

# OFFSHORE MARINE

A newsletter of Keppel Offshore & Marine

September – October 2013

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## Innovation Awards Ceremony & Symposium



**IGNITING  
INNOVATION**

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## TECHNOLOGY & INNOVATION

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(From left to right) Mexico's Secretary for Foreign Affairs, Mr José Antonio Meade Kuribreña; General Director of PMI, Dr Jose Manuel Carrera Panizzo; Singapore's Minister for Foreign Affairs and Minister for Law, Mr K. Shanmugam; Chief Operating Officer and CEO-Designate of Keppel O&M; Mr Chow Yew Yuen; Chairman of Keppel Corporation, Dr Lee Boon Yang; CEO of Keppel Corporation, Mr Choo Chiau Beng, at the signing of the Memorandum of Understanding (MOU) between Keppel and PEMEX.

The MOU signing reinforces Keppel O&M's *Near Market, Near Customer* strategy in the oil and gas sector in Mexico.

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Celebrating with Keppel Corporation



# Clear confidence

Keppel FELS' market-established B class jackup design has once again won the confidence of the industry. The company announced on 1 October 2013 that it has secured a contract from an affiliate of Clearwater Capital Partners (Clearwater) to build two KFELS B Class jackup rigs, which are scheduled to be completed in 4Q 2015 and 1Q 2016.

With 49 KFELS B Class/Super B Class jackup rigs already delivered and 20 on order, it is a clear indication of the strength of the design with oil companies and drilling operators.

Mr Wong Kok Seng, MD (Offshore) of Keppel Offshore & Marine and MD of Keppel FELS said, "We are glad to have repeat customer Clearwater reaffirm their confidence in our capabilities and rig design. We look forward to providing Clearwater with


premium, safe and cost-efficient rigs that are in demand in the market.

"Having delivered 18 rigs already this year, Keppel FELS has demonstrated its strong project execution capabilities in completing all its projects safely, ahead of or on time and within budget. In addition, with the rigs being built to repeat designs, we are able to reap efficiencies by replicating the process to speed up the work."

The KFELS B Class jackup rig is able to operate in water depths of up to 400 feet, drill to 30,000 feet deep and equipped with offline standbuilding capability. Developed by Keppel's technology arm, Offshore Technology Development, the KFELS B Class jackup design provides maximum uptime with reduced emissions and discharges.

Dr Yao Chye Chiang, Singapore-based Chief Operating Officer of Clearwater said, "We continue to see strong demand for new high specification jackup rigs as the industry continues its rig replacement trend. Even with the number of new jackups entering the market this year, more than half the existing rigs will be older than 30 years by 2015.

"The KFELS B Class is a proven design which has been the rig of choice for leading oil companies in the industry. This is an opportune time for us to scale up with two rigs of this design and we are confident in getting a good return on our investment. As the world's leading rig builder with a strong track record for delivering high quality rigs on time and on budget, Keppel FELS is the ideal shipyard partner for us."



The two KFELS B Class rig order from Clearwater adds to the robust orderbook of Keppel Offshore & Marine which stands at \$13.6 billion as at end September 2013

# Establishing Presence in Mexico

Keppel partners PEMEX to develop yard in Port of Altamira, reinforcing its *Near Market, Near Customer* strategy.



Keppel Offshore & Marine (Keppel O&M) board of directors and senior management at the signing of a Memorandum of Understanding (MOU) between Keppel and PEMEX on 4 October 2013

*“By partnering with the world’s leading rig builder Keppel, we are confident that the shipyard will be a success and help to provide a wide array of solutions for the production of oil and gas.”*

*Mr Emilio Lozoya, CEO of PEMEX*

Keppel Offshore & Marine (Keppel O&M) strengthened its foothold in the offshore and marine industry in Mexico with the signing of a Memorandum of Understanding (MOU) with PEMEX Exploracion y Produccion (PEP) and P.M.I. Norteamérica, S.A. de C.V. (PMI), both subsidiaries of Mexico’s national oil company, Petroleos Mexicanos (PEMEX).

The MOU is to jointly develop, own and operate a yard facility in Mexico. The first phase of

development of this facility will equip the yard to undertake portions of the work scope in the construction of six KFELS B class jackup drilling rigs for PEP.

The MOU, which signifies a landmark partnership between PEMEX, the world’s fifth-largest crude oil producer, and Keppel O&M, was signed in Singapore on 4 October 2013 by the General Director of PMI, Dr Jose Manuel Carrera Panizzo, and the Chief Operating Officer and CEO-designate of Keppel O&M, Mr Chow Yew Yuen at the Ministry of Foreign Affairs. The signing was witnessed by Singapore’s Minister for Foreign Affairs and Minister for Law, Mr K. Shanmugam and Mexico’s Secretary for Foreign Affairs, Mr José Antonio Meade Kuribreña.

In a congratulatory message, Mr Emilio Lozoya, CEO of PEMEX, said, “This MOU highlights PEMEX’s commitment to increase oil and gas production in the long term by developing a sustainable offshore and marine industry in Mexico that can readily meet our needs. By partnering with the world’s leading rig builder Keppel, we are confident that the shipyard will be a success and help to provide a wide array of solutions for the production of oil and gas. Mexico’s proven reserves of oil and gas at the start of 2013 is almost 14 billion barrels of crude-oil equivalent and we believe that a significant number of shallow water and deepwater drilling rigs as well as FPSOs and FLNGs will be required to maximise production in the years to come.”

Earlier this year, PEMEX unveiled investment plans of US\$25.3 billion for 2013, of which US\$20 billion are targeted at upstream activities.

Mr Tong Chong Heong, CEO of Keppel O&M added, "We have been a strong supporter of PEMEX's oil and gas programme with some 20 projects delivered or on order for Mexico presently. This MOU reinforces Keppel O&M's *Near Market, Near Customer* strategy and places us in a strong position to capture opportunities from the continued growth in exploration and production

activities in the Gulf of Mexico. Through our partnership with PEMEX, we will be able to tap each other's technological expertise and know-how to provide comprehensive world-class solutions for the Mexican market.

"The yard will not only provide local content to support the industry's growth in Mexico but also employment, training and skills development for the local workforce through Keppel O&M's training and development schemes."

PMI and Keppel O&M intend to establish a joint venture company, PMI-KOM JVC, to be the principal investment vehicle through which both parties would cooperate in various business opportunities that may be agreed upon. The first opportunity identified is the establishment of the yard to service the offshore oil & gas industry in Mexico.

To be located strategically in the modern Port of Altamira along the coast of the Gulf of Mexico, the proposed yard will help to further develop Mexico's offshore hydrocarbon potential, meeting both the growing needs of the local oil and gas industry and the international clientele operating in the Gulf.

Keppel O&M will leverage its proven expertise and operational

track record in the management of the yard which will be able to service PEMEX's requirements in the offshore and marine construction and service sector, as well as independently pursue work from the private sector.

The total yard development cost will be around US\$400 million, with the first phase estimated at US\$150 million.

Subsequent phases of the yard development would enable it to repair deep-draft semisubmersibles and drillships, undertake conversions of FPSO and Floating Liquefied Natural Gas (FLNG) vessels, as well as fabricate topside modules and other offshore structures.

When all the phases are completed, the yard is expected to create up to 4,000 new direct jobs for the local community.

Keppel O&M has delivered projects for Mexico since 2004. It has completed seven jackup rigs and two accommodation platforms which are successfully working for PEMEX, and is currently building another 10 jackup rigs to be deployed in Mexico.



LA SANTA MARIA was the most recent KFELS B Class jackup rig delivered by Keppel FELs to a Mexican customer, CP Latina, in August 2013

# Third delivery for Transocean



Keppel FELS and Transocean celebrated their successful collaboration on the KFELS Super B Class jackup rig, Transocean Ao Thai

Keppel FELS has delivered to Transocean their third consecutive KFELS Super B Class jackup rig early, on budget and with zero lost-time incidents.

The rig was named Transocean Ao Thai on 31 August 2013 at Keppel FELS and it has been chartered to Chevron for work in offshore Thailand. Two similar rigs – Transocean Siam Driller and

**“Keppel FELS is on track to deliver a record 20 rigs this year, and so far we have delivered 18. Most of these units are built to our winning proprietary designs. Building to our designs enables us to increase the efficiency of our building process while also providing for customised solutions.”**

*Mr Wong Kok Seng  
MD (Offshore), Keppel Offshore & Marine, and  
MD, Keppel FELS*

Transocean Andaman – which Keppel delivered in March this year, have been successful in their drilling programmes.

Mr Ihab Toma, Executive VP and Chief of Staff, Transocean, said, “In late August, Keppel FELS handed over the Ao Thai to Transocean. This transfer represents the fulfillment of the last of three of the finest rigs of their kind, built by Keppel FELS for Transocean for Chevron Thailand operations. But by no means should this be considered as an end. It is rather another milestone in the long relationship between our three companies and Thailand.”

Designed with larger spud cans, the KFELS Super B Class is able to operate in a wide array of locations, especially areas where soft soil is predominant. A key

feature is the rig’s ability to build stands offline in its drilling system package, which allows for simultaneous drilling and the preparation of drill pipes to take place.

It also has a 1.5 million pound drilling system and maximum combined cantilever load of 3,200 kips to help drive drilling operations.

Mr Wong Kok Seng, MD (Offshore), Keppel Offshore & Marine, and MD, Keppel FELS, shared, “We are delighted to be able to deliver to Transocean their third consecutive KFELS Super B Class rig ahead of schedule in 2013. The strength of this design has been reaffirmed by the excellent performances of the two rigs currently working in Thailand. We are certain this third rig will be just as successful.”

# Conversion contracts from repeat customers

Keppel Shipyard has secured two Floating Production Storage and Offloading (FPSO) conversion contracts from repeat customers SBM Offshore N.V. (SBM Offshore) and M3nergy Offshore Limited (M3nergy Offshore).

Mr Michael Chia, MD (Marine & Technology), Keppel Offshore & Marine (Keppel O&M), said, "The award of these contracts from our repeat customers affirms their confidence in us. These contracts from experienced FPSO fleet owners and operators SBM Offshore and M3nergy bear testament to our commitment to quality conversion and upgrading services.

"Over the years, Keppel Shipyard has worked closely with customers worldwide to bring to the market a range of offshore production solutions. We will continue to ensure the success of our latest FPSO projects to add value to the global offshore production market."

Keppel Shipyard's new conversion project for SBM Offshore is for the FPSO that will host the Stones ultra deepwater development by Shell in the Gulf of Mexico. Once installed, the vessel will be the deepest production facility in the world, as well as the deepest FPSO with a disconnectable buoy.

The yard's work scope for the Stones project includes refurbishment and life extension works; upgrading of living quarters; fabrication and installation of the internal disconnectable buoy system and topside module supports; as well as the installation and integration of topside modules.

The FPSO design has a processing facility capacity of 60,000 barrels of oil per day and 15 million standard cubic feet per day of gas treatment and export. The converted FPSO will be able to store 800,000 barrels of crude oil and its total topsides weight will reach 7,000 tonnes.

Meanwhile, Keppel Shipyard's second contract is from M3nergy Offshore to convert an FPSO for the Bukit Tua Field in Ketapang Block, Indonesia.

For this project, Keppel Shipyard will undertake refurbishment and life extension works; fabrication and installation of new structures, piping systems, spread-mooring system; upgrading of the living quarters; as well as the installation and integration of the topsides process modules.

Scheduled for completion in the second quarter of 2014, the FPSO has been chartered by PC Ketapang II Ltd for its operations in the Bukit Tua field, which is 35 kilometres north of Madura Island, offshore Indonesia.

The FPSO will have a production capacity of up to 25,000 barrels per day of liquids and a storage capacity of up to 630,000 barrels.



Keppel Shipyard has secured FPSO contracts from long-standing customers SBM Offshore and M3nergy Offshore

# Growing footprint in Azerbaijan



Looking at a scale model of Baku Shipyard at the inauguration ceremony are (from L to R): Dr Lee Boon Yang, Chairman of Keppel Corporation, Mr Lee Yi Shyan, Singapore's Senior Minister of State for Trade and Industry, H.E. Ilham Aliyev, President of Azerbaijan, Mr Tong Chong Heong, CEO of Keppel O&M and Mr Rovnag Adullayev, President of SOCAR

A new shipbuilding yard in Baku, Azerbaijan that is jointly developed by Keppel Offshore & Marine Ltd (Keppel O&M), State Oil Company of Azerbaijan Republic (SOCAR) and Azerbaijan Investment Company (AIC) was officially opened on 20 September 2013 by President of Azerbaijan, H.E. Ilham Aliyev. Singapore's Senior Minister of State for Trade and Industry, Mr Lee Yi Shyan, attended the inauguration ceremony of the new yard as Keppel's Guest of Honour.

Named Baku Shipyard LLC (Baku Shipyard), the new 62-ha yard in Baku, Azerbaijan, is designed to undertake the construction of a wide range of specialised vessels and merchant ships including subsea vessels, anchor handling

tug/supply vessels and multi-purpose offshore support vessels such as platform supply vessels, as well as tankers and cargo vessels. The yard also has ship repair and conversion capabilities.

Baku Shipyard adds to Keppel's existing footprint in Azerbaijan where it has been operating the Caspian Shipyard Company (CSC), also a joint venture between Keppel O&M and SOCAR, since 1997.

Mr Tong Chong Heong, CEO of Keppel O&M, said, "The inauguration of Baku Shipyard signals the opening of a new and additional chapter in the long-standing partnership between SOCAR and Keppel O&M.

Our participation in the yard demonstrates our commitment to be a long-term solutions provider for Azerbaijan.

"From our years of cooperation with SOCAR in CSC, we have accumulated a rich reservoir of technical know-how as well as meaningful market insights and networks to operate a first-class shipyard. SOCAR and Keppel O&M will continue to leverage our collective strengths to achieve new successes through our partnership in the Baku Shipyard.

"In this regard, Baku Shipyard will also build upon CSC's experiences, and at the same time support CSC in its construction activities. The new yard reinforces



Keppel O&M's *Near Market, Near Customer* strategy and enables us to unlock synergy in our Caspian operations. We are hence confident that our enhanced presence in Azerbaijan will place us in good position to capture more growth opportunities and contribute significantly to the region's energy sector."

Mr Rovnag Abdullayev, President of SOCAR, said, "We are very happy that our partnership with Keppel O&M has once again borne fruit with the successful opening of Baku Shipyard. With the strong growth potential in Azerbaijan's oil and gas sector, we believe that Baku Shipyard is well placed to support this growth and contribute to the country's economic development.

"As a leading global offshore and marine group, Keppel O&M will bring its invaluable experience to Baku Shipyard, and we are confident that our combined strength will propel the facility into an internationally recognised centre of excellence in shipbuilding, repair and conversion."

Keppel O&M currently has a 10% share in the new yard, while SOCAR and AIC own the remaining 65% and 25% respectively. Keppel O&M is responsible for the management and operation of the yard.

Phase 1 of the yard was built at an estimated cost of US\$470 million. When operating at full capacity,

the yard is able to undertake up to 100 repairs and conversions per annum and is estimated to achieve an average annual steel output of 25,000 tonnes (t). Plans for Phase 2 include the construction of a graving dock with added facilities for offshore projects.

The yard is already in discussions on several potential new projects ahead of its opening, and has also secured two contracts to construct one unit of 50-t bollard pull azimuth stern drive tug and one set of pontoons for a semisubmersible (semi) together with CSC.

Following the inauguration of the Baku Shipyard, President of Azerbaijan, H.E. Ilham Aliyev named a new floating drydock at the yard. He also officiated at a strike steel ceremony for the semi that is being built by CSC for a subsidiary of SOCAR, Caspian Drilling Company Ltd. Built to Keppel's proprietary design, DSS™ 38M, the deepwater rig is expected to be completed in 4Q 2016.

## Key milestones in Azerbaijan

**1997** Keppel FELS sets up a joint venture, Caspian Shipyard Company (CSC), in Baku.

**2000** Keppel FELS and CSC deliver Gurtulush, or Trident 20, the first Western-specification jackup rig to be built in the Caspian region.

**2003** Heydar Aliyer or Maersk Explorer, the first semi to be built in the Caspian Sea then, was constructed by Keppel FELS and CSC and delivered to Maersk Contractors.

**2006** Keppel Singmarine and CSC deliver Yuri Korchargin, the Caspian Region's first Ice-Class Floating Storage and Offloading (FSO) system, for Lukoil.

**2009** Keppel O&M signs a Memorandum Of Understanding with SOCAR and AIC on a joint venture for the construction of a new shipyard in Baku.

**2010** Baku Shipyard breaks ground, witnessed by Azerbaijan President H.E. Ilham Aliyev and Singapore's former Minister for Foreign Affairs, Mr George Yeo.

**2013** Keppel FELS secures contract from Caspian Drilling Company, a subsidiary of SOCAR, to construct a semi built to Keppel FELS' proprietary DSS™ 38M design. CSC will carry out fabrication, integration, testing and commissioning of the rig. Baku Shipyard will undertake part of the fabrication of the rig's pontoons.

# Fortifying partnership

Keppel Singmarine celebrated the naming of anchor handling tug (AHT) Seaways 22 built for Seaways International (Seaways) on 6 September 2013. This is the fourth AHT vessel that Keppel Singmarine has built for Seaways.

Mr Tan Cheng Hui, Director of Keppel Singmarine, said, "The naming of Seaways 22 marks another significant milestone in our partnership with Seaways. Our first contract with Seaways for an anchor handling tug was signed in 2005, and we have deepened our partnership with Seaways over the years."

Seaways 22 was named by Lady

Sponsor Mrs Ashish Nijhawan, wife of Captain Ashish Nijhawan, Chairman of Seaways Group. The fire-fighting capable vessel achieved a bollard pull of

78.5 metric tonnes during sea trials, and will be employed in the Angolan seas to perform marine activities such as ocean towage and anchor handling.



Mr Tan Cheng Hui, Director of Keppel Singmarine (second from right), and the team from Keppel Singmarine celebrated the naming of Seaways 22 with Lady Sponsor Mrs Ashish Nijhawan (centre, seated), and Captain Ashish Nijhawan, Chairman of Seaways Group (first from left)

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# First calling at BrasFELS



McDermott called on BrasFELS for a solution when its Pipe Laying Support Vessel, PLSV Agile, faced problems with its thruster and required emergency docking

When McDermott's Pipe Laying Support Vessel, PLSV Agile, encountered problems with one of its thrusters and needed an emergency docking, it turned to BrasFELS, Keppel's yard in Brazil, for assistance.

BrasFELS swiftly responded to McDermott's call and immediately prepared the cribbing of its floating dock FS-1 to receive PLSV Agile.

The vessel was docked in FS-1 on 8 October 2013 and the thruster was successfully replaced by Rolls Royce with support from BrasFELS.

With everything in working order, PLSV Agile departed BrasFELS on 11 October 2013.

Pleased with the yard's quality of service, McDermott presented an appreciation letter to BrasFELS in recognition of the good job done safely without any lost-time incidents.

This was the first time that a PLSV has docked in the FS-1 floating dock in the BrasFELS yard.

# New jackup for Qatar



Signing the delivery documents are (L-R) Mr Mohsen, GDI Technical Manager and Project Manager; Mr Takao Okada, GDI Operations Manager Offshore; Mr Aziz Merchant, ED of Keppel Offshore & Marine Technology Centre (Deepwater), Deepwater Technology Group and ED (Engineering), Keppel FELS; and Mr Tan Lye Soon, Senior Project Manager of Keppel FELS



GDI's B341 jackup drilling rig being towed away from Keppel FELS on 25 October 2013

Keppel FELS has delivered the jackup rig, B341 to Gulf Drilling International Ltd (GDI), a joint venture between Qatar Petroleum (QP) and Japan Drilling Co., Ltd. (JDC). Delivered ahead of time and within budget, the rig left the yard on 25 October 2013.

B341 is the third KFELS B Class jackup rig that Keppel has delivered to GDI since 2004. The yard previously delivered Al-Khor and Al-Zubarah and is currently building another KFELS B Class Bigfoot jackup, Dukhan, for delivery in 3Q 2014.

Through the projects, Keppel has built a close partnership with GDI which has been instrumental in the construction process. Mr Timothy Ow, Project Manager of Keppel FELS said, "Having worked with GDI on previous projects, we are able to anticipate their needs and have close communications with them on every aspect of the project. This latest timely and safe delivery demonstrates the strong teamwork between our two teams. We are able to carry this momentum into the next jackup that we are building for them and increase efficiency and productivity."

Customised to GDI's requirements, the new jackup rig has been

designed to operate in the higher ambient temperatures of the Middle East.

The KFELS B Class Bigfoot is equipped with larger spud cans for reduced bearing pressure, expanding its operational coverage to more areas, especially those where soft soil is predominant. GDI's new rig also features an enhanced leg design for added robustness. The rig will have a full 15,000 psi BOP system and 75-foot cantilever outreach, and will be able to accommodate 150 persons.

Mr Mohsen, Technical Manager/ Project Manager of GDI, added, "We are pleased to be working with our trusted partner, Keppel. Once again they have been able to deliver a premium rig to us to our highest satisfaction. We share similar values in ensuring that the rig is delivered not just on time but also with the highest standards of safety and quality. We are confident that B341 will be just as successful as her sister rigs, Al Khor and Al Zubarah when deployed, and look forward to receiving Dukhan in similar fashion."

B341 has been chartered by Maersk Oil Qatar and will be deployed in Qatar.

On top of its newbuilding contracts with Keppel FELS, GDI is also upgrading and repairing its rigs at Nakilat-Keppel Offshore & Marine (N-KOM), a joint venture shipyard between Keppel Offshore & Marine and Qatar Gas Transport Company.

# Prospering relationship

Keppel Singmarine's successful delivery of bulk carrier Fly Prosperity to Ok Tedi Mining bears testament to the close collaboration between the two companies and Ok Tedi Mining's technical team, SeaTec.

The vessel was named at Keppel Singmarine on 24 October 2013 by Lady Sponsor Mrs Naomi George, wife of Mr Benjamin George, Manager (Supply & Logistics) of Ok Tedi Mining.

Mr Hoe Eng Hock, MD of Keppel Singmarine, said, "Fly Prosperity was a challenging project which offered an invaluable experience to the teams involved. Kudos to

them, the project was completed with a perfect safety record."

A well-equipped bulk carrier, Fly Prosperity is a dual-purpose vessel, capable of transporting copper concentrate from the mining site to a transshipment

port, and fuel and other provisions from the transshipment port back to Ok Tedi Mining's facilities. This is the first of three bulk carriers awarded to Keppel Singmarine by Ok Tedi Mining. The construction of the other two vessels is progressing well.



Keppel Singmarine's management and OK Tedi Mining management celebrated the naming of Fly Prosperity

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# Historical vessel at Verolme

Keppel Verolme in the Netherlands received a piece of history when the historic naval ship Buffel arrived at the yard on 20 September 2013.

Keppel Verolme, along with its subsidiary, Marine & Offshore Protection and Preservation, were commissioned by the Maritime Museum to carry out painting of the underwater hull and inspection of the overboard valves on the museum ship.

Built in 1868 in Glasgow, Scotland, the 62.68 metre long Buffel was the first ironclad turret-ram ship

of the Royal Netherlands Navy with a steam engine and two propellers. The ship participated in many national exercises with the Royal Netherlands Army and finally retired from active duty in 1896, becoming an accommodation ship. In the 1970s, the Buffel was decommissioned and sold to the city of Rotterdam to become a museum ship. Over the last 40 years, the Buffel was established in the Rotterdam harbour, at the quay side near the Maritime Museum, in the heart of Rotterdam.

The Buffel left Keppel Verolme on



4 October 2013 for her new home, Maritime Museum 'Jan Blanken' in Hellevoetsluis.

# OSV industry insights



Mr Choo Chiau Beng, CEO of Keppel Corporation and Chairman of Keppel Offshore & Marine, spoke about the importance of innovation and technology development for the Offshore Support Vessel industry to remain competitive, at the OSV Singapore 2013  
*Photo courtesy of OSV Singapore 2013*

new challenges requiring innovative solutions.

These and other industry issues were discussed at the 5th International Conference on Technology & Operation of OSVs – OSV Singapore 2013, which was supported by Keppel Singmarine for the fifth consecutive time since 2005 as its sole Solitaire Sponsor. Held at Singapore Polytechnic from 24 to 25 September 2013, the biennial event gathered ship designers, shipbuilders, OSV owners and operators, drilling contractors, and installation contractors for technical presentations and panel discussions.



Mr Chow Yew Yuen (right), COO and CEO-designate of Keppel Offshore and Marine and Chairman of Keppel Singmarine, received a plaque from Mr Tan Kim Pong, Chairman of the Organising Committee of OSV Singapore 2013, for the company's long-standing support for the event  
*Photo courtesy of OSV Singapore 2013*

As the Guest of Honour, Mr Choo Chiau Beng, CEO of Keppel Corporation and Chairman of Keppel Offshore & Marine (Keppel O&M) spoke about the importance of innovation and technology development to remain competitive. Mr Au Yeong Kin Ho, GM (Engineering) of Keppel Singmarine and GM of Marine Technology Development (MTD), Keppel Singmarine's design arm, also gave a presentation on design challenges and solutions for "New Generation Deepwater Pipelay and Heavy Construction Vessels."

The conference was organised by the Joint Branch of the Royal Institution of Naval Architects and the Institute of Marine Engineering, Science & Technology (Singapore) along with Newcastle University (Singapore) and Singapore Maritime Academy, Singapore Polytechnic.

The growth in the size and complexity of Offshore Support Vessels (OSV) needed in the offshore oil and gas industry, fuelled by new emerging technology, continuously presents

# Superior design



Dr Vivian Balakrishnan, Minister for the Environment and Water Resources (third from left), presented the IES Prestigious Engineering Achievement Award 2013 to Mr Aziz Merchant (second from left), ED (Engineering) of Keppel FELS, ED of Deepwater Technology Group and ED (Deepwater Technology) of Keppel Offshore & Marine Technology Centre in recognition of Keppel FELS' outstanding design project, the DSSTM 20NS accommodation semisubmersible

Keppel FELS' innovative harsh environment accommodation semisubmersible design, DSST<sup>TM</sup> 20NS, was conferred the IES Prestigious Engineering Achievement Award 2013 by the Institution of Engineers Singapore (IES) at the World Engineers Summit Gala Dinner and Award Presentation, held on 13 September 2013.

Mr Aziz Merchant, ED (Engineering) of Keppel FELS, ED of Deepwater Technology Group and ED (Deepwater Technology) of Keppel Offshore & Marine Technology Centre, received the award from Dr Vivian Balakrishnan, Guest of Honour and Singapore's Minister for the Environment and Water Resources.

The award recognises Keppel FELS for its outstanding design project which it jointly undertook with design partner GustoMSC.

Mr Merchant shared, "This award is a great encouragement to our team's continuous efforts to work with discerning customers and partners to develop leading edge, commercially-viable solutions.

"The DSST<sup>TM</sup> 20NS design incorporates some of Keppel's tried-and-tested enhancements as well as the unique requirements of our customer and its markets. Floatel Superior's strong performances on all her deployments bears testament to the strength of her design and construction."

A new generation rig, the DSST<sup>TM</sup> 20NS is designed to meet the most stringent rules and regulations for worldwide operations, including the Norwegian Sector of the North Sea. The first unit to be built to this design – Floatel Superior – was completed in 2010 for Floatel International Ltd (Floatel), and is presently operating for Statoil ASA in the North Sea.

With Floatel Superior turning out excellent performances, Floatel ordered a second DSST<sup>TM</sup> 20NS unit from Keppel FELS in 2012. The second unit is on track for completion in the second quarter of 2014.

# Building blocks for jackups



Mr Lars Hansen (centre), Maersk Site Manager presenting safety bonus cheques to the Project Managers of Keppel FELS



The Grupo R and Keppel FELS teams giving the thumbs up to mark the start of the Mexican projects



NAGA 6 being launched from the slipway of Keppel Singmarine

With over 30 newbuild projects running concurrently, Keppel FELS keeps track of all its projects through close supervision and by marking the schedules of significant milestones that

represent the completion of the projects' various building blocks. This has enabled the yard to ensure that ongoing projects are safe, on time and on budget.

On 19 September 2013, the project teams of the Maersk CJ70s projects with hull numbers B331 and B347 celebrated eight million and two million safe manhours worked respectively. In recognition of this achievement, Maersk presented the teams with a safety bonus of US\$30,000 and a plaque for each project.

On 1 October 2013, three projects for Mexican customer Grupo R struck steel, marking the start of

the physical construction of the rigs. The jackup rigs – Cantarell IV (B357), Paraiso I (B360) and Paraiso II (B361) – were ordered earlier this year and scheduled for delivery in 2015.

In the construction of the record number of rigs this year, Keppel FELS also leveraged synergies with its sister yards to maximise efficiency – the construction of the hulls of NAGA 6 (B340), the jackup rig for UMW, was undertaken by Keppel Singmarine. The hull was launched on 24 September 2013 from the slipway of Keppel Singmarine with representatives from UMW, Keppel and Noble Denton witnessing the event.

# Shaping a safe future



Mr Chor How Jat (right), MD of Keppel Shipyard, received the Chairman Safety Challenge Trophy on behalf of Keppel Shipyard from Dr Lee Boon Yang, Chairman of Keppel Corporation

Keppel is not just 'Shaping the Future'; it is 'Shaping a Safe Future'. This was the theme of the 7th Keppel Group Safety Convention held on 7 October 2013 at the Singapore Expo hall. It is one of the Group's annual pillar events which saw over 600 Keppelites, partners, contractors and subcontractors reaffirm their commitment to safety.

The theme is a continuation of the initiatives by Keppel's different business units to better foster a safety culture. This includes a cross business unit audit exercise to facilitate the sharing and learning of good Health, Safety and Environment practices.

Efforts across the Keppel Group have resulted in a reduced number of workplace incidents in 2013 compared to a year before. For the first eight months of 2013, the

Group's Accident Frequency Rate was 0.15 reportable accidents for every million man-hours worked, down from 0.17 over the same period last year. Its Accident Severity Rate also decreased to 42 man-days lost per million man-hours to-date, as compared to 84 for the same period last year.

Lauding the achievement, Mr Choo Chiau Beng, CEO of Keppel Corporation and Chairman, Keppel Offshore & Marine, said, "Our efforts have not gone unnoticed. At the Workplace Safety & Health (WSH) Awards in July this year, the Group garnered a total of 32 awards – testament to our continuous commitment to uphold safety in all our businesses. Internationally, Keppel Shipyard was awarded the Lloyd's List Global Safety Award 2013."

Even as Mr Choo commended

Keppelites on their safety efforts, he reminded them that to shape a safe future, Keppel must continually strive, as a Group, to raise the bar in working towards a zero-incident workplace.

He emphasised the need for everyone to play a significant part in Keppel's safety journey. "Keppel has grown through the ups and downs over the last 45 years. We are what we are today not by chance, but because we constantly strive for excellence in all that we do. There is always more that we can do and learn from each other, which is why we work very hard to involve stakeholders such as our partners and contractors in our pursuit of innovative solutions that can improve productivity and safety at our worksites," he shared.

Guest of Honour Mr Heng Chiang Gnee, Deputy Chairman of the



WSH Institute, shared in his keynote address, "It is heartening to know that senior management across the Keppel Group give this event top priority. This is testament to their dedication in encouraging their staff to share best practices and take lessons learnt seriously, to prevent recurrence not just for

themselves but for everyone across Keppel's businesses."

He commended Keppel for setting a good example in enforcing high safety standards for employees and contractors, saying that this will help guide small and medium enterprises in their safety journey.

To further promote safety awareness, a Behavioural Consultant, Mr Douglas Hamilton, gave a presentation on cultivating safe habits while a quiz on what constitutes safety brought about robust audience participation.

## Recognising innovations in safety

The Chairman Safety Challenge Trophy is awarded every year to the business unit that best demonstrates outstanding initiatives, performance and innovation in safety. Keppel Shipyard, with its exemplary safety record and proactive initiatives, was that business unit this year.

In total, 12 gold, 11 silver and 11 bronze awards were given to teams who developed exemplary Safety Innovation Projects. At the Convention, videos of four exceptional projects which won the gold award were screened to raise awareness and spur innovation.

Two of the top four projects were 'Thruster Lifting Jig' by a team from Keppel Shipyard and 'Easy Rotate, Easy Move' by a team from Keppel Singmarine.

Three of the projects by Keppel Offshore & Marine had also received awards at the 16th Association of Singapore Marine

Industries (ASMI) Convention for Workplace Safety and Health Innovations on 25 September 2013. The projects 'Thruster Lifting Jig' won gold award while 'Easy Rotate, Easy Move' and 'Auto Hydraulic Hose Installer' by Keppel FELS received the silver awards.

### 'EASY ROTATE, EASY MOVE'

The innovation, "Easy Rotate, Easy Move", helps to significantly lower the risk of finger and back injuries when installing spools onto a vessel as well as improve efficiency. On average, a vessel consists of approximately 1,000 large spools and each spool has to be aligned on two sides. Due to the heavy weight of large spools, it is not easy to move and hold them and the risk of a small slip when handling these spools can cause serious injuries to the worker's fingers and body and also lead to long term back injuries.

"Easy Rotate, Easy Move" is a jig with ball bearings which act as a support for the spools. Once the spool is placed on the jig, the

workers can shift and align the pipes easily, while keeping the vulnerable parts of their body at a safe distance from the joints.

### THRUSTER LIFTING JIG

At Keppel Shipyard, thrusters weighing as much as 25 tonnes and irregular in shape are moved from the drydock to the workshop. This can be challenging to transport as workers have to lift and secure them to the trailers using cranes, belts, wooden wedges and planks, with the risk of their hands being injured. In addition, on uneven roads, the thrusters could potentially topple over.

The Thruster Lifting Jig can securely hold the thruster so that it can be lifted just by hooking the crane or chain blocks to the jig and can securely hold it in place while being transported. The jig has made it much safer to transport and handle the thrusters and saves at least half of the time spent in securing the thruster on the truck.

# Shipshape safety



Mr Michael Chia (centre), MD (Marine and Technology) of Keppel Offshore & Marine receiving the Lloyd's List Global Award for safety on behalf of Keppel Shipyard

For its efforts and achievements in ensuring a safe workplace, Keppel Shipyard has been conferred its first Lloyd's List Global Award.

Mr Michael Chia, MD (Marine and Technology) of Keppel Offshore & Marine, received the Safety Award on behalf of Keppel Shipyard at the awards ceremony, which was held in London, on 1 October 2013.

Mr Chia commented, "We are honoured to be recognised by the global industry and Lloyd's List for our continuous efforts towards safety. At Keppel Shipyard, safety is a core value. To ensure a safe work environment, we work closely with our customers, subcontractors and employees. Hence, this award also bears testament to our shared commitment with our stakeholders towards safety."

The Lloyd's List Global Awards 2013 celebrated achievements in the



The Keppel Safety Training Centre is among the various initiatives put in place by Keppel Shipyard to rally its workforce to be in step with its safety journey

global maritime industry. Keppel Shipyard is also the finalist of both the Safety Award and Shipyard of the Year Award categories for Lloyd's List Asia Awards which will be held on 26 November 2013.

This is not the first time that Keppel Shipyard has won accolades from Lloyd's List. In 2012, at the Lloyd's List Asia Awards, Keppel Shipyard was named Shipyard

of the Year in recognition of its long-standing commitment to its customers by having consistently delivered safe, high quality and prompt services.

Earlier this year in June, Keppel Shipyard also received the Safety Award at the Seatrade Asia Awards held on 21 June 2013 in Hong Kong.

# Safety partnership



Keppel Shipyard has been engaged for all of Bumi Armada's FPSO/FSO conversion and upgrading projects to-date



Keppel Shipyard was presented US\$20,000 by BAB and Apache Energy for its commendable safety performance on the FPSO Armada Claire project

Keppel Shipyard and longtime customer Bumi Armada Berhad (BAB) celebrated their successful partnership at a safety ceremony on 13 September 2013.

Together, the partners achieved 2.5 million safe man-hours on the refurbishment and upgrading of

the Floating Production Storage and Offloading (FPSO) unit, FPSO Armada Claire. At the same time, Keppel Shipyard and BAB commemorated the achievement of more than 12 million man-hours on five FPSO and Floating Storage and Offloading (FSO) projects undertaken from 2008 to 2013.

The projects were FPSO Armada Perdana, FSO Sepat, FPSO Armada TGT 1, FPSO Armada Sterling and FPSO Armada Claire.

Keppel Shipyard was presented US\$20,000 by BAB and its customer, Apache Energy Limited (Apache Energy), for its commitment and efforts towards safety while working on FPSO Armada Claire.

BAB also presented tokens of appreciation to Keppel Shipyard's project teams for their outstanding contributions on the five FPSO/FSO projects.

Recognising that a safe work environment can only be sustained with the cooperation of all stakeholders, Keppel Shipyard also presented BAB with a token of appreciation for the support rendered.

The ceremony was witnessed by BAB's Mr Peter McDonnell, Senior VP, Asset Management & Operations, Mr Paul Natarajan, VP, Construction & Commissioning, and Mr Noval Paredes, VP, Health Safety Environment and Quality, as well as Apache Energy's Mr Roger Lewis, Manager, Projects Execution.

Representatives from Keppel include Mr Michael Chia, MD (Marine & Technology) of Keppel Offshore & Marine, Mr Louis Chow, Senior GM (Commercial) of Keppel Shipyard, and Mr Burt Loh, GM (Operations) of Keppel Shipyard.

# In step with Latin America



Commemorating Keppel's ten years of support for the Latin Asia Business Forum, Mr Teo Eng Cheong (left), CEO of International Enterprise Singapore, presented Keppel Corporation's CEO Mr Choo Chiau Beng (right) with a watercolour painting by Colombian artist, Cesar Bertel

With a variety of key operations and businesses in Latin America, Keppel has made it a point to continually strengthen ties with the region. In the months of September and October 2013, it sponsored and participated in an inter-government forum, and hosted visits by business and media delegates from the region.

## DISPLAYING THOUGHT LEADERSHIP

Keppel Group was a top tier sponsor for the Latin Asia Business Forum (LAB) 2013, which brought

together more than 3,000 government and business leaders from over 50 countries to develop opportunities and partnerships between Latin America and Asia.

Mr Choo Chiau Beng, CEO of Keppel Corporation and Chairman of Keppel Offshore & Marine (Keppel O&M), as well as Singapore's non-resident Ambassador to Brazil, was a panelist for the discussion *'Harnessing Opportunities in Latin America's Oil & Gas Sector.'* Mr Choo shared on Keppel's

early years in Brazil and how it established a significant offshore and marine presence in the country. He also gave his views on energy policies and trends in Latin America and Asia, including the impact of shale gas discoveries and Mexico's plans for energy reforms.

The annual event is organised by International Enterprise (IE) Singapore and Mr Tharman Shanmugaratnam, Singapore's Deputy Prime Minister and Minister for Finance, was the Guest of Honour.

To thank Keppel for its ten years of support, Mr Teo Eng Cheong, CEO of IE Singapore, presented the Group with a water colour painting by Colombian artist, Cesar Bertel.

A cocktail reception co-hosted by Keppel Group rounded off the day's activities, providing Latin American customers and Keppel management the opportunity to network.

## BUILDING BUSINESS RELATIONS

A delegation led by Mr Alonso Quintana Kawage, CEO and President of ICA, one of the largest construction companies in Mexico, visited Keppel O&M on 4 October 2013. With intentions to participate in the oil and gas sector, the ICA delegation was interested to find out more about offshore rigs.

The visit was hosted by Mr Tong Chong Heong, CEO of Keppel O&M and Mr Chow Yew Yuen, COO and CEO-Designate, Keppel O&M,



Keppel O&M's CEO, Mr Tong Chong Heong (second from left) and COO and CEO-designate, Mr Chow Yew Yuen (first from right) hosted a visit by CEO and President of ICA, one of the largest construction companies in Mexico, Mr Alonso Quintana Kawage (second from right)

who shared on the company's capabilities and discussed possibilities for future partnerships.

Mr Kawage was a panelist at the LAB 2013 where he spoke on the topic of *'The Urban Century – Infrastructure for Liveable Cities'*.

## Fostering greater engagement

On 30 September 2013, Keppel O&M played host to five well-regarded journalists from Brazil, Venezuela, Costa Rica and Columbia who visited Singapore as part of the Forum for the East Asia-Latin America Cooperation (FEALAC) Journalists Visit Programme (JVP).

Mr Chow Yew Yuen, COO and CEO-designate of Keppel O&M, hosted the visit and responded to the journalists' queries in a

wide spectrum of topics ranging from Keppel's businesses, projects for their respective countries over the years, to business and industry prospects in the African continent. Following a robust discussion, the journalists went on a tour of Keppel FELS' Pioneer Yard.

FEALAC was formed in 1998 by then Singapore Prime Minister Goh Chok Tong to establish ties between East Asia and Latin America. It aims to increase

political and economic exchange and cooperation between the two regions.

An initiative under FEALAC, the JVP encourages greater mutual understanding at the people-to-people level through such visits by the Latin American media to Singapore.

Singapore has been organising the FEALAC JVP since 2000.

# Encouraging innovation



Keppel O&M celebrated innovations and the teams behind them at the inaugural group awards ceremony and symposium on 30 September 2013

Over the years, Keppel Offshore & Marine (Keppel O&M) has built a global reputation for innovative offshore solutions which meets the needs of its customers and the industry. From Keppel FELS' semisubmersible drilling tender (KFELS SSDT™) which has revolutionised the way drilling tenders operate, and the KFELS B Class jackup rig which is today the industry benchmark design, to the DSS™ series of semisubmersibles

which are some of the world's most advanced drilling semisubmersibles, Keppel O&M's products have been winning accolades from customers and the industry alike for excellence in design and operability.

On 30 September 2013, the teams behind these and other outstanding innovations and designs which have placed Keppel O&M on the world map were recognised for their contributions at the inaugural Keppel O&M Innovation Ceremony and Symposium.

Further fostering the culture of continuous innovation at its business units, Keppel O&M is recognising innovative projects and work process improvements at the group level for the first time.

A total of 29 awards were given out during the ceremony, which included three awards in the Gold, Silver and Bronze category each, and 20 awards in the Commendation category. On top of commendation plaques, winning

teams in the Gold, Silver and Bronze categories were awarded cash prizes of \$15,000, \$10,000 and \$5,000 respectively. Each winner in the Gold category also received a special Keppel Innovator collar pin.

The 29 winners were shortlisted by a steering committee comprising management across the group. Mr Chow Yew Yuen, COO and CEO-designate of Keppel O&M, is Chairman of the steering committee.

The winning entries were assessed based on a set of criteria that include, among others, the projects' level of impact and scalability, extent of alignment between their objectives and the group's goals, and sustainability of results in the medium to long term.

The KFELS B Class jackup rig design and Keppel's patented jacking system, which is a critical component of the KFELS B Class jackup rig, both clinched the Gold Award.

Apart from large-scale projects,



KFELS B Class jackup rig design won the top accolades at the awards ceremony



due recognition was also given to smaller-scale innovations. These creative solutions play critical roles in enhancing the successful, timely and safe execution of projects.

A good case in point is the team behind the project Radio Frequency Identification (RFID) Enabled Remnant Plate Management System from Prime Steelkit, which was one of the 20 winners to receive the Commendation Award.

The team's adoption of RFID-enabled system in organising remnant steel plates has led to a 50% reduction in material handling time and higher material utilisation for the steel processing company.

Emphasising that innovation goes beyond the domains of science and technology, Mr Chow said, "Innovation should not just come from the researchers and engineers – an accountant from the corporate office or a welder in the pipeline workshop can also innovate to make their daily work more effective.

"By giving out the commendation awards, we hope to encourage everyone to incorporate creative thinking and innovative solutions into their everyday work. Innovation does not always have to be game-changing or revolutionary. It can be something smaller, and closer to one's day-to-day work."

Mr Peter Noble, Senior Advisor of Keppel Offshore & Marine Technology Centre (KOMtech), also shared his words of encouragement and motivation through a video. Quoting the late co-founder of Apple, Steve Jobs, Mr Noble reminded Keppelites that "innovation distinguishes between a leader and a follower", and that Keppel, as an industry leader, needs to continue innovating to maintain its forefront position.

Following the ceremony, a symposium was held where invited speakers shared on how innovation could be put into practice. Over two days from 30 September to 1 October 2013, six speakers from within and outside the Keppel

O&M group touched on topics ranging from the importance of sound engineering principles in good and innovative solutions, to the application of 3D printing technology in engineering work.

Mr Aziz Merchant, ED of Keppel FELS (Engineering), Deepwater Technology Group and KOMtech (Deepwater Technology), was one of the speakers at the symposium. Having been involved in the birth of several of Keppel's proprietary designs, Mr Merchant shared with fellow Keppelites his experience and journey in finding opportunities in seemingly impossible circumstances.

A recipient of the Gold Award himself, Mr Merchant shared that innovation is cumulative and the result of teamwork rather than just a 'Eureka' moment. It is a continuous learning process – something that the Keppel O&M Innovation Ceremony and Symposium aims to celebrate and encourage.

Having been with Keppel O&M for more than 40 years each, Mr Choo Chiau Beng, Chairman of Keppel O&M, and Mr Tong Chong Heong, CEO of Keppel O&M have witnessed firsthand how innovation has transformed the company and driven it forward. At the ceremony, they spoke of their experience and inspirations. *OffshoreMarine* reproduces here some highlights from the speeches.

### MR CHOO CHIAU BENG

#### INNOVATE TO SURVIVE

"Businesses and companies who fail to innovate will become obsolete. Keppel O&M has been fortunate in a way to be faced by threatening times in the 1980s. The then-Prime Minister had called us a sunset industry. But we refused to give up, and we continued to find new and better ways to compete and survive. To those who have innovated to help us stay alive, thank you."

#### CREATING VALUE WITH INNOVATION

"Innovation is an effort to think of

new ideas and new ways of doing things better to create value for us, either in producing better products or new methods of doing things. Most important of all, innovation can help to create new business models that are game-changing."

#### EVERYONE IS AN INNOVATOR

"We cannot depend totally on our Research & Development department or KOMtech (Keppel Offshore & Marine Technology Centre) to innovate for us. All of us are innovators, and all of us can think creatively, including those down the line at the workshops such as the welders. Every one of us can think of new and better ways to do things."

### MR TONG CHONG HEONG

#### EARLY YEARS IN FELS

"Having the best engineers does not make a difference if they cannot innovate or think outside the box. Our FELS engineers in the 80s were mainly focused on following the old and tested ways of working such that they

completely forgot all about how innovative they can be. So once we realised that the old methods could no longer work, we had to think of something new and better. Today, we are building 5,000-tonne floating cranes which would be unimaginable in those days when only a 300-tonne crane was used. And because we know we cannot fully utilise such big cranes, we formed a partnership with Smit (Singapore) who now operates these cranes. These are some examples of the creative solutions we have come up with."

#### THE IMPORTANCE OF TEAMWORK

"Innovators and inventors will be of little use to an organisation if they cannot come together to collaborate and create new ways or products that can help their company. That is why the production and engineering people need to work together as a team. Fostering a culture of teamwork within Keppel O&M has led to some of the brightest ideas such as the FELS *Can Do* barge."



Mr Choo Chiau Beng



Mr Tong Chong Heong



This is a list of all the award-winning projects at the inaugural Keppel O&M's Innovation Awards Ceremony. *OffshoreMarine* will feature some of these innovations in subsequent issues.

| Project Name                                       | Business Unit                                 | Award        |
|--|---|--------------|
| KFELS B-Class Jackup Design                        | Keppel FELS                                   | Gold         |
| Jacking System                                     | Keppel FELS                                   | Gold         |
| Semisubmersible Drilling Tender 3600               | Keppel FELS                                   | Gold         |
| Semisubmersible Accommodation Unit 5000NG          | Keppel FELS                                   | Silver       |
| Fixation System                                    | Keppel FELS                                   | Silver       |
| Afloat 2C Joining Methodology                      | Keppel FELS                                   | Silver       |
| FELS Can-Do Semisubmersible Barge                  | Keppel FELS                                   | Bronze       |
| Leg Fishing Operation                              | Keppel FELS                                   | Bronze       |
| Keppel Safety Training Centre                      | Keppel Shipyard                               | Bronze       |
| End to End Piping Automation System                | Keppel FELS                                   | Commendation |
| Jackup Strip Method of Construction                | Keppel FELS                                   | Commendation |
| Steel Supply Chain Management                      | Keppel FELS                                   | Commendation |
| Auto Generation of Piping Isometric Drawing        | Keppel FELS                                   | Commendation |
| Introduction of GMAW                               | Keppel Shipyard                               | Commendation |
| Spread Mooring Block Fabrication                   | Keppel Shipyard                               | Commendation |
| Transformation of Pipe Shop 3                      | Keppel Shipyard                               | Commendation |
| Welding Consumable Station                         | Keppel Shipyard                               | Commendation |
| Auto Erection Joint Welding With Quantum Lift      | Keppel Singmarine                             | Commendation |
| RFID Enabled Remnant Plate Management System       | Keppel Singmarine                             | Commendation |
| Ladder Lift (Smart Ladder Lift)                    | Keppel Offshore & Marine<br>Technology Centre | Commendation |
| Stackable Fixed Scaffolding Implementation Project | Keppel AmFELS                                 | Commendation |
| Integrated Module Skidding – FPSO CdP              | Keppel FELS Brasil                            | Commendation |
| Module Lifting, Skidding & Integration – FPSO MV23 | Keppel FELS Brasil                            | Commendation |
| Thruster Installation at Dry Dock - NRE            | Keppel FELS Brasil                            | Commendation |
| Buckling Screening Tool                            | Keppel FELS Baltech                           | Commendation |
| Mobile Platform                                    | Keppel Nantong Shipyard                       | Commendation |
| Mewis Duct Installation Jig                        | Nakilat-Keppel Offshore & Marine              | Commendation |
| Blocks Joining by Skidding Method                  | PT Bintan Offshore                            | Commendation |
| Turning Roller                                     | Regency Steel Japan                           | Commendation |

# Can Do innovation



The Can Do Drillship leads the race, Post-BP Macondo, with the capability of operating with a 20K BOP, providing a reliable, advanced and cost effective solution for the offshore drilling industry

Ever at the forefront of innovation, Keppel Offshore & Marine (Keppel O&M) is constantly developing new designs to maintain its position as an industry leader. Its latest product is a first-of-its-kind drillship – the CAN DO 20Kpsi drillship.

Designed to meet the needs of the industry following the BP Macondo incident in 2010, this next generation 20,000-psi blowout preventer-ready (20K BOP-ready) deep-water drilling unit leads the race for drillships with the capability of operating with a 20K BOP.

Previously, floaters equipped with 15,000-psi BOPs were

modified by drilling contractors in order to handle additional mud required to drill subsea wells under higher reservoir pressures.

Working in collaboration with GustoMSC as its design partner, Keppel O&M Technology Centre (KOMtech), the R&D arm of Keppel O&M, started work on the design of the Can Do 20K psi drillship last year.

Besides designing the drillship with exploration drilling requirements in mind, Keppel's Can Do drillship design also allows for the installation of third party equipment often required for development wells through the

incorporation of a large deck space.

Having consulted with every major oil company, KOMtech has worked to meet all their requirements such as having a double BOP stack integrated in the new drillship design. It also has the necessary height and handling capacity, providing for the expected two full stacks of 8 Ram, 20K BOP.

Its specifications exceeds the ultra-deepwater drilling unit designs currently available in the market, with a riser hold capacity surpassing 12,000 feet, together with the flexibility of storing either 75 foot or 90 foot long riser in a unique Riser hold design

that is able to accommodate both of these industry standards depending on drilling contractor's preference.

Ensuring operational efficiency, the rig's loading capability is about 36,000 tonnes (t), and the ballast capability and system help keep the vessel at an even draft throughout operations.

The Can Do unit offers a high transit speed resulting in fast mobilisation time. Its funnel arrangement is split catering for an open work deck aft of the moon pool.

The drilling capabilities of the unit were designed based on

the needs of 20k wells. Based on oil company requirements for heavy casing, higher hook load, setback capacity and associated equipment have been catered for in the design. Providing for increased water depth capability, the structures were designed to receive heavier riser tensioners which are well integrated in the design. Mud pumps, mud pits, two ROVs, cementing unit, amongst many others are integrated in the mud module which is placed above the main deck, creating a compact drilling plant with short distances and associated communication lines. On top of the mud module, a pipe rack deck which can also store third party equipment has been created, and directly below the

deck, the high capacity sack store is located with direct access from the aft through a landing platform.

The Can Do vessel is not only designed for superior performance. This workhorse will also be a comfortable and pleasant residence for its 220 personnel on board. It is set to have an enhanced level of functionality with areas which are clearly marked out for living spaces, recreational areas, public spaces and office spaces including third party offices. Office areas with clear view of ongoing operations will be given direct access to the working areas through an access deck located at the drillfloor level.

The vessel meets and exceeds regulatory standards such as the latest environmental regulations, including the application of SCR systems. Its system layout is in accordance with DP3 safety regulations – standards stipulated by regulatory organisations, classification societies and oil companies.

Model tested at the Marin facility in the Netherlands in January this year, the Can Do drillship has already obtained class approval for basic design and a full 3D model has been created for construction purposes.



# Total solutions to meet offshore growth



Besides showcasing Keppel O&M's latest products and developments, the Pareto Securities annual Oil & Offshore Conference is also good opportunity for Keppel senior management such as Mr Loh Chin Hua (right), CFO and CEO-designate of Keppel Corporation, and Mr Chow Yew Yuen (3rd from left), COO and CEO-designate of Keppel O&M to network and meet up with customers

The offshore oil and gas industry is anticipating healthy growth with increasing energy demand. This was the view held by more than a hundred companies who presented at the 20th Pareto Securities annual Oil & Offshore Conference held in Oslo, Norway, from 4 to 5 September 2013.

Well positioned to tap into this growth is Keppel Offshore & Marine (Keppel O&M), the world's leading rig builder. Mr Chow Yew Yuen, COO and CEO-designate of Keppel O&M, presented Keppel's suite of technologically-advanced solutions at the Conference.

Keppel O&M's total solution suite that meets the evolving needs of drilling contractors and oil

companies include robust and efficient jackup rig designs such as the Arctic jackup or the KFELS E Class jackup, harsh-environment semisubmersibles such as the DSS™ 60 HE or the SSDT™ 5000E, and a new generation drillship - the CAN DO 20K PSI drillship.

With oil production falling due to the depletion of oil wells, more investments are needed to extract from current oil wells and to explore new terrains.

Pareto Securities projected Exploration and Production spending to grow by 8% in 2014, with potentially over 130 jackup rigs and 90 floaters to be replaced in the next 10 years. Drilling contractors also illustrated how oil

companies are looking for higher specification rigs to replace the ageing fleet.

At the Conference, Brazil, Mexico and Southeast Asia were highlighted as regions to watch in the coming year. These are also some of the regions that Keppel O&M has a strong presence in, shared Mr Chow.

Currently, Keppel O&M is headquartered in Singapore and well-supported by yards in China, Philippines and Indonesia. It has a comprehensive yard in Brazil, currently building six drilling semis, and has an established presence in the Mexican market as seen from the 20 rigs delivered or on order for Mexico over the years.

Keppel O&M has been a regular participant and presenter at the Pareto conference, which is Europe's leading forum on the offshore industry's outlook, emerging trends and challenges for investors and industry managers.

# Norwegian connection

Norway has played an important role in Keppel's growth story. With relationships established since the early 1980s, Keppel Offshore & Marine (Keppel O&M) has been receiving strong support from Norwegian partners.

Many firsts for Keppel O&M were achieved with the support of Norwegian customers. The company built the first semisubmersible Aker H3 for Wilhemson; the first accommodation semi for Consafe Offshore for the Ekofisk field in Norway and the first two Offshore Support Vessels for deployment in the Norwegian North Sea for Finn Bugge with RS Platou as the broker.

CEO of Keppel Corporation and

Chairman of Keppel O&M, Mr Choo Chiau Beng, recounted the strong partnerships as he shared the Keppel story with members of the Norwegian Business Association (Singapore) (NBAS) at a luncheon talk organised by the association at Hilton Singapore on 17 September 2013.

Mr Choo shared how Keppel had carved its reputation with reliable deliveries, excellent execution and its *Near Market, Near Customer* strategy; in turn it has built long-term relationships with many valued partners around the world.

On the many successful partnerships Keppel has had with Norwegian companies, Mr Choo commented, "Keppel

and Norwegian companies are similar in many aspects. Our home countries provide very limited markets by themselves, so we need to venture out. We welcome more partnerships with Norwegian companies and service providers, and we can, together, explore new markets."

He added, "As a small country, Singapore has to strive to be an exceptional country to be useful to others. In the same way, Keppel also has to be useful to our customers. We don't have a natural advantage. People need not buy from us. They do so only if they find it worthwhile."

Mr Choo is the first recipient of the NBAS Award when he received it in 2010.



Mr Choo Chiau Beng, CEO of Keppel Corporation and Chairman of Keppel O&M, shared the Keppel story with members of the Norwegian Business Association (Singapore)

# Learning over lunch

Over 100 Keppelites and senior management of Keppel Offshore and Marine (Keppel O&M) enjoyed a good learning session over lunch on 4 September 2013 with sharing by guest speaker Mr Lim Chin Leong, Board Director of Keppel O&M.

Mr Lim is former Chairman of Asia, Schlumberger. Over a career of 30 years with Schlumberger, Mr Lim held senior management positions in a wide range of areas and locations spanning Asia Pacific, Middle East and the US.

During the one-hour session at Keppel O&M, Mr Lim shared his invaluable work experiences and insights on career development. He recounted his team's excitement upon their first discovery of oil in Perth, Australia. The firm friendships he had formed with his



Mr Lim Chin Leong, Board Director of Keppel O&M, shares his experience at Keppel O&M's lunchtime talk

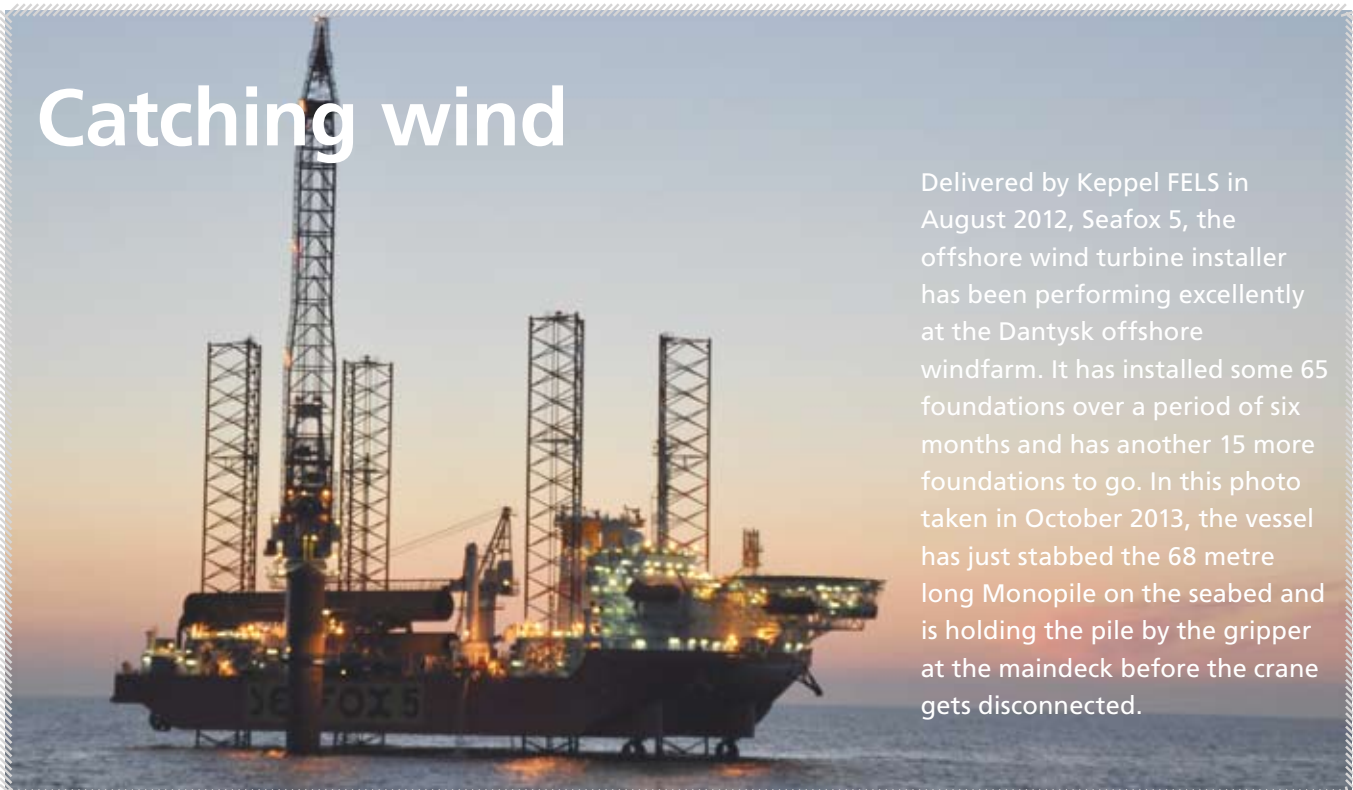
colleagues and customers in over 30 years of his career were also fondly spoken of.

Mr Lim remarked, "Keppel is successful today not only because we are a good engineering company. Our success is also largely attributed to the good relationships we have fostered with our clients."

To young Keppelites, Mr Lim offered advice on working with passion and honing effective communication skills.

Incepted in June 2013, Keppel O&M's Lunch & Learn series serves as a platform for open communication between Keppelites and senior management.

## Catching wind



Delivered by Keppel FELS in August 2012, Seafox 5, the offshore wind turbine installer has been performing excellently at the Dantysk offshore windfarm. It has installed some 65 foundations over a period of six months and has another 15 more foundations to go. In this photo taken in October 2013, the vessel has just stabbed the 68 metre long Monopile on the seabed and is holding the pile by the gripper at the maindeck before the crane gets disconnected.

# Ready!

Keppel Offshore & Marine (Keppel O&M) joined hands with the Singapore Police Force (SPF), Singapore Civil Defence Force (SCDF) and the Safety and Security Watch Group (SSWG) for a joint emergency exercise on 28 August 2013.

The initiative further strengthened inter-agency collaboration and support, as well as tested the group's emergency response plans.

The exercise comprised two components: a table top exercise involving personnel from Keppel O&M, Keppel FELS, Keppel Shipyard and Keppel Singmarine, followed by a live simulation at Keppel FELS' facility at 55 Gul Road.

The live exercise was conducted in the presence of Mr Tong Chong Heong, CEO of Keppel O&M, Mr Wong Kok Seng, MD of Keppel O&M, and Superintendent Pauline Yee, Deputy Commander Jurong Police Division, and SSWG Members.

Simulating a terrorist attack in one of Keppel O&M's yards, the live exercise drilled into areas such as fire response and vessel evacuation procedures.

Following the live exercise, personnel from SPF, SCDF and SSWG as well as from across the Keppel O&M Group joined a debriefing session where they shared on areas of improvement and lessons learnt.



(From left) Superintendent Pauline Yee, Deputy Commander Jurong Police Division, SSWG Members, Mr Phillip Mah, GM (Security) of Keppel O&M, and Mr Tong Chong Heong, CEO of Keppel O&M, at a joint emergency exercise at Keppel FELS' facility



Keppel O&M tested the robustness of its evacuation plans at the joint emergency exercise

Mr Phillip Mah, GM (Security) of Keppel O&M, shared, "Careful planning and discussions were carried out to ensure the scenario developed was realistic and would benefit Keppel O&M and the agencies participating."

Conducted annually since 2005, the joint emergency exercise forms a critical part of Keppel O&M's efforts to ensure security, safety and business continuity.

# Showcasing Keppel



Institutional investors saw first-hand the comprehensive capabilities of Keppel's BrasFELS yard in Angra dos Reis

From one continent to the next, Keppel Offshore & Marine (Keppel O&M) goes to great lengths to build good relations with investors, industry partners and government officials and help them to better understand Keppel's multi-faceted businesses. In late September, Keppel O&M hosted visits at the BrasFELS yard in Brazil as well as its yards in Singapore.

## **INDUCTING INVESTORS**

Investors from all over are making a bee-line to Brazil's growing hive of oil and gas activity, and no visit would be complete without

touring the country's most established shipyard, Keppel FELS Brasil's BrasFELS yard in Angra dos Reis.

On 23 September 2013, the management of Keppel FELS Brasil hosted a group of ten established European and US investors as part of the UBS Brazil Oils Field Trip.

After meeting the ground team and touring the yard, the investors had a better appreciation of the operating environment, prospects and challenges in Brazil.



"We have visited various yards in Brazil before and BrasFELS is one of the most impressive yards that we have seen. Having seen the well-oiled operations and workflow, our confidence in Keppel's execution capability in Brazil has been reinforced," said Lilyanna Yang, UBS's Latin American Oil and Utilities analyst.

### RECEIVING RUSSIANS

Renowned for its success as a Singaporean company with strong global operations, Keppel O&M shared its expertise with delegates from Russian oil company, GazpromNeft.

The visit by GazpromNeft to Keppel O&M on 9 and 16 October 2013 was part of a programme by the business school, INSEAD. A total of 87 participants learnt about how Keppel overcame the odds to become the leading offshore rig builder.

A panel of Keppel FELS management was on hand to answer their questions. With

delegates from a variety of departments in GazpromNeft, the questions touched on diverse topics including human resource and succession planning policies, technology advancements in rigs, best practices in managing overseas yards, and strong safety culture.

With part of their oil reserves residing in arctic areas such as the Barents Sea, the GazpromNeft delegates also took the opportunity to find out more about Keppel O&M's research capabilities in Arctic products, with particular interest in Keppel's Arctic rig designs.

GazpromNeft, which is the fourth largest oil producer in Russia, is exploring entering the Arctic environment and the visit to Keppel was a good opportunity for complementary businesses to discuss potential collaborations in the Arctic arena.

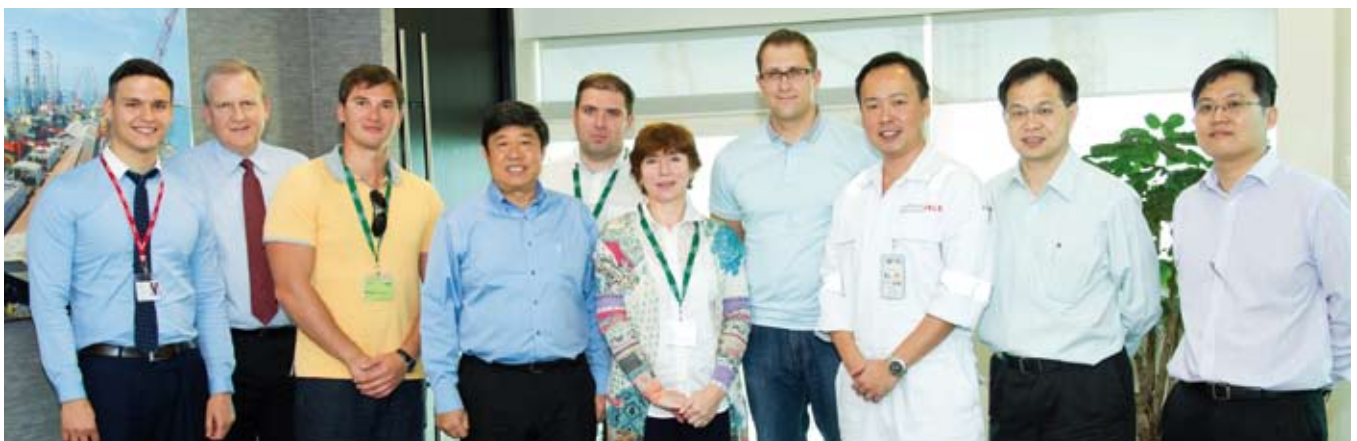
### BECKONING BRAZILIANS

Keppel O&M played host to a

team of Brazilian delegates from Fundação Do Meio Ambiente (FATMA), the state environmental agency of Santa Catarina, during their five-day visit in Singapore at the end of September 2013.

Based in Florianópolis, the capital city of the state of Santa Catarina, the FATMA delegates were in Singapore to study the local infrastructure, as well as understand the environmental-related challenges faced by the nation. They were interested in sustainability efforts taken by the Singapore government and local companies to overcome these challenges.

Accompanied by Mr Hoe Eng Hock, MD of Keppel Singmarine, the delegates visited the Keppel Seghers Tuas WTE Plant, Keppel Seghers Ulu Pandan NEWater Plant and the various Keppel yards.



Mr Chow Yew Yuen (fourth from left), COO and CEO-designate of Keppel O&M, hosted a group of GazpromNeft management who were interested in Keppel O&M's research capabilities in Arctic solutions

# Advancing innovation leadership

The Research Innovation and Enterprise Council (RIEC), an international panel which advises the Singapore Cabinet on strategic research and development (R&D) matters, and chaired by Singapore's Prime Minister, visited Keppel Offshore & Marine (Keppel O&M) on 25 October 2013, to have a better understanding of the company's capabilities in technology and innovation.

Mr Tong Chong Heong, CEO of Keppel O&M and other senior management hosted the Council's visit and had a fruitful discussion on a wide range of topics. These include the challenges faced by countries worldwide in managing

their energy needs and Keppel O&M's track record in leveraging R&D to offer viable offshore and marine solutions to the industry.

The delegation was also given a tour of Keppel FELS' Pioneer Yard and the automation system at the yard's Pipe Shop, which is part of Keppel FELS' productivity enhancement initiatives.

Set up in 2006, the high-level council comprises Singapore Cabinet ministers and illustrious local and foreign members. It provides overall strategic direction for national R&D and innovation policies for Singapore.



Members of the high-level Research Innovation and Enterprise Council touring the automated Pipe Shop at Keppel FELS' Pioneer Yard. With them is Mr Tong Chong Heong, CEO, Keppel O&M (centre in blue shirt) and Max Goh (extreme right in boiler suit), Deputy Shipyard Manager, Keppel FELS

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## Friendly ties with the Philippines

Keppel's ties with the Philippines go back almost 40 years. Today, Keppel Offshore & Marine (Keppel O&M), through Keppel Philippines Marine Inc, operates Keppel

Batangas Shipyard located in Bauan, Batangas, and Keppel Subic Shipyard, in Subic, Zambales.

As part of Keppel's ongoing efforts

to grow its friendly relations with the Philippines, Mr Michael Chia, MD (Marina and Technology), Keppel O&M, hosted dinner to the visiting Philippine Trade and Industry Secretary Mr Gregory L. Domingo on 28 October 2013.



Among those who attended the dinner hosted by Mr Michael Chia (fifth from right), MD (Marina and Technology), Keppel O&M for the visiting Philippine Trade Secretary Mr Gregory Domingo (sixth from left) are Mdm Kay Kuok Oon Kwong (3rd from left), Executive Chairman, Shangri-La Hotels and Resorts; Mr Ho Meng Kit (fifth from left), CEO, SBF; Philippine Ambassador Mrs Minda C. Cruz (third from right); Mr Toh Ko Lin (second from right), ED, Keppel Singmarine and President, KPMI; and Mr Chor How Jat (first from right), MD, Keppel Shipyard

Secretary Domingo was in Singapore to attend the Global Entropolis @ Singapore 2013 Ministerial Dialogue, and the Philippine Embassy in Singapore had arranged with the Singapore Business Federation (SBF) to organise this round table dinner for Secretary Domingo to engage with Singapore businesses.

# United to stay ahead



Displaying a strong tripartite relationship, Mr Heng Chee How (third from right), Senior Minister of State, Prime Minister's Office and Deputy Secretary-General, National Trades Union Congress, stands united with Keppel's senior management and Keppel Employees Union officials

The growing competition from other yards worldwide and the restriction on foreign labour in Singapore means that productivity improvement is at the top of the agenda of the Keppel Employees Union (KEU), to ensure Keppel Offshore & Marine (Keppel O&M) stays competitive. This was the message by KEU General Secretary Mr Mohd Yusof Mohd at their 45th Annual Delegates' Conference held on 25 September 2013 at the Furama City Centre, Singapore.

He spoke with pride on how KEU played key roles in the company's transformation of the local offshore and marine industry and rose to become a world leader in its field. Acknowledging the new challenges in today's environment, Mr Mohd emphasised the need to

strengthen the Singaporean core workforce.

Concurring, Mr Michael Chia, MD (Marine and Technology) of Keppel O&M, who represented the Keppel management, reiterated the need to step up on productivity improvement, innovation and safety excellence.

"To extract more value contribution from each project, we are stepping up our drive on productivity improvement and safety excellence. This is to ensure that our projects are executed safely, efficiently, on-time and within budget," said Mr Chia.

He added, "To improve productivity, we have to constantly review our production processes

and identify areas where cost savings can be realised and qualities are assured. At the same time, we must be innovative to make good use of technology to do our jobs faster, better and with reduced man-hours."

Guest of Honour Mr Heng Chee How, Senior Minister of State, Prime Minister's Office and Deputy Secretary-General, National Trades Union Congress (NTUC), lauded the fortitude of Keppel's pioneers in taking the company to where it is today. He urged individuals to replicate that same attitude and for Keppel management and KEU to continue the strong partnership with NTUC, to keep Singapore and Keppel ahead.

# Strengthening mutual support



Keppel FELS' senior management led by Mr Tong Chong Heong, CEO, Keppel O&M (front row, third from left) and Mr Chow Yew Yuen, COO and CEO-designate, Keppel O&M (front row, fourth from left) celebrating HSE excellence and long term partnerships with award winners at the Keppel FELS Subcontractor's Night on 24 October 2013



Senior management of Keppel O&M mingling with Keppel FELS' subcontractors over sumptuous food and drinks

Partnerships with subcontractors forged over the years forms the cornerstone of Keppel Offshore & Marine's (Keppel O&M) reputed execution excellence. To continue to strengthen ties with its subcontractors, Keppel FELS held its annual Subcontractors' Night on 24 October 2013. For this eighth edition, 157 attendees representing 131 subcontractors

were invited to fly high together at the aviation-themed event.

In his opening remarks, Mr Tong Chong Heong, CEO of Keppel O&M said, "We hope that with each passing year, we can work together a lot closer, more cooperatively, productively, efficiently, safely, and it is my wish that this will continue for many more years to come."

Mr Tong also highlighted the strong competition faced by Singapore yards, and the labour shortage situation in Singapore. He encouraged the subcontractors to contribute ideas to improve innovation and productivity, and pledged support from Keppel O&M on such win-win initiatives. He also reassured everyone that COO and CEO-designate Mr Chow

Yew Yuen, who succeeds him next year, will carry on and improve upon "whatever has been working successfully over the years."

Following Mr Tong's speech, Mr Chow shared his hope that a strong group of subcontractors will continue to be Keppel O&M's

partners in venturing into new territories as it continues to grow overseas.

## Partners for growth

Recognised for being Keppel FELS' valued partners, seven subcontractors were presented the "10-Year Partnership Award" and two recipients received the "30-Year Partnership Award". For its excellence in Health, Safety and Environment (HSE), Tech-Growth Engineering Pte Ltd was conferred the 'Best in HSE' award this year.

Tech-Growth Engineering specialises in the fabrication, installation and commissioning of piping systems for vessels, oil rigs, FPSO and FSO conversions, newbuildings, repairs and other related projects.

"We have been growing together with Keppel for many years. In the beginning, we started with 50 workers. Now, we have 150 workers based here. As the partnership has grown, we have not only been able to increase the number of our workers but also the quality of the workforce. And this is good for the industry as a whole," said Mr Wong Yee Seong, Managing Director, Tech-Growth Engineering Pte Ltd.

Tech-Growth Engineering started work with Keppel O&M by doing ship repairs at Keppel Shipyard through its sister company, Pan-Growth Engineering Pte Ltd

in 1993. Subsequently, Keppel O&M recommended extending its services to Keppel FELS. It was then in 2005 that Tech-Growth Engineering was formed and its partnership with Keppel FELS began.

"Keppel's systems and processes are very established and it has a strong emphasis on safety. As partners, we interact a lot. When we have any difficulties or problems we always engage each other. When we were working with Keppel Shipyard, we actively collaborated with Keppel O&M's management to address operational concerns during the monthly Contractors' HSE Watch Group meeting. Many improvements made to the yard's processes and methods were a result of our discussions," added Mr Wong, who was the Chairman of the Contractors' HSE Watch Group for a number of years before retiring from the post this year.

*OffshoreMarine* will highlight other award-winning subcontractors in subsequent issues.



Mr Wong Yee Seong (left), Managing Director, Tech-Growth Engineering, receiving the 'Best in HSE' award from Mr Tong Chong Heong (right), CEO of Keppel O&M

# Uncovering history

2 October 2013 was not just another day at work at Keppel Shipyard for William Lim, Project Manager, Danny Wang, Security Officer, and James Oh, Duty Operations Officer. War relics were found onboard the dredging vessel Queen of the Netherlands, which had berthed at Temasek drydock at the Tuas Yard for repairs.

That morning, Captain Ongman Bart Jacobus and Dredge Master Plug Roland were inspecting the hopper area when they noticed some unusual objects. To their surprise, the objects were actually old projectiles. Both men immediately alerted William, who subsequently informed Danny and James. The Police was called in and the area was quickly cordoned off.

Prior to berthing at Keppel's dock, the vessel was doing dredging work in the Indian Ocean. The projectiles would likely have been dredged up from the Indian waters and left behind in the hopper area which went undetected while the vessel made its way to Singapore.

Upon the arrival of Police and after assessment, it was decided that the Chemical, Biological, Radiological and Explosive (CBRE) Defence Group of the Singapore Armed Forces (SAF) should be activated to help with the safe removal of the projectiles from the vessel. Eventually, six projectiles were found and with the Police as their escort, the CBRE team transported the projectiles from the yard to SAF's Pasir Laba Camp for storage and detonation.

Two more projectiles were subsequently found on the vessel two days later on 4 October when the vessel crew was washing mud off from the hopper. Once again, the Police and the CBRE team were called in.

However, it was not as smooth sailing as the removal of the earlier batch of projectiles. One projectile was deeply lodged and the team had to work through the night to retrieve it. As they were working, they found more projectiles. The Singapore Civil Defence Force's (SCDF) assistance was also sought

on the stuck projectile and a total of five projectiles were found.

Strong team work enabled the crew and yard personnel to finally retrieve the stuck projectile at 9.50am on 5 October 2013. This second batch of five projectiles was similarly transported to the Pasir Laba Camp and safely detonated.

A final batch of two more items were subsequently found, and all in, a total of 13 pieces of war relics were retrieved from the Queen of the Netherlands. Mr Phillip Mah, GM (Security), Keppel O&M commented, "This interesting episode shows that Keppel O&M has the full and committed support of the various enforcement and defence agencies in Singapore. The excellent co-ordination helps to send a strong assurance to our customers and other stakeholders that their rigs and vessels at our yards are secure and well protected."

Following this exciting adventure, the vessel completed its repair and left Keppel Shipyard Tuas on 15 October 2013.



Five of the thirteen war relics found onboard the dredging vessel Queen of the Netherlands which was berthed at the Temasek drydock at Keppel Shipyard Tuas



(From L-R) Senior Security Commander, Joannes Chua, Chief Security Officer, Ng Guat Heng and two officers from the Singapore Police Force conducting investigations on two of the thirteen war relics

# Viva Brazil



The Brazilian community in Singapore enjoyed Keppel-sponsored Brazilian cultural events such as PianoBotanica featuring Brazilian Maestro Caio Pagano and Brazilian Cultural Week



Among the audience at PianoBotanica are H.E. Luis Fernando Serra, Ambassador of Brazil to Singapore and wife Rosana, and Mr Choo Chiau Beng, CEO of Keppel Corporation and Chairman of Keppel O&M with wife Eileen

In its commitment to promote the arts, Keppel Group recently sponsored PianoBotanica and the Brazilian Cultural Week to share Brazilian music and culture with Singapore.

On 8 September 2013, maestro Brazilian pianist Caio Pagano, professor of Piano at Arizona State University, treated a 2000-strong audience to a piano recital of

11 of his works at the Botanic Gardens. Recognised as the master of classical piano, Caio Pagano has treated music aficionados from across four continents in 900 performances.

Meanwhile, Brazilian Cultural Week, organised by the Association of Capoeira Argola de Ouro, was held from 14 to 16 September 2013. The three-day

event comprised a series of dance, music and Capoeira workshops culminating with a night reception held at Hard Rock Café in HPL House.

Keppel operates two yards in Brazil – BrasFELS in Angra dos Reis, Rio de Janeiro, and Keppel Singmarine Brasil in Navegantes, Santa Catarina.

# Celebrating Brazil's Independence Day



Commemorating Brazil's Independence Day at BrasFELS's Observance ceremony are CEO and President of Keppel FELS Brasil, Mr Kwok Kai Choong (third from left) and Angra's Mayor, Ms Conceica Rabba (fourth from left), along with other members of BrasFELS management

Keppel's yard in Brazil's Angra dos Reis, BrasFELS, celebrated the country's 110th Independence Day by holding an observance ceremony on 6 September 2013. Angra Mayor Ms Conceicao Rabba, Jacuecanga Sub Mayor Mr Jose Carlos Botelho and other key representatives from the Brazilian Navy, as well as various customers such as Petrobras, MODEC MTOPS, Noble Drilling and FloaTEC were present at the ceremony.

Mr Kwok Kai Choong, CEO and President of Keppel FELS Brasil, paid tribute to the group of pioneering employees present at the ceremony and urged everyone to unite as a team to achieve the goal of completing all jobs safely without lost-time incidents, within

schedule and budget, and with quality expected of Keppel.

Mr Kwok also shared about the various new investments made to upgrade the yard's facilities. A new 2,000 mt gantry crane is now being assembled and is on track to be operational by January 2014. This would allow larger and heavier structures to be built on the ground before erection on board thus increasing cost effectiveness. Several moveable sheds with their own remote-controlled gantry cranes are also being assembled and erected. These moveable sheds would provide employees working at the assembly areas with protection from the weather, thus improving productivity.

A special highlight this year was the performance by the school band and choir from Conde Pereira Carneiro, a public school based in Angra town. Performing the Brazilian National Anthem during the flag raising ceremony, this was the first time that the school band and choir has showcased their talents outside of school grounds.

The contribution of BrasFELS employees to the notable achievement of achieving 1 million safe manhours worked without lost-time incidents for the FPSO Mangaratiba project was also recognised at the ceremony. Mr Renato Amaral, Mr Joel Adriano da Conceicao and Mr Benedito Dimas de Souza were given awards for their exemplary work.

The Observance Ceremony concluded with a reception followed by an eye-opening guided tour of the yard for students of Conde Pereira Carneiro.



# Providing relief for flood victims

Volunteers from Keppel Subic Shipyard worked together with representatives from the local municipal government to bring food and other relief goods to the communities in Cawag, Manggahan, San Isidro and Ilwas. These are *barangays* (Filipino term for the smallest administrative division) that were severely affected by the southwest monsoon that hit the area. Backhoes and dump trucks from the shipyard were also mobilised to clear the mud and other debris left by waist-deep flooding in the neighbourhood.

"We are so thankful for Keppel

Subic's support to the municipal government's effort to assist its constituents during these difficult times by providing these much needed humanitarian assistance to the affected families," shared Hon Ariel Apostol and Hon Rowen Sawey, Barangay Captains of Ilwas and San Isidro, respectively.

"This is Keppel Subic's way of giving back to the community by lending a helping hand to our neighbours in need," said Mr Leong Kok Weng, President of Keppel Subic Shipyard, as he took part in the relief operations.

27 Keppel employees staying



at Unity Hall yard dormitory volunteered in the night rescue and retrieval operations in Barangay Wawandue where a landslide destroyed several houses.

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## Sharing moments



Keppel Batangas Shipyard volunteers share a light moment with the elderly residents

Volunteers from Keppel Batangas Shipyard visited Sagip Buhay Tahanan Foundation (SBTF) to bring cheer and support to its 15 residents. Tucked in a quiet neighbourhood near the shipyard,

the name for this home for the aged and the abandoned elderly literally means "Rescue Life Home Foundation."

"The Keppel volunteers bring much needed joy and laughter to our home," said Mrs Auring M Dolor, SBTF Administrator.

While the shipyard doctor checked on the medical conditions of the residents and provided free medicine donated by a local community drugstore, Keppel volunteers serenaded the elderly and cut the tall grass in the compound.

62-year old Gloria Evangelista has

been a resident of SBTF for over a year. She mused, "I now have a bigger garden, thanks to the volunteers who have cleared the lot where I plant my vegetables."

Mr Poh Leong Kok, President of Keppel Batangas Shipyard, commented, "Aside from the projects that we have for the youth, we must not forget the people during their sunset years. We do hope that by sharing these moments, we have provided sunshine to the elderly at SBTF."

# Surprise playground makeover



Mr Harold Linssen, Managing Director, Keppel Verolme, handed a symbolic cheque of EUR 15,000 to the school principal of De Regenboog, making the refurbishment of the playground possible

The principal of the primary school, PCBS De Regenboog, in Rozenburg, the Netherlands, had a very nice surprise for her pupils on 12 July 2013. The school playground, which used to be old and very run-down, had been refurbished with new playground

equipment and bicycle parking spaces. This was made possible by a donation from the school's sponsor Keppel Verolme, and the school staff who put in hours of hard work to refurbish the playground.

The schoolyard was abuzz with

activities at the official opening ceremony which was a colourful affair with 300 children donning their Keppel Verolme caps. Keppel Verolme Managing Director, Mr Harold Linssen, handed a symbolic cheque of EUR 15,000 to the school principal at the ceremony.

11-year-old Luna van der Heijden, a student at PCBS De Regenboog and daughter of an employee of Keppel Verolme said, "This is much nicer and more fun than our old schoolyard. My favourite spot is the football pitch. Thank you Keppel Verolme for giving us this new playground."

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## Inspired by Fandi

Forty-three Keppel O&M Technical Associates (TAs) and Assistant Technical Associates (ATAs) had the chance to meet Singapore's football legend, Fandi Ahmad, on 16 October 2013 and learn some lessons from his sharing on his life, football career and family.

The TAs and ATAs not only picked up football tips but also life skills from Fandi. The motivational talk was organised as part of Keppel Offshore & Marine's (O&M) bid to develop employees holistically.

The TAs and ATAs also had the opportunity to receive football training from the former S. League

Coach of the Year through a coaching clinic conducted at the Institute of Technical Education (ITE) College Central's sprawling new grounds in Ang Mo Kio.

The event was part of the Engagement Activity Day for Keppel O&M's TA and ATA Scheme. These are ITE traineeship schemes which adopt a 'learn-as-you-earn' approach. Trainees are employed by the company with the same benefits as full-time staff as they undergo a structured traineeship programme which leads to NITEC or Higher NITEC certification awarded by ITE. In addition, their education is also sponsored by Keppel O&M.

Keppel O&M Training Centre is the first ITE Approved Training Centre in Singapore to conduct the Higher NITEC in Marine Offshore Technology. It received its first batch of trainees in May 2013.



Singapore's football legend Fandi Ahmad (right) shared his life stories and showed Keppel O&M apprentices some football tricks and tips



# Another Mexican order

On the back of Keppel Offshore & Marine's (Keppel O&M) Memorandum of Understanding with PEMEX to develop a yard in Mexico (see pages 4 and 5), Keppel AmFELS, Keppel's yard along the US Gulf of Mexico has won another jackup rig order from a repeat Mexican customer.

Announced on 10 October 2013, the contract is with Central Panuco S.A. De C.V., a subsidiary of Mexico's Perforadora Central S.V. De C.V. (Perforadora Central) to build a KFELS B Class jackup rig.

Scheduled for delivery in 4Q 2015, the jackup rig is intended for operations in offshore Mexico. Built to Keppel's market-established KFELS B Class design, the rig will be able to operate in water depths of up to 400 feet, drill to depths of 30,000 feet with accommodation for 126 persons.

With this latest contract, a total of 13 KFELS B Class jackup rigs have been ordered for the Mexican market since 2010.

Mr Chow Yew Yuen, Chairman of Keppel AmFELS, COO and CEO-designate of Keppel O&M, said, "This is the fifth jackup that Keppel AmFELS is building for Perforadora Central since 2002. We have steadily built up a strong partnership with them and are pleased that our valued customer is once again entrusting us with a newbuild order for the Mexican market.

"We are very honoured to be building another of our

proprietary KFELS B Class jackup rig for them, and we look forward to delivering it in keeping with Keppel's hallmark of safe, on-time and within budget execution."

To date, Keppel AmFELS which is located in Brownsville, Texas, has completed Tonalá, an ultra premium KFELS B Class jackup rig for Perforadora Central in 2004, followed by Tuxpan, a LeTourneau S116E rig in 2010. The Papaloapan jackup, which was ordered by Perforadora Central in March 2011, was successfully delivered in April this year. Currently under construction is the Coatzacoalcos jackup which is on track for completion in 1Q 2014.

A spokesperson from Perforadora Central said, "There is strong demand from PEMEX for high quality rigs and the KFELS B Class is a top class jackup with a proven track record operating in Mexico. Our current KFELS B Class jackup in operation, the Tonalá, has been performing outstandingly

for PEMEX and we are confident that this next jackup will be just as successful. It is an important addition to our portfolio of premium rigs as we expand our presence to be a leading provider of drilling solutions in Mexico.

"Earlier this year, Keppel AmFELS delivered the Papaloapan jackup to our highest satisfaction and we are certain that this new order as well as the Coatzacoalcos jackup currently under construction will also exceed our expectations. Having worked with Keppel AmFELS for more than 10 years, they have demonstrated their expertise and commitment to always provide the highest standards of service, quality and safety on every project."

Keppel O&M is the leading rig provider to the Mexican market, with a total of 20 projects delivered or on order for Mexico including this new order. Of the 20 projects, 15 are of Keppel's proprietary KFELS B Class design.



Keppel AmFELS delivered its third jackup rig, Papaloapan (shown above), to Mexico's Perforadora Central in April this year. Its latest order is the fifth jackup for the Mexican customer