Taiwan
- 1999 Nigeria to Europe/USA
- 2000 Oman to USA/Europe
- 2001 Nigeria Plus to USA/Europe
- 2001 Shell G&P to spot trading
- 2005 Shell G&P to India
- 2006 Australia to China
- 2007 Qatar



### Key LNG Shipyards

Mitsubishi	Japan
Mitsui	Japan
Kawasaki	Japan
Hyundai	Korea
Daewoo	Korea
Samsung	Korea
Hanjin	Korea
Izar	Spain
Chantiers	France
IHI	Japan
NKK	Japan
Kvaerner Masa	Finland
Hudong	China

For further enquiries, please contact Harry Lee, Business Development Manager.

Tel: +44 (0) 207 934 8160

Email: [harry.lee@shell.com](mailto:harry.lee@shell.com)

Web: [www.shell.com/shipping](http://www.shell.com/shipping)

## Summary of Services

The scope of services on offer from Shell Shipping Technology encompasses the complete range of Marine & Engineering Design tasks.

Throughout all stages of the design process, we utilise fully integrated industry standard computer systems to provide comprehensive design support from the concept and feasibility stages through Class, Statutory and Owner plan approval, through to the provision of project management services. Accordingly, we are able to provide the complete design solution for the following extensive range of services:



### Newbuild, Conversion and Repair Project Support and Management

- Design services including structure, hull form, intact and damage stability, accommodation arrangements, engine room installations and systems, and electrical design
- Specification writing
- Plan approval
- On-site supervision
- Resistance and propulsion analysis
- Sea-keeping and manoeuvring analysis

### Compliance with Regulations

- Damage stability and damage consequences diagrams
- Shipboard Oil Pollution Emergency Plans
- Lightship Surveys Inclining Experiments
- Stability Books, Loading Manuals and Longitudinal Strength
- MARPOL double skin requirements
- Classification Society Rules – ABS, BV, DNV, GL, LR

### Ports & Terminal Services

- Operational Troubleshooting
- Manoeuvring Simulations
- Ship/Shore Compatibility
- Tugs Negotiation
- Sales and Purchase Agreement Advice
- Tugs Management and Installation

### Vessel Enhancement Projects

- Increased crew and passenger complements
- Increased freight capacity
- Improved accommodation facilities
- Vessel lengthening
- Stability enhancements
- Speed enhancement
- Improved manoeuvrability
- Additional power generation plants
- Alternative propulsion systems
- Engine room reconfiguration

## Our People...

### Electrical Design

- Switchboards, Control panels
- Power plant/Power Plant upgrades
- Feeder Systems
- Thruster Control and Navigation Consoles
- Fire Detection Systems
- Distribution systems: low, medium and high voltage
- Intrinsically safe and other specialised installations

### Other Services

- Ship search, suitability and comparison studies for conversion projects
- Project Management
- Transfer of manual drawings into CAD (e.g. for presentation drawings such as 'Fire Control & Safety' plans)
- Ship surveys for current owners and potential purchasers
- Scanning of drawings in raster format with automated vector conversion for storage
- Procurement management
- FMEA studies
- Safety case and Specialist Surveys



For further enquiries, please contact Harry Lee, Business Development Manager.

Tel: +44 (0) 20 7934 8160

Email: [harry.lee@shell.com](mailto:harry.lee@shell.com)

Web: [www.shell.com/shipping](http://www.shell.com/shipping)