

OFFSHOREMARINE

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JACKED UP DEMAND FOR KEPPEL'S DESIGNS

**Top yard
for the jobs**

Growing ties



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It has been just two months into the new year, and already, Keppel FELS has garnered a series of new orders for its proprietary jackup rigs from Transocean, EnSCO, Discovery Offshore and Clearwater Capital Partners.

The new orders, totalling eight units, were placed for Keppel FELS' proprietary Super A Class and B Class Series of rigs.

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Maersk awards Keppel two newbuild CJ70 jackups



Confident of Keppel FELS' capabilities to deliver all types of complex offshore projects safely, on time and within budget, Maersk has entrusted it with the construction of two Gusto MSC CJ70 jackups

The Maersk-Keppel partnership hit high notes on 15 February 2011 with new orders for the construction of two Gusto MSC CJ70 harsh environment jackup rigs.

The first rig is scheduled for delivery near end-2013, with the second rig following seven months later. As part of the agreement, Maersk has the option to build an additional jackup unit with Keppel FELS.

CH Tong, CEO of Keppel O&M, said, "The Maersk-Keppel partnership, spanning decades,

has achieved many significant milestones. We are pleased that our faithful customer, Maersk, has chosen Keppel to support them in the next phase of their rig expansion programme.

"These latest contracts reaffirm Maersk's confidence in Keppel's ability to deliver all types of complex offshore projects safely, on time and within budget in this win-win partnership. I am confident that the completed rigs will augment Maersk's premium fleet and position them at the forefront of harsh environment operations."

Claus V. Hemmingsen, CEO of Maersk Drilling, said, "We believe in continued strong demand for high capacity jackup rigs on the Norwegian Continental Shelf, and have a strong track record since 1990 of operating in this challenging environment. Our commitment to build another two ultra harsh environment, high capacity rigs has been well received by our customers.

"The excellent performance and consistency, which Keppel FELS has demonstrated on the various projects we have had together, sealed our decision to entrust these important newbuilds to them."

The CJ70 rigs are especially suited for operation in the harsh environment of the North Sea at water depths up to 150 metres. The high capacity features include offline pipe handling and simultaneous operations as well as an extended cantilever reach, which will significantly increase the drilling efficiency compared to conventional units.

The enhanced design also includes multi-machine control on the drill floor, which will allow for a degree of automation to ensure a safe operation and consistent performance. A total of 150 people can be accommodated on board in single cabins.

Top yard for the jobs

Decade-long operating experience in Brazil puts Keppel FELS Brasil ahead of the curve in offering a full range of offshore solutions, including the fabrication and integration of production topsides.

The company was awarded two Floating Production Storage and Offloading (FPSO) topside contracts in February 2011 – one from Single Buoy Moorings Inc. (SBM), and another from MODEC and Toyo Offshore Production Systems (MTOPS).

YY Chow, President (The Americas) of Keppel O&M, said, “We are heartened that SBM and MTOPS have reaffirmed our position as the choice solutions partner in Brazil’s offshore and marine industry with these contracts to fabricate and integrate modules for their latest FPSOs. As we grow our competencies and track record as the most established shipyard in Latin America, we will continue to nurture win-win relationships with our valued customers.

We see the market improving and our yard has the capacity and capability to take on more jobs.”

Keppel FELS Brasil’s contract with SBM is for the fabrication and installation of topside modules on FPSO Cidade De Paraty, which was awarded in association with Queiroz Galvão Óleos e Gás S.A. (QGOG). The vessel is currently undergoing conversion at Keppel Shipyard in Singapore.

YY Chow added, “Like our recent delivery of P-57, this project demonstrates the synergy of the Keppel O&M shipyards in providing a comprehensive suite of services to our customers and brings to bear our near market, near customer strategy.”

The work scope will include the fabrication and installation of six process modules and a riser gantry, as well as the installation and integration of another six process modules supplied by SBM.

FPSO Cidade de Paraty is expected to arrive at the BrasFELS shipyard in Angra dos Reis in 1Q 2012, and be delivered in 4Q 2012 for operations in the pre-salt region of the Santos Basin. The vessel will have a production capacity of 120,000 barrels of oil per day, and be able to compress 5 million cubic metres of gas per day.

In a separate contract with MTOPS, BrasFELS will undertake the module fabrication and integration of the FPSO Cidade de Sao Paulo MV23, which was awarded in association with Schahin Engenharia S.A.



In replicating Keppel O&M’s best practices and systems, Keppel FELS Brasil is able to offer a full range of offshore and marine solutions, including the fabrication and integration of production topsides for FPSOs

The yard’s scope includes the fabrication of topsides modules such as riser manifolds, laydown areas and the flare tower, as well as the assembly and integration of fabricated pancakes/skids.

To be completed in 4Q2012, the FPSO will be deployed in the pre-salt region of the Santos Basin. It will have a production capacity of 120,000 barrels of oil per day, and be able to compress 180 million cubic feet of gas per day and store 1,600,000 barrels of oil.

Double delivery to Rowan

Keppel O&M augments Rowan's high specification rig fleet with the delivery of the second of three KFELS N Class units and the third of four EXL jackups.



Celebrating the naming of Rowan Stavanger at Keppel FELS were Lady Sponsor Amy Ralls, Matt Ralls (extreme left), President and CEO of Rowan Companies, Inc., CB Choo (centre), Chairman of Keppel O&M, as well as Michael Dowdy, VP Engineering of Rowan Companies, Inc

"We take great pride in our vision of 'committing ourselves to an injury free workplace' as stated in Rowan's Mission Statement and we are proud to work with a company that is just as committed to that vision. Congratulations on the outstanding safety record your team had during the construction of the Rowan Viking."

*David Russell
Executive VP of Drilling Operations
Rowan Companies, Inc.*

ROWAN STAVANGER

The harsh environment KFELS N Class jackup Rowan Stavanger has been delivered safely, on time and within budget by Keppel FELS to Rowan Companies, Inc. (Rowan). The unit left the yard for Norway on 1 February 2011. It has received two Letters of Intent from Talisman Norway; the first for accommodation in the Norwegian sector of the Northsea, while the second is for drilling in the UK and Norway.

Rowan Stavanger was named at Keppel FELS on 22 January 2011 by Lady Sponsor Amy Ralls, spouse of Matt Ralls, President and CEO of Rowan.

Matt Ralls said, "Our acquisition of Skeie Drilling and Production and three high specification KFELS N Class rigs in the third quarter of 2010 has strengthened Rowan's market-leading position worldwide for jackups with hook-load capacities of two million pounds or more while providing us with the additional capacity to meet our customers' stringent operating requirements for their most challenging wells.

"Our first KFELS N Class jackup, the Rowan Viking, is expected to commence a 19-month assignment in the UK sector of the North Sea

Continues on page 6...

Continues from page 5...



The proprietary design of Keppel's R&D arm Offshore Technology Development, the KFELS N Class jackup is able to operate efficiently in some of the harshest offshore environments in the world

with Total UK in March 2011. The Rowan Stavanger is yet another outstanding product of the talent and hard work demonstrated by the Keppel FELS and Rowan project teams. The high specification KFELS N Class rigs are among the most capable jackups in the world and we are very pleased to add them to the Rowan fleet."

Equipped for demanding drilling requirements in harsh weather environments, this high specification jackup design is a product of Keppel's rich experience in constructing rigs for the North Sea region since 1985. The proprietary design of Keppel's R&D arm Offshore Technology Development (OTD) the KFELS N Class rig has features that allow drilling and production concurrently.

At 568 feet (extendable to 598 feet) or about 56 storeys tall, this jackup unit can operate in severe weather conditions in water depths of 400 to 500 feet, which are 40% deeper than traditional units in benign waters. It is also able to drill to depths of 35,000 feet, which is 15% deeper compared to existing harsh environment jackup rigs.

KS Wong, MD of Keppel FELS, said, "In recent times, Norwegian oil companies have expressed their intent to drill additional exploration wells in 2011. Some 60 wells have been identified and 23 are located in the North Sea.

“In addition to the growing high specification jackup market, this bodes well for companies with ready-to-drill premium jackups in hand. We trust that the N Class jackups will prove to be valuable assets to Rowan as it answers the call for demanding drilling services.”

Construction of the third KFELS N Class rig at Keppel FELS is on schedule; it is expected to be completed in the second quarter of 2011.

ROWAN EXL III

Over in Brownsville Texas, Keppel AmFELS delivered the third of four EXL jackup rigs to a subsidiary of Rowan ahead of schedule and within budget.

The jackup was christened Rowan EXL-III on 22 December 2010 by Lady Sponsor Barbara Ladner, spouse of Laron Ladner, Operations Construction Manager.

Since departing the Keppel AmFELS yard, the unit is on location in the

Gulf of Mexico and is contracted with McMoRan Exploration Company till May 2012.

David Russell, Rowan’s Executive VP of Drilling Operations, said, “High-end jackups will have a key role in the future of offshore drilling. Demand for such units is strong.

“The addition of the EXL units to our high specification jackup fleet fortifies Rowan’s market leadership in this segment. We are delighted with the early and safe delivery of Rowan EXL-III, made possible by Keppel AmFELS’ dedication and the strong teamwork between our teams.”

GS Tan, President of Keppel AmFELS, said, “Being strategically located in the Gulf of Mexico enables Keppel AmFELS to serve our key customers well.

“We are pleased to build on our valued partnership with Rowan, with the superb completion of the third EXL jackup. We are confident that this fine jackup will deliver the outstanding performance that sets apart Rowan’s EXL series of high specification rigs, which serve its customers optimally.”

Meanwhile, Keppel AmFELS is progressing smoothly with the construction of Rowan’s fourth jackup rig, which is on track for delivery in 1Q2012.



Keppel AmFELS achieved another milestone with the delivery of Rowan EXL-III, the third of four EXL jackups, to a subsidiary of Rowan ahead of schedule and within budget

Growing ties

With its long-standing and extensive business ties with Brazil, Keppel is often called upon to support Singapore's efforts to cultivate bilateral relations with the country.

Well-acquainted with the Brazilian market and passionate about its people and culture, CB Choo, CEO of Keppel Corporation and Chairman of Keppel O&M, serves as Singapore's Non-Resident Ambassador to Brazil.

Marcio Moraes, the host of popular travel and business television shows in Brazil, was in Singapore recently to conduct an interview with CB Choo on the nation's deepening ties. *OffshoreMarine* shares the highlights of this interview.

Q. HOW DID KEPPEL'S THREE DECADE-LONG TIES WITH BRAZIL AND ITS PEOPLE BEGIN?

We have known Petrobras, Brazil's national oil company, since the 1980s, when we did some repair jobs for them. At that time, there was a rig boom, but Petrobras was more focused on Europe. Most of their rigs were built in France and they were not ready to come to Asia.

In the 1990s, Odebrecht, a Brazilian company which owned some drilling rigs, brought some jackups for Keppel to repair. Odebrecht subsequently invited us to partner them in jobs, and we jointly bid for the tender from Petrobras for the production semisubmersible P-18. The agreement was for us to build the hull in Singapore, and



From left: Mr Sergio Cabral, Governor of Rio de Janeiro, CH Tong, CEO of Keppel O&M, Mr Lula Da Silva, the former Brazilian President, CB Choo, Chairman of Keppel O&M, celebrating the smooth completion of FPSO P-57 at Keppel FELS Brasil's BrasFELS yard in October last year

Odebrecht would do the topside in Brazil. We successfully completed P-18, paving the way for many more projects.

Q. HOW DOES KEPPEL STRENGTHEN ITS BRAZILIAN Foothold AND GLOBAL MARKET LEADERSHIP?

The oil business is a very nationalistic business, and we understand that it is the driving force for governments, so we work closely with the governments.

Singapore has no home market, as such we need to be near our customers and their markets – this is the only way to develop our business. We also believe that our customers must win so that we can have a sustainable business.

Q. HOW MIGHT BRAZILIAN BUSINESSES BENEFIT FROM SINGAPORE?

Singapore is very complementary to Brazil. We are a hub for the Asian region and we welcome businesses to Singapore.

Keppel is currently combining our expertise in our key businesses, namely offshore and marine, infrastructure and property, to tap opportunities in the area of urbanisation and sustainable development. We have formed a team to focus on this, and we think there are abundant opportunities in Asia, especially in China.

Singapore went through urbanisation and today we are a modern city with good housing, infrastructure, clean air and water. Brazilian companies can come to Singapore to understand all the urbanisation issues which Singapore had to tackle. They can also reach out to other parts of Asia through Singapore.

I would like to extend a personal invitation to all Brazilian citizens, businesses and government officials to come to Singapore, to tap on Singapore's position as a hub for 2.5 billion people in Asia.

Eye on Brazil

Queiroz Galvão Óleo e Gás' (QGOG) senior executives speak on the company's operations and their thoughts on recent developments in Brazil's robust oil and gas market.



One of the largest private groups in Brazil, QGOG owns and operates five semisubmersible drilling rigs with up to 2,700 meters water depth capability

QGOG is one of the largest private groups in Brazil, employing over 30,000 people. Today the Company owns and operates five semisubmersible drilling rigs with up to 2,700 meters water depth capability, in addition to six onshore drilling rigs comprising four conventional and two helicopter type rigs. QGOG's headquarters is in Rio de Janeiro, while its operational bases are strategically placed throughout the country in Macaé, Manaus and Rio das Ostras.

In August 2006, QGOG and Keppel FELS joined hands for the world's first DSS™ 38 semisubmersible, Gold Star. This

was also Keppel FELS' first drilling rig for deployment in Brazilian waters. Two years later, QGOG reiterated its confidence in Keppel with a repeat order, Alpha Star (see page 10).

Both Gold Star and Alpha Star have a six year contract with Petrobras for the exploration and production of wells in Brazil. Gold Star is currently operating in Santos Basin, while Alpha Star is expected to leave Singapore by early April and start operations in July this year. The two rigs were contracted at day rates of around \$400,000 each, excluding mobilisation fees.

Shedding light on the near term day rate trends in Brazil, Jose Augusto Moreira, Commercial Director of QGOG, said, "Based on the trends in the last two or three years, I think day rates will stay flat. Petrobras is offering a substantial proportion of the contracts in Brazil and the contracts they are offering are long term contracts, as such they have much bargaining power over day rates. Additionally, there is aggressive bidding by drilling companies to win contracts with Petrobras."

Besides the two DSS™ 38 units, QGOG and Keppel have worked together on repair and upgrading projects. Additionally, together with SBM, QGOG is involved in a Floating Production Storage and

Offloading (FPSO) topsides project with Keppel (see page 4).

With a track record of success in a range of projects, QGOG and Keppel are eager to extend their relationship with further collaborations.

Guilherme R.V. Lima, CFO of QGOG, said, "We are negotiating with Keppel FELS Brasil for two deepwater semisubmersible rigs. The outcome of this negotiation is tied to whether we are successful in the Petrobras tender. We are also negotiating with other shipyards for the two semisubmersibles. However, we prefer to partner Keppel because of our extensive relationship with the Group."

Moreira believes that Petrobras may have to rely on rigs delivered from international yards to meet a potential shortfall in its rig count through 2012. However, until the outcome of the tender for the 28 locally-build deepwater drilling units are settled, he thinks the oil major is unlikely to enter into contracts for rigs built outside Brazil.

Moreira added, "At this moment, QGOG is focused on Brazil as we have a lot of work to do there. However, should QGOG find any good international opportunities, we are open and ready to work outside Brazil."

Another star is born

Keppel FELS is on track for an early and safe delivery of Alpha Star, the second of two DSS™ 38 semisubmersible rigs, to Brazil's Queiroz Galvão Óleo e Gás (QGOG).



Celebrating the naming of Alpha Star at Keppel FELS were Lady Sponsor, Ana Maria Elia de Queiroz Galvão (seated), CB Choo, CEO of Keppel Corporation and Chairman of Keppel O&M (extreme left), Guest-of-Honour Mr S Dhanabalan, Chairman of Temasek Holdings (2nd from left), CH Tong, CEO of Keppel O&M (centre) and Dr Lee Boon Yang, Chairman of Keppel Corporation

Alpha Star was named on 12 February 2011 at Keppel FELS by Lady Sponsor Ana Maria Elia de Queiroz Galvão, spouse of Ricardo de Queiroz Galvão, Co-Chairman of Queiroz Galvão Group. The event was witnessed by Guest-of-Honour, S Dhanabalan, Chairman of Temasek Holdings.

With a stellar construction record, Keppel FELS has been awarded a total of S\$40,000 in safety bonuses from QGOG. The rig has been chartered by Petrobras for six years to support exploration and production activities in offshore Brazil.

CH Tong, CEO of Keppel O&M, said, "The Alpha Star is a shining example of great teamwork and reflects a complete alignment of goals and priorities between Keppel FELS and QGOG. Together, we have successfully achieved an efficiency boost of 20% on this second rig, without compromising the safety of our people and workplace.

"We are confident of delivering Alpha Star well in advance to our valued customer, and look forward to the moment when it starts to contribute actively to Brazil's exploration and production efforts."

Antonio Augusto de Queiroz Galvão, Chairman of Queiroz Galvão Group, said, "Keppel FELS has proved to be a winning partner for QGOG. We have worked together on several newbuilding, upgrading and repair projects. Keppel's commitment to deliver high quality has been unequivocal across its yards in Singapore and Brazil.

"The smooth construction of Alpha Star validates our trust in Keppel. We are confident that Alpha Star will follow in the footsteps of its sister rig, the DSS™ 38 Gold Star, which is

“Keppel FELS has proved to be a winning partner for QGOG. We have worked together on several newbuilding, upgrading and repair projects. Keppel’s commitment to deliver high quality has been unequivocal across its yards in Singapore and Brazil.”

*Antonio Augusto de Queiroz Galvão,
Chairman of Queiroz Galvão Group*



Alpha Star, the second of two DSSTM 38 semisubmersible rigs built by Keppel FELS, is on track for an early and safe delivery to Brazil’s QGOG

turning out stellar performances for Petrobras in Brazil.”

In addition, Guest-of-Honour S Dhanabalan spoke of the successful partnership between Keppel FELS and QGOG. He said,

“Keppel’s mutually beneficial ties with Brazil and Brazilian companies show the immense potential of this partnership. Brazilian drillers and operators have been coming to Keppel in Singapore for their rig

construction and vessel conversion needs.”

Further elaborating, Dhanabalan said, “Keppel has correspondingly developed its presence in Brazil as evidenced by its shipyards in Angra dos Reis and Santa Catarina. Through these shipyards it is transferring know how and increasing local content, thus creating economic and employment benefits for the Brazilian people.”

Jointly developed and owned by Keppel’s Deepwater Technology Group and Marine Structure Consultants, the DSS™ 38 design is in the league of some of the world’s most advanced drilling semisubmersibles.

DSSTM 38 is rated to drill 30,000 feet below mud line in over 9,000 feet water depth. It has an operational displacement of over 38,000 tonnes and can accommodate 130 men. It also features both vertical and horizontal riser storage and is configured with eight 3,000 kW azimuth thrusters to keep the rig in position.

Designed to maximise uptime with reduced emissions and discharges, a DSS™ 38 rig is well-suited to handle the operational requirements in the deepwater “Golden Triangle” region, which comprises Brazil, West Africa and the Gulf of Mexico.

Expert in repairs



ENSCO 7500



HAKURYU-5

Keppel FELS' sterling track record for the design, construction and repair of mobile offshore drilling units and floating production systems, makes the yard an ideal solutions provider to customers worldwide.

Some of the recent repair jobs that came under the expert hands and care of the Keppel FELS team include semisubmersible drilling rigs ENSCO 7500, Hakuryu-5, Nan Hai 6 and Ocean America.

ENSCO 7500

Arriving at Keppel FELS in September 2010 after carrying out its drilling contract in Perth, Western Australia, ENSCO 7500 is currently undergoing upgrade, repair and refurbishment work.

The major job scope comprises significant life extension work, renewing steel and pipes, operational enhancements, overhauling machinery, as well as expanding and updating the living quarters.

Following the completion of upgrading works in Singapore, Ensco's semisubmersible will be bound for South America. Awarded a multi-year charter from Petrobras, ENSCO 7500 will take on development work at the Papa Terra field in the Campos Basin. The rig is scheduled to begin operations in offshore Brazil during the third quarter of 2011.

HAKURYU-5

Semisubmersible drilling rig Hakuryu-5 made a repeat visit to Keppel FELS in the same year, arriving at the yard in December 2010 after its first visit earlier on, from July to September.

Upon completing its drilling contract with Salamander Energy plc in Bontang PSC, East Kalimantan in Indonesia, Hakuryu-5 is back in Singapore again for repair and refurbishment work.

The major scope of work for Japan Drilling Co.'s (JDC) unit

comprises blasting and painting of the ballast tanks, internal vertical bracings and external columns, and replacement of anodes, machinery, steel components and pipes.

Hakuryu-5 will be headed to Myanmar, off the Rakhine coast, to fulfill a drilling contract with Daewoo International Corporation. With room for more refurbishment, it will be set to work for six to seven months before possibly returning to Keppel FELS for another round of makeover.

Keppel FELS' Repair Manager, Lesley Yong, shared, "It was some time ago when JDC first worked with Keppel on Hakuryu-3 and we are very glad that they have returned to us for the repair and refurbishment of Hakuryu-5, not once but twice in the same year."

NAN HAI 6

Going the extra mile for its customers has paid off once again for Keppel.



NAN HAI 6



OCEAN AMERICA

Expressing his appreciation to Keppel FELS for a job well done on the Nan Hai 6 rig repair project, Yang Jun, GM at China Oilfield Services Limited (Australia), said, "The project teams of Keppel Offshore & Marine are very customer-oriented and they have shown dedicated teamwork to overcome challenges together in the course of work.

"This repair job has been completed safely and professionally in a tight time frame and we are proud to work with a company that demonstrates professional expertise and great safety management."

Repair and rectification work on the semisubmersible rig proceeded once a five-yearly Class Survey was conducted. Critical tasks included the complicated total overhaul of the blowout preventer carrier. Keppel FELS activated a team to fly onboard the rig prior to its arrival in Singapore to expedite the overhaul process.

After a quick turnaround of 49 days at the yard, Nan Hai 6 is on its way back to Australia for drilling work for Woodside Energy.

OCEAN AMERICA

Temporarily halting its drilling programme for Woodside Energy, Ocean America berthed at Keppel FELS on 6 January 2011 from Australian waters. Owned by Diamond Offshore, the ODECO Ocean Odyssey semisubmersible was brought in for riser tensioner upgrades and idler sheaves modifications.

Exposed to severe weather conditions in Australia, the existing chain tensioners exhibited signs of buckling amidst the harsh wave actions. They will be swapped with riser tensioners which are more durable in the long-term.

In addition to these pertinent upgrades, other works such as helideck painting, foam monitor upgrades and

replacements of lifeboats with davits are progressing well. The semisubmersible rig is due shortly to return to work in March 2011.

Working hand in glove with the Keppel FELS team, David Wedgeworth, Diamond Offshore's project manager, said, "The joint efforts of both Keppel and Diamond Offshore teams have ensured that the project has gone according to schedule and a great deal of additional work has been accomplished to enhance Ocean America's capabilities.

"I would like to thank Firdaus Rahim, Keppel's Project Manager, and all involved for working tirelessly to deliver a quality product to Diamond Offshore."

Can Do! shines through

Keppel O&M has earned its stripes as a partner of choice for all offshore and marine projects, regardless of complexity or scale. Rich shipyard experience and strong engineering expertise enable it to promptly size up a project, perform troubleshooting and render effective assistance at any stage of construction or operation.

From all over the world, projects at various stages turn to Keppel O&M's yards for timely, expert completion and servicing. Be it in Singapore, Brazil, the Netherlands or any other location, Keppel yards have answered urgent calls to support a variety of challenging projects in recent years.

SCARABEO 9

Backed by its reputation in execution excellence, Keppel FELS was approached by Saipem S.p.A. in September last year to undertake the completion of its Frigstad D90 semisubmersible rig, Scarabeo 9, which consists mainly of commissioning tests and trials of all marine and drilling sub-systems.

The rig made its way from China to Singapore, and work has proceeded swiftly.

Keppel FELS project manager Ke Cheng Da, shared, "We are working very hard with the Saipem team towards delivering the rig in the third quarter of 2011. The collaboration and mutual trust between our teams have helped us cover a lot of grounds quickly. And as we strive to complete the commissioning tests and trials as efficiently as we can, safety remains our top priority."

SEAWOLF ORITSETIMEYIN

Responding to a call from SeaWolf Oil Services Limited, Keppel FELS' offshore repair specialist team, Flying Squad, travelled to Calabar in Nigeria to repair the damaged leg braces of the jackup rig SeaWolf Oritsetimeyin.

Flying Squad leader Sim Kong Peng set off for Nigeria with a team of 17 repair specialists on Singapore's National Day on 9 August 2010 and was joined by another 11 men a few days later. With their reinforced manpower and efforts, the team was able to complete the offshore repair in 42 days.

Dubbed "leg doctors" by the rig crew, Keppel FELS' offshore repair team has once again proven their aptitude and expertise to take on challenging tasks regardless of the conditions out at sea.

Following the successful repair of SeaWolf Oritsetimey, Keppel FELS was called upon again by the same customer in February 2011 to survey another jackup rig, SeaWolf Onome operating offshore Nigeria. Preparation of a report and proposal for the customer's review is ongoing.

CJ70 CANTILEVER LIFT

At the direct request from Seadrill,



Keppel FELS was approached by Saipem S.p.A. to complete the commissioning of its Frigstad D90 semisubmersible rig, Scarabeo 9



The world's first cylindrical FPSO facility, Sevan Piranema was completed by Keppel Verolme for Sevan Production in January 2007



A leading provider of heavy-lifting services, Asian Lift, a subsidiary of Keppel FELS, played a key role in the completion of Seadrill's CJ70 jackup rig, under construction at another yard



Flying Squad, Keppel FELS' offshore repair specialist team, was deployed to Calabar in Nigeria to tend to the "legs" of the jackup rig SeaWolf Oritsetimeyin

Keppel FELS' heavy lift subsidiary Asian Lift, was deployed swiftly to complete the lifting of a 2,200 metric ton cantilever aboard a massive CJ70 jackup rig currently under construction at another yard in Singapore.

Utilising one of the region's largest floating cranes, Asian Hercules II, Asian Lift completed the job smoothly and safely within the same day. Although the actual process took less than 24 hours, Asian Lift had ensured sufficient preparation to ensure its safe execution.

NOBLE DAVE BEARD

Keppel FELS Brasil's BrasFELS yard was tasked with the fast track completion of the final stages of the semisubmersible drilling rig, Noble Dave Beard.

The vessel arrived from a yard in China at BrasFELS in March 2009 for completion and commissioning work prior to site deployment. The work scope also included completion works on the thrusters'

installation, architectural work on the accommodation and work spaces, piping, electrical, mechanical and other painting works.

Demonstrating its capabilities and experience as Latin America's most comprehensive yard, BrasFELS successfully delivered the rig in eight months, on time and with an excellent safety record.

SEVAN FPSOS

Keppel Verolme's versatile services have won the confidence of customers such as Sevan Production, which had awarded Keppel with three cylindrical Floating Production Storage and Offloading (FPSO) facility outfitting contracts.

The world's first cylindrical FPSO facility, Sevan Piranema and the other two FPSOs, Sevan Hummingbird and Sevan Voyageur were safely completed and delivered to Sevan Production between 2007 and 2008.

"When we say Can Do! our customers know that they can consider the job done."

*CH Tong
CEO of Keppel O&M*

Keppel Verolme's scope of work entailed the outfitting of marine and process equipment and final completion of all works for the three FPSOs. Their hulls were built in China, while the other equipment were completed in Europe.

Harold Linssen, MD of Keppel Verolme, shared, "One of our business models is to offer project management services. We provide customers with value added services in managing costs and project execution issues such as scheduling and assessing risks. This model was welcomed by Sevan Production which has created the market's first three cylinder-shaped FPSOs."

Right on schedule

Through expert project management skills, Keppel O&M's yards worldwide make timely progress on their projects.



Celebrating the keel laying of drillship Noble Roger Eason's stern block were CH Tong (second from right), CEO of Keppel O&M, and Blake Denton (extreme right), Project Manager at Noble Drilling together with project teams



Keppel Verolme has completed the upgrading job for Lorelay, a pipelay vessel for valued customer Allseas Group

Keel laying work began at Keppel FELS for the stern section of Noble Drilling (Nederland) B.V.'s drillship, Noble Roger Eason, on 28 December 2010.

Pre-fabrication of the stern block is being carried out in Singapore before transportation to Brazil for jumbolising with the existing vessel. Work scope to be undertaken at the BrasFELS yard in Angra dos Reis covers the fabrication, repair and replacement of certain components.

Keppel FELS has begun work on the KFELS B Class jackup being built for Jasper Investments Limited (Jasper), a month after securing the order. The strike steel ceremony held on 18 January 2011 was well attended by personnel from both organisations.

Jasper's first jackup unit will be able

to operate in depths of 400 feet, drill 30,000 feet deep and accommodate 150 men. The rig is slated for delivery in the second half of 2012.

Over at Rotterdam, the Netherlands, Keppel Verolme's ability to meet market demands and deliver on its promises has been reinforced with the safe and timely completion of upgrade and repair jobs for a pipelay vessel, Lorelay, and a semisubmersible drilling rig, Paul B. Loyd, Jr.

Harold Linsen, MD of Keppel Verolme, shared, "Over the years, Keppel Verolme has proven that it is capable of handling difficult upgrading, modification and repair jobs. We have a proven track record and we are happy that our regular clients such as Transocean and Allseas entrust us with their major projects."

Innovation takes centre stage

In hosting and participating in the 7th National Innovation and Quality Circles (iQC) Convention, Keppel FELS throws the spotlight on innovation.

A total of 14 teams from Keppel FELS were shortlisted to showcase their solutions for improving productivity at the 7th National iQC Convention.

These teams had attained commendable results at Keppel FELS' in-house innovation competition, held during the company's Innovation Month which spanned across September and October last year.

The National iQC Convention, which took place on 20 December 2010, saw participants from a broad range of industries draw inspiration from each other's research and solutions to fine-tune their own productivity-enhancing innovation concepts. The Convention also serves as a platform to fortify a culture of innovation.

Crowd favourite Team TOICA,

comprising members from Keppel FELS' Production (Mechanical) Department, took home the coveted Star Award for identifying a safe and effective method for equipment installation on the derrick of rigs. On top of reducing man-hours and costs required, TOICA's innovation upped the safety factor of works carried out during the rigbuilding process.

Besides the Star Award, Keppel FELS' teams received seven Gold Awards and six Silver Awards at the National iQC Convention.

Joining in these efforts to improve workplace processes was the Keppel subcontractor Sin Hong Thai Engineering Pte Ltd. Its innovation team, Sparks Arrestor, was conferred a Gold Award for designing a fire containment device to reduce falling sparks from hot works.

NO CUTTING CORNERS

A ship requiring repair on its tank bulkhead or shell plate must be checked for water tightness, and vacuum testing is one of the fastest and easiest methods to achieve this. However, the method can only be employed on flat surfaces.

A multi-vacuum testing box has been developed by the Hull Team from Keppel Shipyard (Gul) to accommodate vacuum testing on irregular surfaces such as corners, curves and manholes.

Easy to use and portable, the device has already become a standard tool in Keppel Shipyard for vacuum testing works. This innovation is also expected to reduce the time required for conducting vacuum tests by 75% and save the company more than S\$10,000 on an annual basis.



Inventive solutions by Keppel FELS' employees have helped increase production efficiency as well as improve safety

Jacked up demand for Keppel's designs



Widely deployed by international customers, the KEFELS MOD V-A Class jackup (in photograph) is the forerunner of the KEFELS Super A Class design



The Super B Class Bigfoot to be built for Transocean is the forerunner of the Super B jackup (in photograph)

"The KEFELS Super A Class debuts at an opportune time when the industry is looking for newer and higher performance assets, which offer improved safety and better efficiency. This North Sea-compliant rig would be able to operate efficiently in virtually all parts of the world outside Norway and the Arctic."

KS Wong
MD of Keppel FELS



cean is an enhancement of the KFELS

It has been just two months into the new year, and already, Keppel FELS has garnered a series of new orders for its proprietary jackup rigs from Transocean, Ensco, Discovery Offshore and Clearwater Capital Partners.

CH Tong, CEO of Keppel O&M said, "We are seeing encouraging demand in the jackup segment, particularly for high specification rigs that can address tough climatic and field conditions, while meeting stringent safety standards.

"This is an area where Keppel FELS enjoys a strong competitive advantage, given our experience with harsh environment rigs, and proprietary jackup designs that have proven operational and safety track records globally."

The new orders, totalling eight units, were placed for Keppel FELS' proprietary Super A Class and B Class Series of rigs.

THE NEW SUPER A CLASS

Keppel FELS sealed a series of contracts with trendsetting customers Ensco plc and Discovery Offshore S.A. (Discovery Offshore) to build two harsh environment jackup rigs each, based on the KFELS Super A Class design.

The four rigs have been further customised to meet the respective needs of the two customers and are slated for delivery across 2013. Both Ensco and Discovery Offshore

will have additional options to order up to two more similar jackup units each.

The construction, marketing and operation of Discovery Offshore's units will be managed by NASDAQ-listed Hercules Offshore, Inc. (Hercules Offshore), a leading global operator of jackup and liftboat assets.

Bringing together winning features of the company's proven jackup rig designs, the new KFELS Super A Class provides operators with a viable and cost-effective solution for harsh environments and cold climate areas.

KS Wong, MD of Keppel FELS, said, "The KFELS Super A Class debuts at an opportune time when the industry is looking for newer and higher performance assets, which offer improved safety and better efficiency. This North Sea-compliant rig would be able to operate efficiently in virtually all parts of the world outside Norway and the Arctic."

The KFELS Super A Class rig can operate in water depths of 400 feet and drill to depths of 40,000 feet. It features advanced automated drilling systems with 2.5 million pounds of static hook load, a spacious deck and comprehensive amenities for the comfort of a 150-person crew. It

Continues on page 20...

Continues from page 19...

What our customers are saying about new and improved Super A Class:

"These rigs (Super A Class) will be among the most capable jackups in the world, and have been designed to meet the exacting requirements of our most demanding customers. With the improving outlook for the offshore drilling industry, we believe that this rig design will be well positioned to take advantage of these positive long-term fundamentals over an extended period of time."

John T. Rynd,
President and CEO of
Hercules Offshore

"Keppel-designed rigs, which make up about 20 percent of our current jackup fleet, have been delivering exceptional performance. The new KFELS Super A Class rigs, which are being customised to EnSCO's requirements, will give us even more high-specification assets to match the demand for increased drilling capabilities in each market."

Dan Rabun,
Chairman and CEO of
EnSCO plc

also has an offline stand building capability to handle drill pipes efficiently, boosting overall rig performance and productivity.

For greater operational safety, the KFELS Super A Class is equipped with the latest pinion overload detection, rack phase difference detection, and brake failure and overload protection devices, thus meeting the stringent health, safety and environment (HSE) standards of the UK sector in the North Sea.

Elaborating on the KFELS Super A Class design, KS Wong added, "This design hails from our proven KFELS MOD V-A Class jackup, which has been widely deployed by our international customers, including EnSCO. This new generation rig is a showpiece of our cumulative experience in designing and constructing cutting-edge harsh environment solutions.

"The strong endorsement that our customers EnSCO and Discovery Offshore have given to the KFELS Super A Class attests to the design's potential, as well as Keppel's ability and commitment to deliver on its promises."

KFELS B CLASS – THE TRUSTED SOLUTION

The KFELS B Class design is the industry standard for efficient and high grade performance. To date, 33 such units have been delivered for operations in various parts of the world.



Strengthening partnerships between Transocean and Keppel FELS were (from left) Luis Tovar, Project Manager at Transocean, Dzul A. Bakar, Associate General Counsel of Transocean, KS Wong, MD of Keppel FELS and Lam Khee Chong, Senior Project Manager at Keppel FELS

In January, Keppel FELS added to its growing track record, new orders from Clearwater Capital Partners, LLC (Clearwater) to build a pair of KFELS B Class jackup rigs.

Keppel FELS is scheduled to deliver the high specification jackups in the first and second quarters of 2013 respectively. Clearwater has also been given options to build another two similar jackup units with Keppel FELS.

Rob Petty, Managing Partner and Co-Founder of Clearwater, said, "Confidence is rapidly returning to the offshore industry and we expect a fundamental recovery of the sector. There is a clear bifurcation in the jackup market with oil companies increasingly focused on new, high specification rigs for their projects.

"We have followed this market closely and chose Keppel FELS as our long term partner to help us execute our investment plans in the transition of the jackup market from old rigs to safer, more efficient rigs.

"Keppel FELS is the gold standard for quality, engineering, and building execution in terms of both time and budgets. Our wide ranging due diligence before placing these substantial orders consistently validated the Keppel team to be professional - from the initial discussions through the engineering design and contract placement. We look forward to this



CH Tong, CEO of Keppel O&M, hands Rob Petty, Managing Partner and Co-Founder of Clearwater, a Keppel golden helmet ornament, symbolising the company's commitment to the highest standards for engineering and construction

same degree of professionalism and precision all the way through to delivery."

SUPER B CLASS BIGFOOT

Meanwhile, long time customer Transocean Ltd. (Transocean) has placed orders for two newbuild jackup rigs based on the KFELS Super B Class Bigfoot design.

Scheduled for delivery from 2H2012 onwards, both units have already been chartered by a subsidiary of Chevron Corporation for drilling operations in Thailand over five years.

The KFELS Super B Class Bigfoot is designed with larger spud cans, expanding its operational coverage in more places, especially areas where soft soil is predominant.

Having larger spud cans limits the extent of soil penetration by the rig's legs, thus enabling the unit to operate efficiently while minimising potential leg extraction problems in soft soil conditions.

A 1.5 million pound drilling system and maximum combined cantilever load of 3,200 kips fuel the Super B Class Bigfoot with great horsepower during drilling operations. In addition, the rig will be installed with offline stand building features in its drilling system package, which allows drilling and the preparation of drill pipes to take place concurrently.

Transocean has been given options to order up to three more of the Super B Class Bigfoot jackups in the near future.

Evolution of Keppel's jackup designs

Keppel launched into the world of rig design in 1997, acquiring rights to the Freide & Goldman MOD V and MOD VI jackup designs. With the injection of Keppel's own rich construction experience and insights into harsh environment operations, the two jackup models were further improved upon and evolved into Keppel's proprietary series of rigs.

Keppel's Offshore Technology Development unit continued to

build upon these rig designs and their critical equipment, which form the basis of its series of proven jackup solutions that have been deployed worldwide.

Employing the latest technology innovation for sustainable operations, these jackup rigs feature Keppel's fully-automated, high capacity rack and pinion elevating technology, and a self-positioning fixation system. The rigs may be readily customised to meet the specific requirements of

each customer, and some had been reconfigured to the "bigfoot" capability with larger spud cans for operations in areas with soft soil.

Today, with a string of jackup-based rig designs under its belt, Keppel O&M continues to raise the benchmark for safe and efficient operating solutions in virtually every offshore market including harsh environments.

Standard B Class

PREMIERED IN 2000

Dimensions:

234 ft x 208 ft x 25 ft

Leg Length: 517 ft

Variable Deck Load:

8,939 kips (normal operating condition)

Max Water Depth: 400 ft

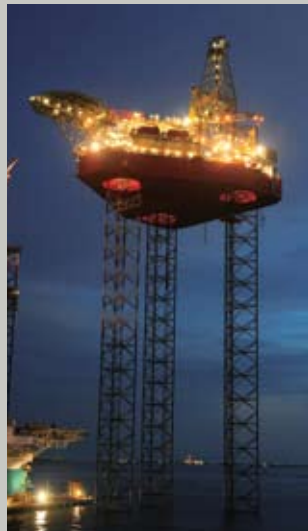
Max Drilling Depth:

30,000 ft

Key feature(s): The configuration of the drilling packages are highly customisable. Features a combined drilling load of up to 2,500 kips.

Recommended for: Various parts of the world outside the North Sea.

Big-foot B Class: Modified B Class equipped with larger spudcans 53 ft in diameter.



Super B Class

PREMIERED IN 2003

Dimensions:

246 ft x 218 ft x 25 ft

Leg Length: 486 ft

Variable Deck Load:

7,600 kips (normal operating condition)

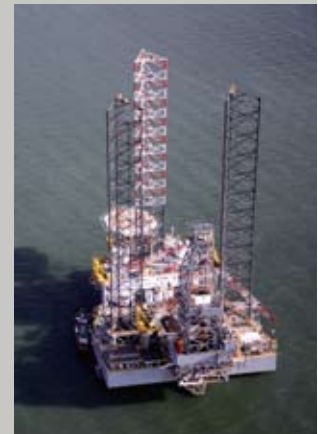
Max Water Depth: 350 ft

Max Drilling Depth:

35,000 ft

Key feature(s): Featuring a combined drilling load of up to 2,700 kips, the KFELS Super B Class rig is capable of drilling deep wells both vertically and horizontally. It includes a cantilever that can be skidded off by 100 ft, and a high capacity hook load of 2 million pounds.

Recommended for: Well-suited for drilling high-temperature and high-pressure wells in various parts of the world outside the North Sea.



A Class

PREMIERED IN 1998

Dimensions:

246 ft x 222 ft x 30 ft

Leg Length: 544 ft

Variable Deck Load:

19,357 kips

Max Water Depth: 400 ft

Max Drilling Depth:

30,000 ft

Recommended for: Various parts of the world including the UK, Danish and Dutch sectors of the North Sea.



N Class

PREMIERED IN 2006

Dimensions:

264 ft x 289 ft x 35 ft

Leg Length: 568 ft

Variable Deck Load:

10,000 kips

Max Water Depth: 400 ft

Max Drilling Depth:

35,000 ft

Key feature(s): Capable of simultaneous drilling and production operations.

A cantilever drilling package designed to skid transversely, allowing drilling to take place at two positions 26 ft apart. The two cantilever drilling positions also provide an exceptionally wide drilling envelope.

Recommended for: The North Sea, Norwegian sector



Super A Class

PREMIERED IN 2011

Dimensions: 246 ft x 250 ft x 31 ft

Leg Length: 525 ft

Variable Deck Load: 9,105 kips

Max Water Depth: 400 ft

Max Drilling Depth: 35,000 ft

Key feature(s): It features advanced automated drilling systems with 2.5 million pounds of static hook load, a spacious deck and comprehensive amenities for the comfort of a 150-person crew. It has a combined drilling load of up to 3,415 kips.

Recommended for: Various parts of the world including the UK, Danish and Dutch sectors of the North Sea.

MPSEP

PREMIERED IN 2010

Dimensions:

378 ft x 164 ft x 32 ft

Leg Length: 348 ft

Max Water Depth:

213 ft

4-legged jackup

Key feature(s):

KFELS MPSEP features a 1,200-ton crane and is fitted with a DP2 system. It has a spacious deck with variable load of up to 6,500 mt, enabling the vessel to transport up to 12 turbines at a time. Compared with existing wind turbine installation vessels, and the majority of those being constructed, this vessel can operate in some 45%-deeper waters, while reducing downtime even in extreme storm conditions, thus providing a potentially longer operational window.

Recommended for: Various parts of the world including the North Sea.



G Class

PREMIERED IN 1997

Dimensions:

244 ft x 250 ft x 35 ft

Leg Length: 560 ft

Variable Deck Load:

10,400 kips (normal operating condition)

Max Water Depth: 400 ft

Max Drilling Depth:

30,000 ft

Key feature(s): Detachable cantilever and skid-off type drill floor enable the rig to achieve a wider range of drilling positions with the support of a jacket, and to work in tender assist mode.

Recommended for: The North Sea



Safety self-audit

Employees and subcontractors recently participated in the Keppel Safety Perception Survey which aims to assess the organisation's safety culture, systems and performance as well as gather ideas for improvement.

A keen understanding of attitudes is critical to build cultures and effect change. As such, the Keppel Safety Perception Survey, launched on 5 January 2011, serves a critical role in enhancing Keppel's safety management systems.

This review effort is an extension of the Keppel Workplace Safety and Health (WSH) 2018 initiative, which seeks to significantly reduce Keppel's incident rates over the next few years. More than 20,000 employees and subcontractors' workers have participated in this 24-question survey.

A pool of assessors from across Keppel Group will be trained and equipped with safety competencies to address the gaps between perceived and actual safety levels. The differences are identified through the Safety Perception Survey and on-the-ground evaluations. The assessors will also develop benchmarking indices and safety roadmaps for Keppel's business units.

Chairman of the Board Safety Committee, Sven Ullring, said, "DuPont, the world's top safety consultant, is assisting us in our

Four key thrusts of Keppel WSH 2018

1. Establish an integrated WSH framework across businesses worldwide
2. Implement an effective safety management system
3. Enhance safety ownership
4. Strengthen safety partnerships

self-assessment exercise. Part of DuPont's scope is to impart its know-how to us and subsequently leave us to run by ourselves. This is so that we will not need consultants in the future – just auditors, every second year or so – to make sure that we are in compliance with our own systems and procedures.

"This exercise will provide us with the tools to significantly improve and align safety across our business units. We believe we have the systems in place. Now we need to build up a pool of key personnel across business units, hierarchies and professions to foster a culture of safety. Passionate and well trained in safety, their mission is to influence others around them to be safety ambassadors as well."



A keen understanding of its employees and subcontractors' perception of safety enables Keppel to strengthen its safety culture and processes

Walking in line with safety



Sven Ullring (third from left), Chairman of the Keppel Board Safety Committee, and Chandru Rajwani (second from left), Chairman of Keppel's Inter-Business Unit Safety Committee, visited Keppel Batangas and Subic Shipyard to observe and provide guidance on their safety practices

Continuing the drive to align Keppel's safety efforts across its subsidiaries worldwide, Sven Ullring, Chairman of the Keppel Board Safety Committee, and Chandru Rajwani, Chairman of Keppel's Inter-Business Unit Safety Committee, visited Keppel Batangas and Subic Shipyard to observe and provide guidance on their safety practices.

Reflecting on the two day visit, which took place on 28-29 January 2011, Chandru said, "Subic Shipyard's high standard of

housekeeping, warehouse bar coding system, gray water treatment plant as well as emergency generator and power supply system are commendable. We are similarly impressed by the commitment of Keppel Batangas' Safety Department towards inculcating a safety-first mindset, and its efforts to raise safety awareness."

Keppel Batangas is currently undertaking yard developments which are designed to improve safety and productivity. These include the provision of

underground pipelines to the berth areas, which will minimise the time-consuming practice of bringing oxygen acetylene bottles to the work areas.

Chandru added, "I urge both yards to continue upholding Keppel Group's high safety standards with regular check on the maintenance of their infrastructure, machinery and equipment, as well as highlighting safety best practices to their employees."

Turning up wind power

Employing our expertise in jackup technologies, Keppel develops efficient and powerful offshore wind turbine installer design.



Image 1: A key feature of Keppel's OWI design is its ability to work in challenging weather conditions, especially in the presence of strong winds

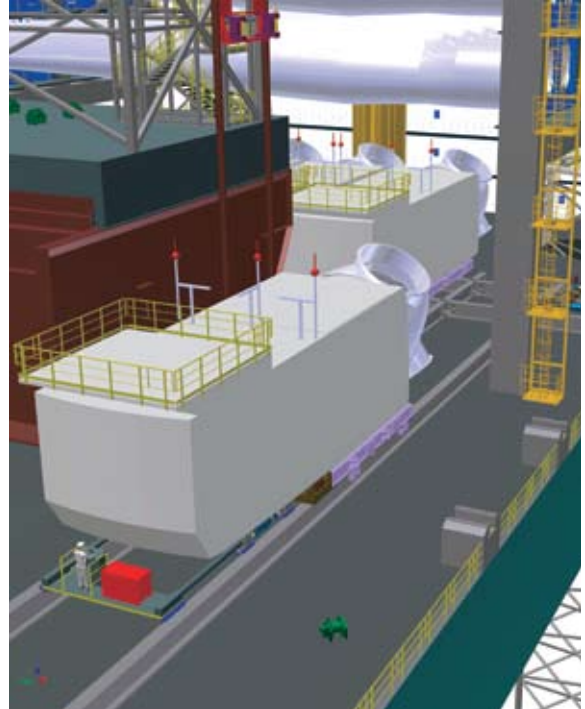


Image 2: The nacelle is skidded over an x-y track system by skid tractors

Global demand for primary energy will surge by 36% between 2008 and 2035, according to the International Energy Agency's latest estimates. While fossil fuels will remain the dominant source of energy, renewable energy sources will see their share in the energy mix increase.

Rising in this sea of change is the demand for offshore wind energy; a low carbon emissions option for sustainable development.

Earlier this year, the European Wind Energy Association reported that in 2010, 308 offshore turbines were installed in Europe, increasing installations by 51%. By

2020, it is expected global offshore wind power capacity is expected to reach 75 gigawatts (GW), with significant expansion in Europe, China and the United States.

To support the expansion of offshore wind power capacity, there is a growing need for equipment and technologies for offshore wind turbine installation.

Keppel Offshore & Marine Technology Centre (KOMtech), Offshore Technology Development (OTD) and Keppel FELS, have developed a new and improved Offshore Wind-turbine Installer (OWI) concept based

on the Group's proven jackup technologies and knowledge of offshore oil and gas operations.

A key feature of Keppel's OWI design is its ability to work in challenging weather conditions, especially in the presence of strong winds. By minimising weather-related operational downtime, Keppel's OWI not only improves the efficiency of turbine installation but also reduces the associated costs.

The Keppel OWI design can accommodate more than 2.5 metres swell and install blades in a moderate gale, up to 15 metres per second (m/sec).



Image 3: The blade is picked up by a Knuckle Boom Crane with a dedicated gripper

These capabilities are achieved through several design features.

The most characteristic element of the Keppel's OWI is its high mast, which stretches up to 100 metres above the main deck and a cantilever that extends up to 15 metres outside of the hull. They are fitted with guide tracks to limit the swinging of heavy loads during lifting, thus enabling safe and quick assembly of wind turbine components offshore.

The wind turbines are installed in the following manner. Blades are picked up by a Knuckle Boom Crane with a dedicated gripper (see Image 3). The nacelle is

skidded over an x-y track system by skid tractors (see Image 2) and picked up by a hoisting yoke guided by the cantilevered mast. The nacelle, hub and blades are then assembled on a fixed platform protruding from the vessel's mast. Next, the cantilever skids outside the hull and is positioned above the turbine foundation at sea. Finally, the pre-assembled turbine nacelle is then installed at the top of the wind tower while guided to avoid swinging motion in strong winds.

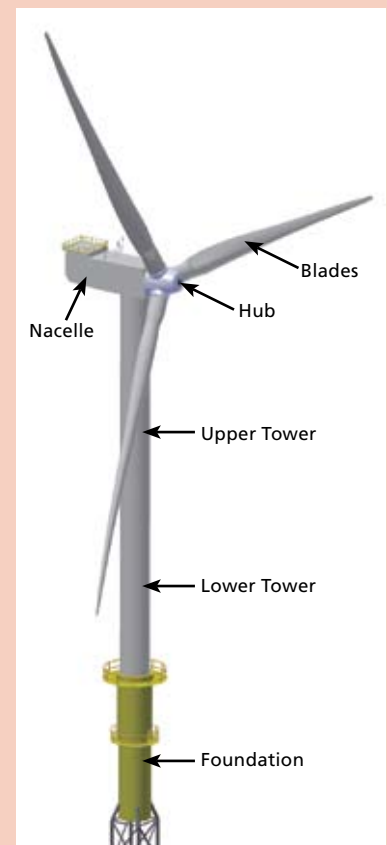
Another noteworthy feature is the OWI's high load capacity, which allows it to carry 5-10 turbines on its main deck at a time. This enables the vessel to install more turbines at a go without having to return to harbour to re-load its supplies.

Furthermore, by adding a blade elevator to its mast and cantilever, the OWI can also be used to service and maintain old wind turbines, including changing turbine blades or even an entire nacelle.

With growing demand for offshore wind power, a strong supply chain will be needed to support the installation and maintenance of thousands of wind turbines. Keppel is well-positioned to employ its engineering and construction capabilities in offshore and marine solutions to service customers in this emerging sector.

Components of an offshore wind turbine

The tower elevates the turbine to about 90-100 metres above the sea, where the wind speed is strong and consistent. The rotor may be more than 120 metres in diameter. The hub does the pitch control, adjusting the blade angle to control the speed. The nacelle contains a gearbox which keeps the rotor speed at 10-30 revolutions per minute (RPM) to suit the electric generator.



Wind turbine main components

Partners in research

Since its establishment in 2007, Keppel Offshore & Marine Technology Centre (KOMtech) has been actively engaging and partnering many world-class universities and institutions to further its R&D initiatives.

The University of Western Australia (UWA) is one such academic institute that KOMtech closely collaborates with to enhance Keppel O&M's technologies.

On a recent visit to KOMtech to discuss on-going geotechnical projects, Professor Mark Cassidy, Director of Centre for Offshore Foundation Systems (COFS) of UWA, shared, "The COFS-KOMtech

partnership has been very strategic in identifying the industry's crucial problems and conceiving the best practical and sound solutions.

"This not only benefits COFS in setting our research direction, which is relevant to the industry's needs but it also supports Keppel O&M's commitment as the solutions provider to their customers. This is a win-win situation for COFS and KOMtech."

The projects jointly pursued by COFS and KOMtech include the enhancement of jackup foundation models to meet the industry's demand for higher performance jackup rigs. During this visit, both

COFS and KOMtech also discussed areas for further collaboration, including the development of jackup foundation systems for greater water depths.

Dr Matthew Quah, Program Manager (Offshore Structures Group) of KOMtech, said, "We are privileged to be able to work very closely with Professor Cassidy. His contribution to the geotechnical field is immeasurable. Moving forward, the strong ties between KOMtech and COFS will be promoted further by having more industrial exchanges and attachments for our employees."

Floatel Reliance begins contract with Petrobras

Floatel Reliance, the second semisubmersible accommodation rig built by Keppel FELS for Floatel International, has commenced its five-year contract with Petrobras after completing the final acceptance test with flying colours in Guanabara Bay on 30 January 2011. The accommodation semisubmersible is presently deployed alongside the Cherne 1 platform in Campos Basin.

The KFELS SSAU™ 3600 design, on which Floatel Reliance is based, was developed by Keppel FELS to meet growing demand for safe, reliable and greater-capacity living quarters for offshore operations.



Floatel Reliance was delivered safely, ahead of schedule and within budget by Keppel FELS in the fourth quarter of 2010

Scoring on global excellence



On behalf of Keppel FELS, KS Wong (right), MD of Keppel FELS, received the Singapore International 100: Overseas Sales/Turnover Excellence in Markets (Europe) award from the Minister of State for Trade and Industry Mr Lee Yi Shyan

Keppel FELS was conferred the Singapore International 100: Overseas Sales/Turnover Excellence in Markets (Europe) award.

Mr Lee Yi Shyan, Minister of State for Trade and Industry, was Guest-of-Honour at the award ceremony – 24th Annual Singapore 1000 & Singapore SME 1000 incorporating Singapore International 100 – held on 21 January 2011.

MOS Lee said, “A good number ventured into India and China while some even secured footholds

in faraway locations in North and South America, Europe and Africa.

“Those who are successful have internationalised. They achieve exceptional growth because they offer something unique that the markets needed. All these however, can change over time when new competitors enter the market. Our firms must continually move up the value chain ahead of competition.”

The award is based on rankings published by DP Information Group and co-produced by Ernst & Young.

People on the rise

In rolling out its succession planning and talent development roadmap, Keppel O&M has over the years adopted various platforms to build up the next tier of leaders for the Group. These include periodic overseas assignments, enlarged responsibilities, special projects and job rotations.

Having completed his secondment as CEO of Nakilat-Keppel Offshore & Marine (N-KOM), Yong Chee Min returns to headquarters in Singapore as GM (Projects) of Keppel O&M, with effect from 1 February 2011.

Chee Min was instrumental in starting up and developing the N-KOM shipyard in Qatar, and is succeeded by Abu Bakar Mohd Nor as its CEO. Prior to Chee Min’s appointment in Qatar, he was



Yong Chee Min

GM (Health, Safety and Environment) at Keppel O&M.

In his latest role, Chee Min will oversee special projects at the Group-level, as well as those involving overseas operations.

Meanwhile, Loh Kee Huat, who was formerly the Project Manager of Keppel Singmarine, has been promoted to General Manager of



Loh Kee Huat

Prime Steelkit with effect from 3 January 2011. He takes over from Charles Yap, who continues to serve as the General Manager (Purchasing and Warehousing) of Keppel Singmarine.

Prior to his assignment with Prime Steelkit, Kee Huat was responsible for the successful construction and delivery of the G1200 pipelay vessel to Global Offshore International Ltd.

Electric charge



TK (third from left) shared anecdotes of his vibrant 40-year career with the younger generation at the 8th Keppel Offshore & Marine Lecture

At the grand age of 70, when most would have retired, Seow Tiang Keng – or TK as he is fondly known – Senior Manager (Electrical and Instrumentation) at Keppel FELS, continues to work tirelessly. Soon after a successful recovery from cancer last year, he was back in action, engaging with zest engineering work and mentoring the younger Keppelites.

Having amassed a wealth of knowledge from his four decades of working with Keppel, TK was invited to speak at the 8th Keppel Offshore & Marine Lecture, which was held on 13 January 2011 at Singapore Polytechnic. He shares with OffshoreMarine his experiences at Keppel and how he continues to energise those around him.

Q: WHEN DID YOU FIRST BEGIN WORKING FOR KEPPEL?

I used to work at the old Keppel Shipyard at Telok Blangah way back in 1969. I joined as an electrical engineer at 29 and was the first non-mechanical person to be trained as a ship repair manager. That was quite a big thing for me.

On top of my shipbuilding and ship repair experiences, I have been involved in a variety of Group projects. These include the development of all three phases of Keppel's Tuas Shipyard, the final construction phase of Sedona Residential Suites in Hanoi, Vietnam, and the commissioning of power barges for operation in the Philippines.

Q: YOU'VE WORKED ON MANY PROJECTS ACROSS THE GROUP. IS THERE ANY PARTICULAR CHALLENGE THAT YOU WISH TO HIGHLIGHT?

Two years before the Suzhou Industrial Park in China was scheduled to open, Keppel was told that we may not be able to receive the necessary electricity to operate. The then-Chairman of Keppel Corporation Sim Kee Boon called me to ask if I could think of a solution.

It wasn't long after when I found myself bound for Suzhou with the task of managing the construction of a power plant within 18 months. The average time for such a project is usually three to four years.

Technical challenges aside, I had to keep up the morale of the workforce. I even had to encourage them to continue working during Chinese New Year. After giving them the first day of Chinese New Year off, I made it clear that I expected to see everyone back on-site on the second day as I would be there distributing red packets to all the workers. With everyone's cooperation, we finished the job in 18 months.

Q: YOUR WORK HAS TAKEN YOU TO DIFFERENT COUNTRIES. WHAT ARE SOME OF THE MORE MEMORABLE CULTURAL INCIDENTS?

It was during the construction of a power plant in Hebei, China. One wintery morning during my walkabout of the premises, I noticed a group of workers painstakingly sewing a large quantity of under blankets together.

My initial thought and worry was that they were intending to spend their nights in the power plant. However, I continued my observations without interfering and eventually their intentions came to light.

They were sewing a giant blanket to keep the power plant's turbine warm and toasty! This prevented thermal shock and damage to the blades. What an ingenious yet cost-effective solution it was.

Q: COULD YOU SHARE WHY YOU HAVE STAYED WITH KEPPEL FOR SO LONG?

I have forged close relationships with my bosses over the years. When I was diagnosed with colon cancer in 2008, CB Choo and CH Tong stood by me as I went through chemotherapy. And they did not hesitate to welcome me back to work once I recovered.

Over the years, I have had offers from other firms. However, I always turned them down as I knew they could not offer me opportunities to participate in as wide a range of projects as Keppel.

More importantly, I've built strong bonds with many Keppelites over the years that cannot be replicated elsewhere.

Q: IS THERE ANY ADVICE YOU WOULD LIKE TO SHARE WITH YOUNG ENGINEERS TODAY?

While it can be tempting to impose one's ways and methods, especially when sent overseas to supervise a project, I find that it is often wiser to observe how locals innovate on the spot. Their methods may appear simple or unsophisticated, but they can be effective nonetheless.



The late Chua Chor Teck (right), former MD of Keppel Shipyard and one of Singapore's marine industry pioneers, was not only a colleague but also a friend and mentor to TK

Making the Keppel difference

The Keppel Volunteers network enables Keppelites to use their time and skills to nurture their communities. Dedicated to help build a better, more holistic world, Keppelites volunteer for a wide range of activities, including diving into the deep seas to protect our natural environment and turning out cleaner and cheerier homes for the elderly.

FOSTERING HEALTHY HOMES FOR SENIORS

According to the latest population census, more than 28,000 seniors aged 65 and above in Singapore live alone. A number of them, made up of less privileged and socially isolated elderly folk, reside in spartan one-room rental flats scattered across the island.

Moved to help make living conditions more pleasant, 30 Keppelites battled the dirt, dust and pests to clean the homes of seniors in the Toa Payoh estate.



The Keppel Volunteers' company and assistance with domestic chores brought light and warmth to the elderly living in Toa Payoh

The Volunteers' biggest challenge was not stubborn stains and hard to reach corners, but tackling the language barrier and persuading the seniors to dispose of the stashes of expired food and broken items to which they held on dearly.

Chappidi Pattabhi Narasimharao, Project Superintendent, Commissioning, Keppel FELS, shared, "I have been actively involved in volunteer work since my secondary school days in India, and am glad for the opportunities to participate in such meaningful activities with my colleagues in Singapore.

"The smiles on the old folks' faces when we come to help them with their domestic chores is truly priceless. It was also fun to spend time with them and learn about their life stories."

NURTURING YOUNG CORAL REEFS

Keppel's volunteers have made it their mandate to not only make

communities livable on land, but also under the sea.

On 8 January 2011, four Keppelites dove into the Coral Nursery Project, a reef conservation programme off the waters of the Pulau Semakau island of Singapore.

In a bid to help raise chances of survival for the newly transplanted coral population, the divers spent their weekend scrubbing the young polyps, loosening debris to help them "breathe".

Experienced diver Yu Par Maw, Assistant Systems Analyst at Keppel Shipyard, shared, "The water visibility was poor, and it only got worse as we brushed off the silt from the corals. But this is a very necessary effort that goes a long way to help enrich the marine environment. With our care, the corals will keep growing healthily and this is a strong pull factor that keeps me coming back."



All aboard – Keppel Volunteers' divers and their counterparts from National Parks embark on a joint effort to rehabilitate the corals

Keppel Batangas to the rescue

An ingrained member of the local community, Keppel Batangas readily lends support to its neighbours and helps to preserve the rich natural heritage of the Philippines.

Fighting fires and caring for wildlife are all in a day's excitement for the Keppel Batangas team, who is ever close to the heart of the local community.

FIGHTING FIRE

The call for help to put out raging fires at a row of commercial buildings on 18 January 2011 drew an immediate response from Keppel Batangas.

Within fifteen minutes, Keppel Batangas' Health, Safety and Environment (HSE) team and its fire truck was at the fire scene to provide manpower and resource support to the province's firefighters.

Bureau of Fire Protection Senior Fire Officer 3 Bosmundo C. Baltado, Fire Station Chief of Bauan, lauded the efforts of the Keppelites, "We are thankful that we have community partners with firefighting capabilities like Keppel Batangas Shipyard who are always ready to respond to our call for assistance at a moment's notice."

SAVING AN ENDANGERED SPECIES

A rare visitor, a 10-foot long baby whale shark wandered into the Shipyard's own graving dock while a vessel was docking for repairs.

The graceful creature swam



The volunteer HSE firefighters of Keppel Batangas went into the four-storey building to help put out residual fire



Keppel Batangas workers rescued a whale shark trapped inside the graving dock

playfully around the vessel despite the shipyard divers' efforts to guide it out towards the bay before the dock gate closed. It was successfully lifted out of the drydock in a net and into Batangas Bay amidst cheers from the vessel crew and yard employees.

Poh Leong Kok, Senior VP of Keppel Batangas, mused, "We were very lucky to have such a rare creature visit our shipyard. It was fulfilling to have been able to protect it and ensure its safe return to sea."

Powering up our online presence

Visit www.keppelom.com to experience Keppel O&M's new user-friendly and interactive website.

The Keppel O&M Group has launched its new and improved websites to provide users with a rich surfing experience, as they keep up-to-date with the organisation's latest news, services, solutions and global network. The intuitive interface provides clear navigation and puts concise and relevant information right at the user's finger tips.

The new features include a Near Market, Near Customer quick button which offers ready access to the websites or details of Keppel O&M's global yards.

To get a good overview of Keppel O&M's businesses, view the Corporate Video streamed from About Us under Corporate Profile.

The interactive Solutions Suite under Technology showcases Keppel O&M's comprehensive range of offshore and marine solutions. For a more in-depth introduction to the Group's proprietary designs, surf onto Product Showcase under Our Businesses.

Get the latest news on Keppel O&M Group at our

comprehensive Newsroom, which contains our press releases, annual reports, publications and special presentations.

For more information on Keppel FELS, Keppel Shipyard and Keppel Singmarine, simply surf their new and enhanced microsites:

- www.keppelfels.com
- www.keppelshipyard.com
- www.keppelsingmarine.com

Bookmark these websites and stay tuned for regular updates on the Keppel O&M Group.

Keppel Offshore & Marine

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With clear and concise content packaged into an intuitive interface, the revamped Keppel O&M websites is an attractive and user-friendly platform for learning about the Group's services, solutions and global network

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The trusted marine partner



First converted by Keppel Shipyard in 2000 for SBM, FPSO Espadarte will return to Keppel Shipyard for an upgrade

Keppel's Marine Division clinched contracts to upgrade a Floating Production Storage and Offloading (FPSO) vessel, convert a livestock carrier, as well as build a diving support vessel in December 2010.

Nelson Yeo, MD (Marine) of Keppel O&M, said, "I would like to thank our customers for their confidence in the capabilities of the Keppel O&M group of companies. These latest contracts strengthen the mutual trust and partnership we have established. As a partner for solutions, we constantly strive to provide safe and high quality services to our customers."

For one of these contracts, Keppel Shipyard has been engaged by long-time customer Single Buoy Moorings Inc (SBM) for the fast track modification and upgrading of FPSO Espadarte, which was previously converted by the yard in 2000.

The FPSO is expected to arrive in Keppel Shipyard in 2Q2011. Keppel Shipyard's work scope includes upgrading the accommodation facilities, modifying the existing topside modules and internal turret mooring system, as well as installing and integrating new topside process modules.

FPSO Espadarte is expected to return to Brazil in the first quarter of 2012 where it will be deployed by Petrobras in the Baleia Azul field in Campos Basin.

Tony Mace, CEO of SBM Offshore, said, "Keppel has long been a preferred partner of SBM, having collaborated on numerous FPSO projects since 2000. Throughout our strong working relationship, the Keppel team has consistently lived up to their schedule commitments, promises of reliability, and quality service."

"We are confident this project will be of the same high standards."

Additionally, Keppel Shipyard has secured its third livestock carrier conversion project from the Hijazi & Ghosheh Group, a world-leading owner and operator of such vessels. This contract involves converting the Reestborg container ship into a livestock carrier for Hijazi & Ghosheh's affiliate company, Reestborg Compania Naviera S.A.

Keppel Shipyard's work scope includes providing design engineering services, equipment procurement, as well as modifying the ship's structural, piping and electrical systems. When completed in the second quarter of 2011, the livestock carrier will ply the route between Australia and the Middle East.

Fortifying its track record for customised ship solutions, Keppel Singmarine has also won a contract from a Malaysian customer to build a diving support vessel.

The 80-metre ship will be based on a new design specially developed by Keppel's Marine Technology Development unit for the customer. When completed in the second quarter of 2012, this diving support vessel will be able to perform multiple functions including rescue and subsea operations.