

# OFFSHORE AND MODULAR YARDS





NOTHING TOO HEAVY, NOTHING TOO HIGH

# ABOUT US

## WITH STATE OF THE ART EQUIPMENT AND VALUE ENGINEERING, WE OFFER OUR CLIENTS CREATIVE SOLUTIONS.

At Sarens, we have the noble mission to be the reference in crane rental services, heavy lifting, and engineered transport for our clients. With state-of-the-art equipment and value engineering, we offer our clients creative and intelligent solutions to today's heavy lifting and engineered transport challenges.

We are able to offer our clients ready-made innovative solutions thanks to our subsidiaries around the world. With more than 100 entities over 60 locations operating without borders, we are the ideal partner for small-scale to mega-scale projects.

Safety and excellence in all we do are paramount to us. We strive continuously to establish a safe environment for our personnel, the client's employees and the equipment we operate and handle.

While we continue to build our future on the foundations of our rich past and successful methods, we ensure our clients that we will stay ahead of the game with innovative approaches for your heavy lifting and specialized engineered transport needs. We will keep breaking ground and secure that your projects are delivered in a safe, and cost-effective way, while making sure everything is on time.

Sarens has been a heavy lift partner for offshore projects for 30 years. With our wealth of experience, we are the best partner choice for offshore and module yard projects all around the globe. Our equipment and our people have the assets and skills necessary to make sure all projects are being tackled with tailor-made engineering and specialised heavy lifting.

Until now, we successfully executed more than 200 larger projects including weights up to 18.000T. During

the following years, we will keep on pushing to remain the preferred heavy lift partner for our international clients, by offering the best technical solutions and performing projects in the safest and most efficient way.



# OUR SERVICES

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Being in the offshore and modular yard business for over 30 years, we are the best choice for any project that our clients want to undertake.

We offer the construction and dismantling of oil and gas offshore rigs, the offshore wind industry, and civil offshore construction.

Sarens ensures all projects are executed with perfection. We implement our SHEQ (Safety, Health, Environment, and Quality) policy on all aspects of the job at hand to secure zero incidents. This policy is mainly a guideline for all our employees and projects to ensure safety to the people, the environment, and the equipment.

When installing the offshore and modular yards, we provide a full-option package. This means everything included in the construction or dismantling of rigs and yards, including project management, SHEQ, and our specialised.

We also provide the maintenance and necessary repairs of the offshore installations.

Trusting Sarens as a partner for the construction or dismantling of offshore and modular yards comes with a number of key benefits, that make us the most reliable business partner in the market.

Here are the key benefits connected to our service:

- We provide creative and tailor-made solutions
- We are the global heavy lift partner for over 60 years
- Our technical solutions are customised to each project
- We operate in accordance with the highest offshore standards
- We have over 30 years offshore experience
- All of our offshore equipment is offshore-certified
- Our offshore personnel is offshore-certified

When considering all these aspects, it becomes clear that our years of experience and specialised equipment make us the optimal associate for any project, as for us, nothing is too heavy, nothing is too high.



# OUR EQUIPMENT

Sarens used the following equipment for project execution:

- Hydraulic cranes
- SPMTs
- Barges
- Tower lifting systems
- Jacking systems
- Skidding

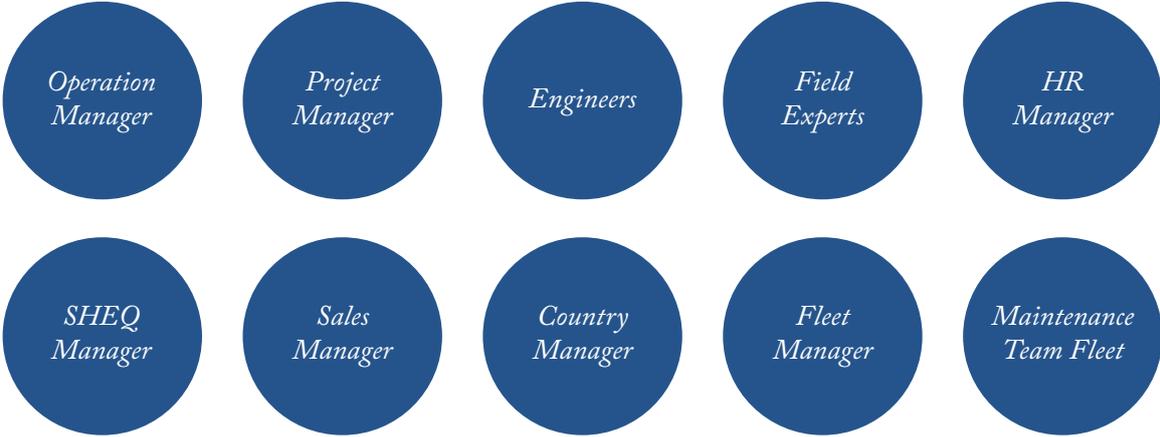




NOTHING TOO HEAVY, NOTHING TOO HIGH

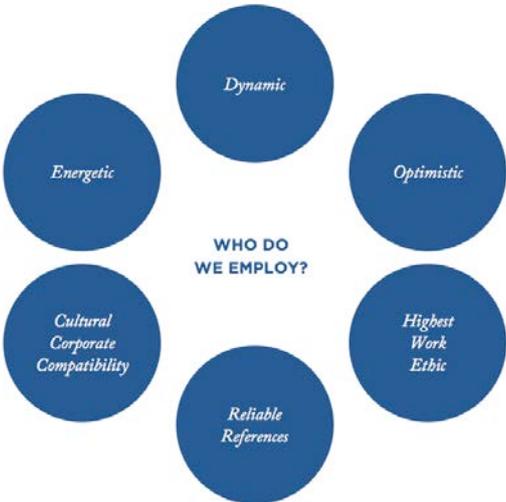
# OUR PEOPLE

At Sarens, we play a key role in the offshore and modular yard industry and support our clients in the most efficient way. We rely on our people to ensure every project is executed in a structured, safe, and efficient manner. We employ engineers, lawyers, finance experts, field personnel, safety and quality advisors, and sales consultants.



## WHO DO WE EMPLOY

To secure a quality-service for our clients, our team consists of a variety of professionals. We have well-established hiring procedures that guarantees us qan arsenal of dynamic and qualified experts from all around the world.



## WE IMPROVE OUR TALENT

Sarens also provides constant training to employees. In this way, all of our representatives are skilled to supply Sarens with the benefits of the latest methodologies in the field both on a back-office and an on-site level. We believe in continued education and, to that end, we have our own Learning Management System, and provide SWOT analyses in our Assessment and Development centre. Through the growing opportunities we provide, our employees work in a framework of constant improvement.



# CASE STUDY I

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## MODULE TRANSPORT RIGGING AND LIFTING, SOUTH AFRICA

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Sarens in South Africa was awarded the contract for the transportation and rigging of 24 modules encompassing an estimated design mass in excess of 1.500T, the largest being 248T. This was undertaken in alignment with Sasol's Integrated Management Team's (Sasol-IMT) requirements. The Sasol-IMT constitutes a collaborative conglomerate of various third party EPCM, design, commercial and modularisation specialists. The Sasol-IMT, which would be heading up the construction management for the transport and rigging, in turn contracting Sarens on technical merit.

The modules were pre-fabricated 12 km off-site at the module assembly yard, and constructed specifically to include completed structural steel, mechanical plate work, piping, electrical and instrumentation (SMEIP) disciplines.

The project was planned to be undertaken within a planned baseline duration of 90-days, executing the works in implementing the use of the following major machinery:

- Terex/Demag CC8800-1
- Kamag 2400 36 AL SPMTs
- LTM 1750-9.1
- AC500
- GT900

Meticulously undertaken planning, route studies, collaboration, and coordination with municipal, provincial, national, international, and intercompany stakeholders have all cumulatively contributed vastly to Sarens' interim success in the completion of this project.

From module design to manufacture, and for the purpose of determining lifting equipment requirements, the Sasol CTFE project, is the African continent's first such project whereby Sarens continuous input was engaged to the extent of dimensional confirmations, determination of actual weights, and actual Centres-of-Gravity for the purpose of executing the project deliverables timely and safely.

# CASE STUDY II

## OIL FIELD MOVE, STORD, NORWAY

Sarens recently performed the load-out, weighing, and jacking of an oil platform module at a quay in Stord, Norway. The module is destined for the Johan Sverdrup Oil Field in the North Sea, off the coast of Norway. It will be sailed to the field in early 2019, where it will house more than 200 workers (700 if all shifts are present). The platform will include sleeping areas, kitchen, dining room, recreational areas, and utility control systems.

Sarens executed the project on behalf of client Kvaerner AS, which is building the housing platform in partnership with KBR. The project scope included engineering, procurement and fabrication, use of Sarens equipment, and execution of the load-out, jacking and weighing operations. It also required careful management, planning, reporting, and administration on the part of the Sarens team.

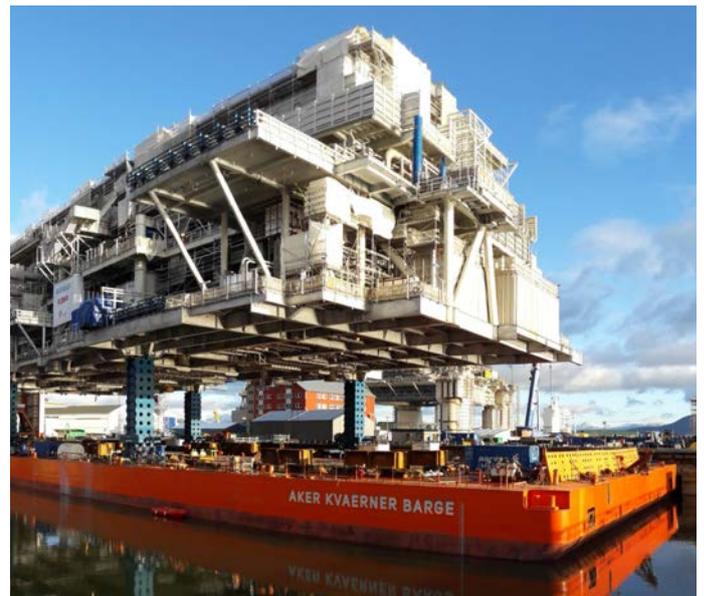
For the load-out operation, Sarens transported the 110x61x26-metre module from the fabrication hall to the barge, a distance of approximately 200 metres. For this, the crew used:

- 432 axles Kamag K24ST
- 22 power packs
- 18 ballast pumps
- 24 driving ramps
- 700 tonnes of support steel

Sarens operators then used thirty-two 500-tonne weighing cells to determine the LC-LL module's exact weight, which totaled 12.200 tonnes. Next, they jacked the module approximately 13 metres above the barge deck so the grillage could be installed. For this, they used four towers of CS 5000 jacking systems. At the peak of this operation, Sarens crew numbered 18 people.

Most of the Sarens equipment was mobilized from headquarters by ship, while the rest arrived by truck. It took 20 days to complete the rigging, as the complex surface under the module required a lot of cribbing on the trailers.

"Despite heavy rain and high winds, the operation was perfectly executed according to the project plan," says Project Manager Tor Arne Naess. Sarens congratulates all of the engineers and operators who made this project such a success.



# OUR PROJECTS

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**LOCATION:** Aker Verdal Yard, Verdal, Norway  
**EQUIPMENT:** skidding, 16 X 200T strand jacks, 44 X 650T/HR ballast pumps, computerized level control system

Sarens in Norway developed and built a computerized ballast control system. The system consists of 44 submersible ballast pumps and a computerized Level Indication System, that automatically keeps a barge of 190 m x 50 m x 11 m in level with the quay, within millimetres of tolerance. Since 2000 Sarens has loaded out 11 jackets at the Aker Kvaerner Verdal Yard in Norway

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**LOCATION:** Ulsan, Korea  
**EQUIPMENT:** strand jacks, quay jacks, break-out jacks

Sarens successfully executed the load-out of a topside. As Sarens' client had only a limited time frame available between the ship's arrival and the load-out, our biggest challenge proved to be the installation of all our equipment within a very short period. Sarens' team succeeded in preparing approximately 300 strands of the Strand Jacks within one day instead of the industry standard five. After a smooth preparation, the load-out was executed successfully and four hours faster than planned.

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**LOCATION:** Melbourne, Australia  
**EQUIPMENT:** Kamag 2400, 24 Axle lines SPMTs, 2 PPUs

Sarens transported a navy vessel module weighing 350T and measuring 26m long, 13m wide and 22m high with 2 x 12 SPMTs at BAE Systems Dock yard in Melbourne. Manoeuvring through narrow sections of the Williamstown dock yard proved to be a challenge, as well as the 10% slope onto Nelson Pier.

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**LOCATION:** Rozenburg, The Netherlands  
**EQUIPMENT:** CC 2800-1, LR 1750

Keppel Verolme completed the extensive upgrade of the semi-submersible drilling vessel "Scarabeo 6". Sarens was contracted for all the heavy lifts and site moves for this upgrade, taking place in one of the biggest dry docks in the world. After bringing the vessel into the dry dock, a 600T CC 2800-1 and 750T LR 1750 were rigged with 80m of main boom and superlift. The heavy lifts consisted, amongst others, of new blister parts (260T) and sponsons (100T). This was not one of the heaviest lifts Sarens has ever performed, but the removal of the crown block from the derrick at a height of 112m was quite noteworthy. Preparation of the work started in 2011 and, after mobilization of the cranes in April 2012, the heavy lift scope was executed within the foreseen time frame of four weeks. Sarens' complete scope ended in November 2012 without any lost time incidents.

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**LOCATION:** Hoboken, Belgium  
**EQUIPMENT:** SPMTs

Sarens took care of the load-out of a giant offshore high-voltage station at the Fabricom Module Yard in Hoboken, Belgium. The module is part of what would be the largest windfarm in the world, London Array. Two modules of 1.250T each were loaded onto pontoons and were shipped to London Array, near Kent. The first phase of the project was ready in 2012, in time to provide power for the Olympic Games held in London in 2012.

# KEY FACTS

## SARENS IS THE RECOGNIZED WORLDWIDE LEADER IN HEAVY LIFTING AND ENGINEERED TRANSPORT.

With state of the art equipment and value engineering, Sarens offers its clients creative solutions to today's heavy lift and transport challenges. With offices in more than 65 countries and dedicated employees, we are well prepared to support your next project.

 **9**  
REGIONS

 **65**  
COUNTRIES

### CRANES



GIANT CRANE



HYDRAULIC CRANES



LATTICE BOOM CRANES



HEAVY LIFTING TOWER CRANES

### TRANSPORT



CONVENTIONAL TRAILERS



MODULAR TRAILERS



SPMTs

### CUSTOMISED EQUIPMENT



SKIDDING



BARGES



GANTRIES



JACKING SYSTEMS



STRAND JACKS

## GLOBAL PRESENCE





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