

# OFFSHOREMARINE

A newsletter of Keppel Offshore & Marine

January – February 2016

MICA (P) 112/03/2016

## Enhancing LNG solutions

Keppel partners Shell to secure LNG bunkering license in Singapore



# CONTENTS

Keppel and Shell to jointly supply LNG bunker	3
Braving the headwinds	4-7
N-KOM delivers first liftboat in Qatar	8
Fifth delivery to Floatel on track	10
Executing to perfection	11-12
Warm reception in Brazil	14-15
Harnessing strengths	22-24
Forging closer partnerships	28-29
Passing the baton	32
In memory of a Keppel stalwart	33
First delivery in the New Year	40

## CENTRESPREAD

Gathering of minds	20-21
--------------------	-------

## TECHNOLOGY & INNOVATION

Innovative ice-class designs	27
------------------------------	----



At a media and analyst briefing on the Group's performance for FY 2015, Mr Loh Chin Hua, Chairman of Keppel Offshore & Marine (Keppel O&M) and CEO of Keppel Corporation emphasised that Keppel O&M is able to serve a wide spectrum of customers in both drilling and non-drilling markets, which includes providing Liquefied Natural Gas (LNG) solutions, such as the Azimuth Stern Drive tug (pictured), which can run on LNG and diesel fuel.

## EDITORIAL BOARD

### EDITORIAL ADVISOR

Chow Yew Yuen

### EDITOR

Lai Ching Chuan

### ASSISTANT EDITOR

Jayne Yeo

### COMMITTEE MEMBERS

Michael Chia, Wong Kok Seng, Chor How Jat, Abu Bakar Mohd Nor, Hoe Eng Hock, Dr Foo Kok Seng, Aziz Merchant, Hoo Yao Lin, Hayley Teo, Priscilla Chong, Alan I. Claveria, Betty Mok, Gabriela Soares, Lucienne de Jong, Li Gang, Linda Mercado, Fairuz Aledroos, Roy Tan, Say Huan Yuan, Lee Wan Jun

OffshoreMarine is a bi-monthly publication of Keppel Offshore & Marine Ltd  
50 Gul Road, Singapore 629351

Tel: +65 6863 7200

Fax: +65 6261 7719 / 6265 1927

Company registration no. 199900642R

Keppel Offshore & Marine is a subsidiary of Keppel Corporation

# Keppel and Shell to jointly supply LNG bunker

First delivery of LNG bunker expected to commence in 2017, in line with plans to develop Singapore as a leading LNG hub.



Keppel O&M will leverage its experience and expertise in providing LNG solutions, among which are conversion solutions for Floating Liquefaction (FLNG) vessels, to provide LNG bunkering services in Singapore with BG Group. The LNG carrier, HILLI (pictured), is currently undergoing conversion into an FLNG vessel in Keppel Shipyard

Keppel Offshore & Marine (Keppel O&M), through its wholly-owned subsidiary KS Investments Pte Ltd (KSI), and BG Group, now part of Royal Dutch Shell, have been selected to supply Liquefied Natural Gas (LNG) bunker to vessels in the Port of Singapore.

The joint bid submitted by Keppel O&M and BG Group, for the LNG bunker supplier licence is one of the two top bids selected by the Maritime and Port Authority of Singapore (MPA). The awarding of the licence is in line with the Port of Singapore's plans to launch the LNG Bunkering Pilot Programme in 2017.

With the granting of the licence, Keppel O&M and BG Group will work on forming a 50-50 joint venture to deliver an end-to-end bunkering solution using

LNG sourced from BG Group's diversified LNG portfolio and leveraging Keppel O&M's expertise in LNG vessel servicing.

Mr Steve Hill, Executive Vice President, Global Energy Marketing and Shipping, BG Group, said, "Singapore is one of the world's most important strategic ports and we are excited about the prospect of supplying LNG as a fuel for ships in this key market, with first delivery expected in 2017. LNG produces considerably lower emissions than conventional marine fuel and can significantly reduce a vessel's environmental impact. We look forward to working with Keppel O&M on the safe and reliable supply of this cleaner fuel source and the ongoing development of Singapore as a leading hub for LNG in Asia."

Mr Chow Yew Yuen, CEO, Keppel O&M, said, "The move into LNG bunkering is in line with Keppel's strategy to provide solutions for the global LNG market, and we are happy to partner BG Group and Shell in this exciting new venture. As the exclusive gas aggregator for Singapore, BG Group has the experience of importing LNG into Singapore where they already have a ready supply on Jurong Island.

"Together with Keppel's years of experience and expertise in

servicing vessels including gas carriers, we will be able to provide strong support to MPA in its goal to develop Singapore into a key LNG bunkering hub in Asia. As the shipping industry's demand for green solutions continues to rise, we will also be able to help meet the needs for sustainable shipping with our growing LNG solutions, such as tug designs with dual-fuel diesel LNG engines and the retrofitting of vessel engines to run on LNG."

Keppel O&M's experience in providing LNG solutions encompasses not only repair services for gas carriers, but also complex offshore conversions. Keppel O&M successfully completed the world's first Floating Storage and Regasification Unit (FSRU) in 2008, which was followed by two more similar units, and was the first shipyard to undertake the conversion of a Floating Liquefaction vessel in 2014.

To focus further efforts on solutions for the LNG market, Keppel O&M set up a new design and technology arm, Gas Technology Development, in 2015. Through its other design and technology arm, Marine Technology Development, Keppel O&M has developed a range of designs for LNG vessels including barges, carriers, and dual-fuel tugs that can run on diesel and LNG.



# Braving the headwinds

Despite continued headwinds in 2015, Keppel Corporation continued to perform respectably as its multi-business strategy shines through. Mr Loh Chin Hua, Chairman of Keppel Offshore & Marine (Keppel O&M) and CEO of Keppel Corporation, shared the Group's performance and highlights at a media and analyst briefing on 21 January 2016. *OffshoreMarine* reproduces highlights of his speech.

## CHALLENGING ENVIRONMENT

The macro environment has taken a turn for the worse. Oil price plunging below US\$30 a barrel, its lowest in more than a decade, coupled with the Chinese stock market meltdown this month have hurled the global economy onto a turbulent trajectory.

Recovery in major economies has been uneven. The US Federal Reserve's move to tighten monetary policy, even as others are loosening theirs, seemed to have come at a precarious time.

Meanwhile, anxieties over slower growth in China and its stock market volatility have prompted investors to retreat from the country. While the Chinese economy faces a number of challenges, we remain confident about opportunities in China. Even at a lower GDP growth rate of 6.9%, China's absolute growth is still very significant based on a larger US\$10 trillion economy, compared with five or ten years ago.

In Brazil, confidence has been shaken by a series of crises over the past year as political and economic woes and the Lava Jato scandal



Mr Loh Chin Hua (left), Chairman of Keppel O&M and CEO of Keppel Corporation and Mr Chow Yew Yuen (right), CEO of Keppel O&M were part of the panel sharing the Group's performance for FY 2015 held at the Keppel Leadership Institute

continue to spiral. Recent media reports of Sete Brasil (Sete) mulling over bankruptcy protection have incited further market selldowns.

Keppel, being one of the earliest Singapore companies to enter the Brazilian market, has not been spared from this storm. We had taken steps to mitigate our exposure by slowing the construction of Sete's rigs after payments from our customer ceased over a year ago.

On average, the construction of the first four semis has progressed by less than 4% each quarter since the start of 2015. It is worth noting

that of these six projects, only the first two semis, which are also in the most advanced stages, have been sent to our yard in Brazil. Meanwhile, minimal work had been done on the last two semis.

Prior to the disruption of milestone payments, we had already received about US\$1.3 billion from Sete. As we await further clarity on the situation, we have stopped construction of Sete's projects by the end of 2015. We have also made a provision of about \$230 million for these projects in 4Q 2015, after assessing our construction progress, payment status and amounts due



Keppel Offshore & Marine delivered seven jackup rigs to clients in 2015, including UMW Naga 8 (pictured)

to our vendors amongst other areas.

We understand that Sete's board will soon be meeting to discuss future plans for the company. It remains unclear when a final decision will be taken. Until we hear from Sete officially and the situation and options available to us become clearer, the above

measures, in our opinion, are sound and adequate.

#### **BUSINESS UPDATES**

The continuing mismatch between global glut and sluggish demand is expected to keep oil prices subdued in the near future. Industry reports suggest that global exploration and production spending could decline by 15%

or more in 2016 should oil prices remain at current levels.

However, oil companies are kicking the can down the road and at some point, they would have to spend to replenish reserves. The low oil prices we see today are not sustainable in the long run. How soon the new equilibrium will be reached remains to be seen. We have to plan for a longer winter. We had kick started 2015 with expected deliveries of 15 drilling jackups; eight of these have since been pushed into 2016. These projects include five rigs for Grupo R, and one each for Parden Holdings, FTS Derricks and Perforadora Central. The delays are not extensive, the contracts are still valid, and we are working towards delivering several of them in the early half of this year.

In addition to handing over seven quality jackups in 2015, Keppel O&M also delivered several non-drilling solutions to our customers throughout the year. These included a Depletion Compression Platform to Shell Philippines Exploration, an accommodation semi to Floatel International and the FPSO Turitella to SBM Offshore, among other specialised vessels and equipment.

Prudence in pursuing quality projects, underpinned by strong execution and productivity, enabled us to achieve an underlying operating margin of 17.1% for 4Q 2015 and 13.4% for FY 2015, before making the provision on the Sete projects.

*Continues on page 6...*

Continued from page 5...

Of our current \$9.0 billion net orderbook, non-drilling solutions make up more than a third, while jackup rig contracts under the deferred payment terms constitute less than 16.7% or under \$1.5 billion.

In 2016, our yards will be delivering some 25 newbuild and conversion projects.

Our orderbook comprises contracts backed by quality customers, as well as sound pricing and terms that will allow us to make respectable, risk-adjusted returns. While we do not expect cancellation risks to be great, we are vigilant and mindful to deliver projects to our customers' satisfaction.

I am pleased to share that we delivered our first jackup of the year to Gulf Drilling International (GDI) on 21 Jan 2015. We also delivered a liftboat to Nakilat Offshore & Marine in Qatar earlier this month, which will serve GDI as well.

We closed 2015 clinching \$132 million worth of contracts from repeat customers for conversion projects and offshore support vessels, bringing our total orders secured in 2015 to about \$1.8 billion.

With our extensive suite of offshore and marine solutions and continuous investment in Research & Development, Keppel O&M is able to serve a wide spectrum of customers in both drilling and non-drilling markets, who continue to require various solutions, may it be for oil production, subsea construction, or offshore liquefaction.

Our yards will remain busy for the rest of this year, with the execution of both existing and new projects from our backlog. In addition to a growing base of non-drilling solutions, we are also taking on opportunistic work such as modifications, upgrading and repairs that will occupy us as Keppel O&M hunkers down.

The storm hitting the offshore and marine business is not one which we are unfamiliar. Keppel had braved through many cycles, emerging stronger and more resilient each time.

Bracing ourselves for a possibly long winter, we need to ensure that our overheads are well under control and that we are ready if the market conditions get tougher. We are preparing ourselves to meet the near term challenges by rightsizing our operations and resources.

We have considerable flexibility in our workforce deployment with our contract workers and our network of yards in Singapore and overseas. Optimising our operations and allowing a natural attrition of the workforce, direct staff strength in our Singapore and overseas yards has come down by about 17% or about 6,000 headcount since January 2015, while our Singapore subcontract workforce has been brought down by 24% or about 7,900 headcount over the same period.

We have also redeployed manpower to our operations overseas, as well as from offshore to marine operations, for example, Keppel Shipyard, where increased resources are needed for the steady stream of repair and conversion projects.

Even as we work at reducing costs and optimising current operations, we are still investing prudently in R&D as well as improving on our productivity and core competencies. During the



Keppel Offshore & Marine delivered several non-drilling solutions to its customers throughout the year, including the FPSO Turritella (pictured) to SBM Offshore



year, we inked an agreement to acquire the LETOURNEAU™ rig designs and aftermarket business to broaden our suite of jackup rig design solutions and better support our customers through aftermarket and after sales services. We have also expanded our natural gas solutions suite with technology for both onshore and offshore liquefaction and LNG transportation.

The present downturn presents the opportunity to build a long-term sustainable, competitive position for Keppel O&M as we carefully position ourselves for the upturn.

Notwithstanding the vast challenges, Keppel O&M is still doing well, and has contributed \$481 million or one third of the Group's income for the year. From an ROE perspective, Keppel O&M's performance has been solid owing to its rigour in selecting contracts, strong project execution and discipline in not overinvesting in capacity, considering the cyclical nature of this business.

#### **RESPONDING TO CHALLENGES**

*OffshoreMarine* shares highlights of the 4Q & FY 2015 results Question and Answer session, where senior management addressed issues and concerns of the financial community.

**Q: If we were to assume a worst case basis that Sete Brasil goes into bankruptcy, what kind of write-downs or impairments should investors expect?**

**LCH:** Sete Brasil is still our

customer. Of course, they are going through a difficult period at this point in time. In our assessment, we've taken into account different scenarios. This provision of \$230 million is what we believe to be adequate and the right thing to do at this point.

**Q: With payout ratios now at 40%, can you give us some insights on what is a sustainable dividend payout ratio going forward?**

**LCH:** When things are good, we want to share with our stakeholders. We have always said that we would pay around 40% to 50%, but key to that is making sure that dividends are sustainable. This is a level we believe to be sustainable, while keeping our balance sheet strong.

**Q: You've highlighted some of the measures that you have taken to right-size the operations in a challenging environment. What are some further steps that you can potentially take if the market were to continue deteriorating?**

**LCH:** Decisive steps have been taken in 2015 to right-size. We are watching the situation closely and have developed plans and trigger-points, such that if the workflow continues to drop, we are ready with plans in place.

**Q: Could you please explain what you mean by "natural attrition rate"?**

**CYY:** We have a labour structure in Singapore where we have a lot of NTS workers, and we also have people who are retiring. The NTS workers that are here on contracts and work permits - we have engaged some of them for

a long time, because the longer they work with us, the longer they understand our safety culture and emphasis on productivity. Some of these workers actually want to go back home after working with us for six, eight or ten years. So when they want to go back - these are the people that we do not replace. That is what we mean by natural attrition.

**Q: At the 3Q results, you mentioned that you were expecting to deliver six jackups in 4Q, but it seems like only one was eventually delivered. Can you give some colour on the discussion with your customers on deferrals and the scope for further deferment?**

**CYY:** Technically, all of the four rigs have been accepted by our customers. There is no performance or execution risk on our part. We have been working very closely with our customers and sometimes it is important for us to let our customers have some time to conclude their contracts. This is precisely what we are doing.

**LCH** – Mr Loh Chin Hua, Chairman of Keppel Offshore and Marine and CEO of Keppel Corporation

**CYY** – Mr Chow Yew Yuen, CEO of Keppel Offshore and Marine

# N-KOM delivers first liftboat in Qatar



Al Safliya, the first liftboat to be wholly constructed in Qatar, is built to the ORCA 2500 design developed by Keppel O&M's design arm, Bennett Offshore

Nakilat-Keppel Offshore & Marine (N-KOM), the joint venture shipyard between Qatar's Nakilat and Keppel Offshore & Marine (Keppel O&M), successfully delivered on 12 January 2016 its first liftboat unit, Al Safliya, to Qatari rig operator Gulf Drilling International (GDI), subsidiary of Gulf International Services, in a safe and timely manner without any lost-time incidents.

Built to the ORCA 2500 design developed by Keppel O&M's design arm, Bennett Offshore, Al Safliya is the first liftboat to be wholly constructed in Qatar at the Erhama Bin Jaber Al Jalahma shipyard. The self-propelled and elevating unit is customised for operations in the Middle East and North Africa

regions in water depths of up to 65 metres.

The ORCA 2500 class liftboat is equipped with four tubular legs, a unique 200-tonne leg encircling crane and a 50-tonne pedestal crane, a large open deck space of around 800 sm, a helideck, and accommodation capacity for 130 persons.

It can undertake a wide range of services such as well servicing, commissioning, maintenance and decommissioning of offshore platforms. The liftboat also allows for a specially designed gangway bridge to be used for emergency and other safety purposes.

Bennett Offshore has also

developed other liftboat designs, such as the ORCA 1500 and ORCA 3500, with varying operational and accommodation capacities to suit its clients' requirements.

Liftboats have increasingly been shown to be a more efficient alternative to traditional non-self-propelled and self-elevating units. Its ability to mobilise without the assistance of support vessels makes it versatile and cost-effective.

By customising liftboats with different tonnage cranes on deck, they can undertake the maintenance of most shallow water oil and gas fields and wind farms, as well as various workover drilling operations and well intervention applications.



# Industry kudos

Keppel Offshore & Marine (Keppel O&M) was conferred the 2015 APAC Company of the Year Award (Offshore & Marine Services) at the Asia-Pacific Oil & Gas Awards Dinner on 27 January 2016.



Mr Chow Yew Yuen (left), CEO of Keppel O&M, received the 2015 APAC Offshore & Marine Company of the Year Award from Mr Paul Young (right), MD and Head of Natural Resources at Aon

Organised by the Oil and Gas Council, the annual event is one of the most prestigious oil and gas industry events in Asia, and organised as part of the 2016 Asia-Pacific Oil & Gas Assembly.

Mr Chow Yew Yuen, CEO of Keppel O&M, said, "We are very honoured to receive this award. I would like to thank the organisers and judges for recognising our performance over the past year. Despite a challenging 2015, we still managed to deliver seven jackups and seven non-drilling vessels. It is only with the support and understanding of our valued customers that we can all emerge stronger."

The recipients were selected by a committee comprising high-level representatives of banking, consulting, legal and oilfield services, as well as top oil and gas executives and investors.

---

# Reliable support

Longtime customer Transocean called on Keppel FELS Brasil's BrasFELS shipyard for support services for the drillship rig Deepwater Navigator in December 2015.

The drillship was at Bananal Bay over a period of 12 days from 30 December to 10 January 2016, during which BrasFELS extended safe and efficient logistics support for materials and equipment to Deepwater Navigator.



BrasFELS provided safe and efficient offshore support for Transocean's drillship rig Deepwater Navigator (pictured)

# Fifth delivery to Floatel on track



Keppel Offshore & Marine, led by CEO, Mr Chow Yew Yuen (eighth from left) celebrated the naming of its fifth accommodation semisubmersible to Floatel with Mr Michitaka Ohta (sixth from right), Director Project Coordination, INPEX and Mrs Etsuko Ohta (seventh from right), Lady Sponsor

Keppel FELS is on track to deliver a fifth high-specification accommodation semisubmersible (semi) to Floatel International Ltd (Floatel) on time, on budget and with a perfect safety record.

The semi, which is built to Keppel's proprietary SSAU™ 5000NG design, was named Floatel Triumph during a ceremony held on 11 March 2016. It will be chartered by INPEX Operations Australia for work in Ichthys Field, off Western Australia.

Mr Wong Kok Seng, MD of Keppel Offshore & Marine (Offshore) and Keppel FELS, said, "As a leading designer, builder and repairer of mobile offshore rigs, we are able to provide the highest quality and most cost effective solutions that are customised to our clients' needs. This includes non-drilling solutions, like accommodation vessels and offshore maintenance platforms.

"Our yards remain busy for the rest of the year, with a number of deliveries in the pipeline. As we ride through this challenging period in the offshore and marine industry, we continue to work closely with our quality customers to ensure that we deliver projects to their highest satisfaction."

Developed by Keppel's Deepwater Technology Group, the SSAU™ 5000NG is an enhanced design that meets the stringent UK health, safety and environment (HSE) requirements to work in the UK sector of the North Sea, as well as the Gulf of Mexico, Brazil and Western Australia. It is also equipped with state-of-the-art accommodation and recreational facilities to provide increased comfort for its 500-person crew.

Mr Peter Jacobsson, CEO of Floatel, added, "Each of the accommodation vessels that Keppel has delivered to Floatel has been performing very well.

They are uniquely designed to provide superior stability, safety and living conditions, meeting the stringent rules and regulations for worldwide operations. Just like its sister rigs, we are fully confident that Floatel Triumph will serve us well and we look forward to more win-win partnerships with Keppel.

"Despite the current challenging environment, all our vessels continue to receive strong demand and have high utilisation rates. In the current oil price environment, sustaining production levels is key for oil companies, and accommodation units are required as they reduce downtime during periods of essential maintenance. Douglas Westwood forecasts that growth in the offshore accommodation market for units supporting operational activities will be sustained at 3% compound annual growth rate (CAGR) from 2015 to 2020."

Keppel FELS previously delivered Floatel Superior, Floatel Reliance, Floatel Victory and Floatel Endurance to Floatel. Floatel Reliance and Floatel Victory are also built to the SSAU™ design with the latter currently in operation at Clair Ridge Field, West of Shetland, UK, for BP. Floatel Reliance has recently completed its contract with Petrobras in Brazil. Floatel Superior and Floatel Endurance are built to Keppel's proprietary DSS™ 20NS design and have been chartered to Premier in Solan Field, United Kingdom and Chevron in Wheatstone Field, Australia respectively.

# Executing to perfection

Despite the low oil price environment and uncertainty in the global economy, Keppel Offshore & Marine (Keppel O&M) continues to be the partner of choice in both newbuild and repair projects.

## JACKUP RIG CONSTRUCTION

Since securing the contract in February 2014, the project team at Keppel FELS has been working closely with Fecon International Corp. (Fecon) to build three high-specification KFELS B Class jackup rigs, Projects B371 (Fecon 1), B372 (Fecon 2) and B373 (Fecon 3) respectively.

Progress on the three rigs have been going smoothly, with Fecon 1 and 2 currently in the commissioning phase. Fecon 3 is in the block assembly stage and will be moved to the dry dock in the second quarter of 2016.

The cost-effective and high-performance KFELS B Class rig is able to operate in water depths of up to 400 feet and drill to 30,000 feet deep. Customised to Fecon's requirements, the three jackup rigs will each have a full 15,000 psi BOP system, 70-foot cantilever outreach and be able to accommodate 150 persons.

## FLNG CONVERSION

The Floating Liquefaction (FLNG) conversion that Keppel Shipyard is carrying out on Golar LNG's Moss-type Liquefied Natural Gas (LNG) carrier, the HILLI, is making good progress and about 68% completed to date.

The sponsons have been successfully integrated, which

widen the beam of the vessel to 62.6 metres from the original 42 metres. Keppel Shipyard is currently fabricating the modules for the topsides and liquefaction process.

The HILLI is the first LNG carrier that Keppel Shipyard is converting into an FLNG vessel for Golar LNG. Keppel Shipyard was subsequently awarded another two FLNG conversion contracts; full construction work will only commence after a notice to proceed has been issued.

## FPSO CONVERSION

Conversion work on Floating Production Storage and Offloading (FPSO) vessel, Husky Madura, is progressing well. Husky Madura will be the third conversion/upgrading project that Keppel Shipyard has undertaken for Armada Madura EPC Limited, a joint venture between Bumi

Armada Berhad and Shapoorji Pallonji Group.

The FPSO is scheduled to be delivered in 3Q 2016. Upon completion, the FPSO will produce for the Madura Strait Block BD which is located 65km east of Surabaya and about 16km south of Madura Island, Indonesia.

## WATER INJECTION FACILITY

Keppel Shipyard was awarded the conversion job by Rotating Offshore Solution to convert the Mobile Offshore Drilling Unit (MODU), Marsya, to a Water Injection Facility. Keppel Shipyard is undertaking major refurbishment and upgrading works that included installation of new equipment for Water Injection Facilities, new living quarters, fabrication and installation of New Marine System (Piping, Electrical), modification

*Continues on page 12...*



The conversion of LNG Carrier, Hilli, by Keppel Shipyard into an FLNG vessel is progressing well and is about 68% completed to date



Continued from page 11...

and upgrading of helideck and installation of topside equipment piping.

### **MULTI-PURPOSE VESSEL**

Following its strike steel ceremony in September 2015, the multi-purpose vessel that Keppel Singmarine is building for a Luxembourg based customer is now over 55% completed. Currently under construction on the slipway, the vessel is scheduled to be launched in the second half of this year.

Built to the proprietary design of Keppel Offshore & Marine's ship design and development arm, Marine Technology Development (MTD), the vessel is designed to operate in ambient temperatures as low as minus 30 degrees Celsius, and will have capabilities such as Class 3 dynamic positioning and diving support functions. Scheduled for completion in mid-2017, the project will reinforce Keppel Singmarine's strong track record in designing and building specialised vessels.

### **ANCHOR HANDLING TUG**

In its home stretch towards delivery in the middle of the year, the Anchor Handling Tug (AHT) being built for Seaways International (Seaways) is now more than 80% completed.

Having struck steel in March 2015, the vessel is due to be launched at the end of March 2016.

Suitable for an array of offshore activities, the AHT vessel will



The multi-purpose vessel that Keppel Singmarine is building is currently under construction in the slipway and scheduled to be launched in 2H 2016



When completed in 2Q 2016, the vessel will be the fifth AHT unit that Keppel Singmarine has built for Seaways

have a designed bollard pull of 120 tonnes. It will be equipped with Class 1 and 2 fire-fighting capabilities, dynamic positioning systems Class 2, and oil recovery Class 1 capabilities, amongst a host of other equipment.

When completed, the vessel will be the fifth AHT unit that Keppel Singmarine has built for Seaways.

# Hakuryu-5 winterised



Project management teams from Keppel FELS and Japan Drilling Co. celebrated yet another win-win partnership during the re-delivery signing of Hakuryu-5

Keppel FELS celebrated the re-delivery of the Hakuryu-5 semisubmersible drilling rig to Japan Drilling Co. (JDC) on 2 February 2016.

Mr Toshiki Abe, GM (Technical Maintenance) of JDC, shared, "Despite the tight timeline, our close partnership with Keppel FELS enabled us to overcome the obstacles we faced from the procurement stage to production for a safe and successful delivery."

To ensure smooth operations in cold environments, Hakuryu-5 arrived at the yard on 23 November 2015 for winterisation works.

The major scope of work included the installation of heat tracing and boiler systems, as well as space heating systems in various components.

A long-time partner of JDC, Keppel FELS has collaborated with JDC on other repair projects, including Hakuryu-10, Hakuryu-11 and NAGA 1.



Semisubmersible drilling rig Hakuryu-5 made a repeat visit to Keppel FELS in November 2015 for repair and refurbishment work

Apart from repair and maintenance projects, Keppel FELS is also building a KFELS Super B Class jackup rig, Hakuryu 15, for BOT Lease Co. Scheduled for

completion at end-2016, the rig will be operated by JDC, making it the second KFELS Super B Class jackup rig in JDC's fleet.



# Warm reception in Brazil

A delegation led by Singapore's Deputy Prime Minister & Coordinating Minister for National Security Mr Teo Chee Hean visited Keppel FELS Brasil's BrasFELS shipyard on 31 January 2016 to learn more about Keppel's operations in Brazil.



During his visit to BrasFELS, Singapore's Deputy Prime Minister & Coordinating Minister for National Security, Mr Teo Chee Hean (centre) planted a Pau-Brasil tree together with Mr Kwok Kai Choong (left), CEO & President of Keppel FELS Brasil, Mr Marlin Khiew (right), President of BrasFELS, and the daughter of a Keppel employee



Singapore's Deputy Prime Minister, Mr Teo Chee Hean (sixth from left) on a walkabout at BrasFELS shipyard together with Ms Chin Siew Fei (fourth from left), Chargé d'Affaires, Embassy of Singapore in Brasilia, Mr Tay Lim Heng (eight from left), Director, Group Risk Management, Keppel Corporation, Ms Valerina Soo (sixth from right), Regional Director (South America) of International Enterprise Singapore, and BrasFELS management and employees



## DPM Teo's handwritten note in the BrasFELS guestbook

Thank you very much for your hospitality, especially on a Sunday, and for showing me the great work that the team here is doing.

The test of a company and its people comes when there are challenges to be faced and overcome.

With the "Can Do" Keppel spirit, I am confident that BrasFELS will continue to grow from strength to strength and contribute to the relations between the Brazilian people and Singapore.

Best wishes,

*Teo Chee Hean  
Singapore's Deputy Prime Minister  
31 January 2016*

Mr Kwok Kai Choong, CEO & President of Keppel FELS Brasil, Mr Marlin Khiew, President of BrasFELS, and Mr Tay Lim Heng, Director of Group Risk

Management, Keppel Corporation, hosted the delegation, which included Ms Chin Siew Fei, Chargé d'Affaires, Embassy of Singapore in Brasilia, and Ms Valerina Soo,

Regional Director (South America) of International Enterprise Singapore.

The delegation toured the yard, meeting both Brazilian and Singaporean employees. They were also given a presentation on Keppel's milestone projects for Brazil's offshore and marine industry as well as its people development and community initiatives.

To commemorate the occasion, DPM Teo planted a Pau-Brasil tree within the shipyard's grounds. Symbolic of Brazil's abundant natural resources, Pau-Brasil is the tree from which Brazil derives its name.



During his visit, DPM Teo and his delegation toured the BrasFELS yard to better understand yard operations and also chatted with employees to get a glimpse of their lives in Angra Dos Reis, Brazil



DPM Teo met with BrasFELS employees, including Singaporean employees who have been seconded to Brazil as well as Brazilian employees who have undergone training or attachment programmes in Singapore

# Showcasing gas solutions



Senior Minister of State in the Prime Minister's Office, Ministry of Foreign Affairs and Ministry of Transport, Mrs Josephine Teo (centre, in dress), delegates from the Ministry of Transport, the Maritime and Port Authority of Singapore and Keppel senior management posing for a group picture with the Floating Liquefaction Vessel, GoFLNG Hilli (background), which is at Keppel Shipyard for conversion works

As a leading provider of offshore and marine solutions globally, Keppel Offshore & Marine (Keppel O&M) is poised to seize Liquefied Natural Gas (LNG) development opportunities in the region. Its ship repair and conversion unit, Keppel Shipyard, has a long track record of catering to the LNG market, and was the first shipyard in the world to provide conversion solutions for a Floating Liquefaction Vessel in 2014.

On 13 January 2016, Keppel Shipyard invited Senior Minister of State (SMS) in the Prime Minister's Office, Ministry of Foreign Affairs and Ministry of Transport, Mrs Josephine Teo, to a visit to the yard to share and exchange views on the LNG market.

Receiving SMS Teo were senior management including Mr Loh Chin Hua, Chairman of Keppel O&M and CEO of Keppel Corporation, Mr Chow Yew Yuen, CEO of Keppel O&M, and



Mr Loh Chin Hua (third from right), Chairman of Keppel O&M and CEO of Keppel Corporation, presenting a book on Keppel O&M to Minister of State in the Prime Minister's Office, Ministry of Foreign Affairs and Ministry of Transport, Mrs Josephine Teo. Also in the picture are (from L-R): Capt. M Segar, Assistant Chief Executive (Operations) of Maritime and Port Authority of Singapore (MPA); Mr Chow Yew Yuen, CEO of Keppel O&M; Mr Michael Chia, MD (Marine & Technology) of Keppel O&M; and Mr Andrew Tan, Chief Executive of MPA

Mr Michael Chia, MD (Marine & Technology) of Keppel O&M.

During the meeting, Keppel shared on its proprietary solutions that cater to different parts of the LNG value chain as well as key market

drivers and challenges. Among the solutions developed by Keppel was a dual-fuel diesel LNG tug design that clinched the Outstanding Maritime R&D and Technology Award at the 2015 Singapore International Maritime Awards.



# Bilateral exchange

To learn about the yard's operations and businesses, Dato Sri Michael Manyin Anak Jawong, Minister for Infrastructure Development and Communications, Sarawak, Malaysia, visited Keppel Shipyard on 7 March 2016. Dato Sri Michael was accompanied by a delegation comprising Permanent Secretary, Ministry of Infrastructure Development and Communications, Sarawak, Tuan Haji Safri Bin Haji Zainudin and management from Miri Port Authority and Kuching Port Authority.

This is part of the regular visits by government officials and industry practitioners and professionals that Keppel Shipyard hosts in order to strengthen ties with its stakeholders.

The yard has a long record of serving the Malaysian market and has established strong partnerships with clients, including M3energy Offshore and Bumi Armada Berhad. Keppel Shipyard delivered Floating Production Storage and

Offloading (FPSO) vessel Ratu Nusantara to M3energy Offshore in late 2014 and is currently undertaking three FPSO and one Liquefied Natural Gas Floating Storage Unit conversion projects for Bumi Armada Berhad.



Mr Tan Ek Kia (fourth from right), Keppel Offshore & Marine Director, and Mr Michael Chia, MD (Marine & Technology), Keppel Offshore & Marine, hosted a visit by a delegation from Sarawak, Malaysia led by Dato Sri Michael Manyin (centre), Minister for Infrastructure Development and Communications, Sarawak, at Keppel Shipyard

---

# HSE Partnership with Shell

Keppel Shipyard's successful conversion of the Floating Production Storage & Offloading vessel, Turritella, with a solid safety record, was achieved through

collaborative efforts in HSE with Shell and other stakeholders.

Building on that partnership, Shell has contributed US\$50,000

towards Keppel Shipyard's Hearing Conservation Programme. The ongoing programme underwent a revamp in mid-2015 to include additional initiatives to promote greater awareness in hearing health and to enhance hearing protection in the workplace.



Mr Albert Kee (second from right), ED of Operations, Keppel Shipyard, presenting a plaque to Mr Eric Gilmore (third from left), Construction Manager, Shell, in appreciation of Shell's contributions toward the shipyard's Hearing Conservation Programme

To express their appreciation for Shell's steadfast support as a HSE partner, Keppel Shipyard management presented Mr Eric Gilmore, Construction Manager, Shell, with a commemorative plaque on 27 January 2016.



# Keeping agile for the future



Mr Choo Chiau Beng (left), former CEO of Keppel Corporation, answered various questions during the dialogue session of the 30th Chua Chor Teck Memorial Lecture, which was chaired by Mr Lim Boon Heng (right), Chairman of Temasek Holdings



The question and answer segment of the lecture saw a wide variety of questions raised as members of the audience discussed the future of the offshore and marine industry

“To remain competitive, we must be able to adjust and adapt well in the changing environment we find ourselves in.”

This was the key piece of advice

that guest speaker Mr Choo Chiau Beng, former CEO of Keppel Corporation, shared at the 30th Chua Chor Teck Memorial Lecture held on 17 February 2016 at Singapore Polytechnic.

Jointly organised by Keppel Offshore & Marine (Keppel O&M), the Society of Naval Architects and Marine Engineers, Singapore and the Singapore Maritime Academy, the lecture was themed “Singapore’s Marine and Offshore Industry – What the past 45 years can teach us about the future”. In the audience were about 370 professionals, students and retirees.

Emphasising that agility and innovation are key to triumphing over current challenges in the cyclical offshore and marine industry, Mr Choo stressed how Keppel has constantly adapted to changes – whether building its first speculative rig in 1987 or entering the property business.

The lecture was followed by a robust dialogue session moderated by Mr Lim Boon Heng, Chairman of Temasek Holdings, who recounted

the period of volatility in the 1980s and how local companies emerged stronger to become sought-after industry partners.

Before the lecture, Mr Michael Chia, MD (Marine) of Keppel Shipyard and Chairman of the Chua Chor Teck Memorial Fund (CCTMF) presented a scholarship certificate to an outstanding recipient of the CCTMF-MaritimeONE Scholarship.

Keppel Corporation supports the CCTMF, which was established in 1986 in honour of the late Mr Chua, a former MD of the Keppel Group and a pioneer of Singapore's marine industry. The fund provides scholarship opportunities to polytechnic and university students who aspire to join the industry.

Organised annually since 1986 in remembrance of the late Mr Chua Chor Teck, MD of Keppel Shipyard and one of the pioneers of Singapore's marine industry, the Chua Chor Teck Memorial Lecture has become a valued platform for industry leaders and experts to share their insights on a variety of offshore and marine-related topics.

## Reuniting over tea

Senior management from Keppel and over 60 Keppel O&M alumni mingled over tea prior to the start of the 30th Chua Chor Teck Memorial Lecture.



Chatting with guests at the alumni event were Mr Chow Yew Yuen (extreme left), CEO of Keppel O&M; Mr Lim Boon Heng (fourth from left), Chairman of Temasek Holdings; and Mr Choo Chiau Beng (fourth from right), former CEO of Keppel Corporation



Mr Loh Chin Hua (extreme left), CEO of Keppel Corporation and Chairman of Keppel O&M, Dr Lee Boon Yang (second from left), Chairman of Keppel Corporation, and Mr Choo Chiau Beng (right), former CEO of Keppel Corporation, mingling with alumni over tea



It was an afternoon to remember as members of KOM alumni caught up with old colleagues and friends over tea



# Gathering of minds



Great minds from across Keppel O&M engaging in discussions at the strategy meeting in February 2016 on how the company can continue to forge ahead in the longer term amidst a downturn

With the headwinds facing the offshore and marine industry, the management team from across Keppel Offshore & Marine's (Keppel O&M) yards and offices worldwide had much to discuss as they gathered in Singapore for the Group's biannual strategy meeting.

Held on 4th and 5th February 2016, the meeting served as a platform for top executives to be updated on markets across different regions; the growth opportunities, strategies, initiatives and risk management of the yards; as well as share ideas and explore opportunities to collaborate.

Chairman of Keppel O&M and CEO

of Keppel Corporation, Mr Loh Chin Hua opened the session speaking on the resilience and *Can-Do* spirit of the yards, as well as their prudence in pursuing quality projects that are underpinned by strong execution and productivity. At the same time, he emphasised the need to look out for opportunities to collaborate and harness collective strengths not just within Keppel O&M but across the Keppel Group.

Mr Chow Yew Yuen, CEO of Keppel O&M, concurred, reiterating that in the midst of the gloom from the low oil prices, with numerous shipyards suffering from

losses, the company was actually the best performing shipyard in the world, remaining profitable and able to seize opportunities in the downturn. The acquisition of the LETOURNEAU™ business is an example of growing capabilities. He added that the company could leverage its wide offshore expertise to provide solutions for other markets as well.

Taking on this theme was the team from Keppel O&M's technology outfit in Houston. They presented on ways to leverage synergies across the group to develop new solutions in industries such as in the gas value chain, offshore wind and subsea technologies.

## KEPPEL O&M'S HOUSTON TECHNOLOGY CENTRE

Houston is the world's capital of the oil and gas industry with over 5000 energy firms doing business there.

Keppel O&M has had a representative office in Houston since 1980 which was further developed into an engineering, business and technology foresight unit in 2002. Today, the Keppel O&M Houston Centre is at the forefront of research and development into the latest offshore and marine technologies.

With the objectives of studying the future market and its potential impact on Keppel O&M, developing long range projects and intellectual property as well as identifying and exploring growing business opportunities, Keppel O&M has assembled a team of very experienced professionals with a wide range of knowledge in various sectors of the offshore and marine industry. This includes

offshore and onshore drilling, LNG, FPSO, shipbuilding and shiprepair, arctic offshore development, regulations and classification, technology development and research.

They have built up a strong network with customers, oil majors and supporting companies in the oil and gas market.

In 2011, Mr Jim Davis joined the team to look into the business development of drilling systems designs and operations, with applications in drillships, semisubmersibles, jackups, tension leg platforms and SPARS. Jim was previously President of Drilling & Marine Technology & Supply and VP Engineering of Rowan Companies.

Consulting on the ultra-deep-water drillship among other things is Mr Lindsay Clark, who has held senior positions in BP, Enso and Transocean. His expertise includes offshore drilling, design, engineering and new construction,

commissioning, start-up, major modifications and repair projects.

As a consultant to Keppel on technology for offshore, arctic and marine sectors, Mr Peter Noble is currently involved in a number of research, consulting and advisory assignments in these fields. Prior to joining Keppel in 2013, Peter was the chief naval architect and chief arctic technologist with ConocoPhillips. He was also the President of the Society of Naval Architects and Marine Engineers.

To boost Keppel O&M's foray into the LNG sphere, Mr Tony Teo was recruited as LNG Business Director in 2015. Tony has over 35 years of experience in the maritime industry including leadership positions at DNV North America and North Middle East. He was also the key account manager at Nakilat and his expertise include marine warranty, ship classification surveys in new-buildings & in-service, technologies in CNG, LNG and Energy Efficiencies.

Vice President of Keppel O&M USA, Mr Tak On Cheung, who helped set up the technology unit, has seen the growth made by the Centre over the years. The experienced naval architect and ocean engineer was part of the team responsible for developing the company's benchmark KFELS B Class design and believes that the Centre is well-equipped to contribute to the next step change of Keppel O&M for the future.



The Keppel O&M Houston unit is at the forefront of advancing technology and exploring opportunities in current and new markets such as drillships, subsea systems and LNG solutions.



# Harnessing strengths

At the Global Keppelites Forum 2016, the annual Group-wide townhall, Mr Loh Chin Hua, Chairman of Keppel Offshore and Marine (O&M) and CEO of Keppel Corporation, shared the Group's progress on its journey towards Vision 2020.



At the Global Keppelites Forum, Mr Loh Chin Hua, Chairman of Keppel O&M and CEO of Keppel Corporation provided an update on Keppel's progress towards Vision 2020, the Group's holistic development roadmap towards the year 2020

On 28 January 2016, almost 3,000 Keppelites gathered in over 70 locations worldwide for the second annual Group-wide virtual townhall meeting, the Global Keppelites Forum.

At the event, Mr Loh Chin Hua, CEO of Keppel Corporation, shared on the Group's progress on its journey towards Vision 2020, the Group's holistic development roadmap to become one of the top well-run, best-in-class conglomerates worldwide by 2020. Vision 2020 was first unveiled at the inaugural forum in 2015.

With his address being broadcast live from the Keppel Leadership Institute in Singapore, Mr Loh

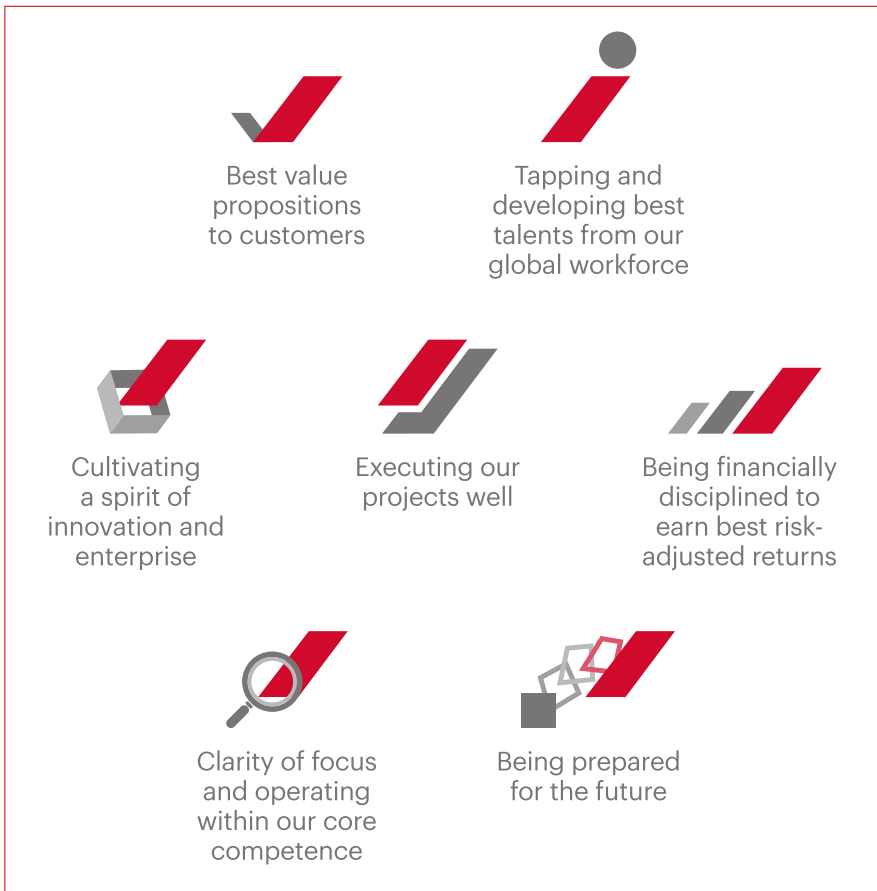
provided insights on the performance and achievements of the various business units, reiterating the Group's commitment to its multi-business strategy.

"In the past year, we have been buffeted by numerous headwinds, such as volatility in financial markets. Despite the many challenges that we faced at home and abroad, Keppel performed creditably in 2015. Our performance last year reflects our strengths as a conglomerate," he said.

Mr Loh also reassured Keppelites about the company's future and encouraged them to continue

"In a global corporation like Keppel, the forum is an important avenue for management to constantly engage employees so they have a better picture of what is happening among the various subsidiaries within the Group and to align expectations and aspirations"

**Ching Youyi**  
Manager, Business Development  
(Research & Analysis)  
Keppel Singmarine



The new icons for Keppel's Operating Principles were unveiled at the Global Keppelites Forum 2016

to work hard, innovate and to face challenges with Keppel's trademark *Can Do!* spirit.

"With all the negative news today it is inevitable that some of us have concerns about the company's future. We need to remember that Keppel has many strengths. We have a very strong team of leaders in place, and this downturn also provides an opportunity for the new and younger leaders to be tested.

"We need to collaborate as 'One Keppel'. Not just to tackle the challenges ahead of us but to come together as a Group to execute well, think out of the box and be prepared for the future," Mr Loh said.

For Rafael Portela Cassoriello, Engineer in the Yard Planning Department of BrasFELS in Brazil,

*Continues on page 30...*



Keppelites from all over the world, such as those at BrasFELS in Brazil, tuned into the Global Keppelites Forum via webcast



Continued from page 29...



Senior management together with Keppelites at the Global Keppelites Forum 2016 held at the Keppel Leadership Institute

the forum gave him a broader perspective of Keppel's Brazil operations in the context of the Group's multi-business strategy.

"This has inspired me to work even harder and aim even higher, as well as to find innovative solutions to optimise our internal processes, reduce costs and emerge stronger," he said.

Along these lines, Mr Loh unveiled a new set of icons to represent Keppel's seven Operating Principles, to better illustrate the guiding principles by which the Group operates.

### **ONE KEPPEL, GLOBALLY**

During the question and answer segment, Mr Loh, Mr Chow Yew Yuen, CEO of Keppel O&M, and the various business heads gamely fielded queries from Keppelites around the world.

Over 120 questions came fast and furious courtesy of the live web portal Pigeonhole, with more than 3,360 votes cast for questions.

Keppelites appreciated the interactivity.

### **CANDID EXCHANGE**

*OffshoreMarine* shares some of the highlights from the question and answer session, which was moderated by Ms Wang Look Fung, Consultant to Keppel Corporation.

### **On career prospects for mid and junior staff**

**LCH:** Wherever possible, we want to groom internally. We have to ensure that we have the best person for the job. If you look at the team here, a significant number of us have been with Keppel for a long time. But bringing in people from outside also brings a fresh perspective. The key for us is to create more opportunities for the people inside at the junior or middle level to grow. There are plenty of opportunities for all.

### **On work-life balance**

**CYY:** I've been in this industry for the last 37 years, 35 of which

have been with Keppel. What is important is that you must enjoy what you do. When you have the passion for what you do, you will get satisfaction from it. At the end of the day, that is how you find your own work-life balance.

I have a principle: for anyone who applies for leave, I will approve regardless. Because I believe that if you apply for leave, you have a reason to do so. It is about the individual. If you engage with your work and have the passion for it, that is the most important thing.

### **On preventing groupthink**

**LCH:** I don't see groupthink. I have been in meetings where there are very robust discussions and huge disagreements, where chairs have actually been kicked. But once the discussion has taken place and the decision is made, everyone closes ranks and moves on as one. That has been the Keppel way and should continue to be so.

LCH – Loh Chin Hua, CEO, Keppel Corporation

CYY – Chow Yew Yuen, CEO, Keppel Offshore & Marine

# Collaborative innovation

Through its Research, Innovation and Enterprise 2020 plan, Singapore seeks to develop and upgrade existing industries to support the continued growth and competitiveness of its economy by encouraging greater involvement in Research & Development in the private sector.

The 13th Keppel Offshore & Marine (Keppel O&M) Lecture held on 25 January 2016 saw an insightful sharing by Mr Lim Chuan Poh, Chairman of Singapore's Agency for Science, Technology and Research (A\*STAR), on existing and possible collaborations

between public researchers and the various industries in Singapore, including offshore and marine, to increase the latter's competitiveness and enhance long-term growth and capabilities.

The lecture is jointly organised by Keppel O&M and the National University of Singapore (NUS) under the auspices of the Keppel Professorship, which was founded in 2002 by Keppel O&M through the establishment of a NUS Professorship in Ocean, Offshore and Marine Technology. The lecture aims to promote greater interest in the study and research

of offshore and marine technology to enhance the industry's development of technologies, products and services.

Keppel O&M has always been active in fostering a culture of continuous innovation by collaborating with industry partners and academic institutes. On top of the Lecture, Keppel O&M and National University of Singapore (NUS) set up the Keppel-NUS Corporate Laboratory, in collaboration with the National Research Foundation (NRF), Prime Minister's Office, Singapore, in 2013.



Mr Lim Chuan Poh, Chairman of A\*STAR, spoke of the value of collaborative research at the 13th Keppel Offshore & Marine Lecture

Leveraging the expertise of NUS research centres such as the NUS Centre for Offshore Research & Engineering and NUS Tropical Marine Science Institute, as well as Keppel's research unit Keppel Offshore & Marine Technology Centre, the Corporate Laboratory will develop capabilities and technologies to maintain Singapore's position as a global leader in the offshore and marine industry.



Keppel O&M management visiting the newly opened robotics and automation workshop by Keppel-NUS Corporate Laboratory that looks into productivity enhancement of yard operations



# Creating a knowledge sharing culture

Committed to deepening knowledge in the offshore and marine industry, BrasFELS' Alumni Programme organises regular sharing sessions for mentors to share their knowledge and experience.

from participating in the Diploma (Conversion) in Marine & Technology (DCMOT) programme in Singapore last year.

The Alumni Programme, which consists of an executive committee

of 18 members from the Trainee Engineers Programme, has plans to conduct more workshops throughout the year, with a focus on productivity, innovation and safety.

During the inaugural sharing session on 19 February 2016, Marcelo Morais, Production Supervisor and a former Trainee Engineer from BrasFELS, spoke on "The Fundamentals of Naval Architecture", covering topics, such as the different types of ships and ship geometry. Besides the technical aspect, Marcelo also spoke about his experience



The inaugural sharing session organised by BrasFELS' Alumni Programme saw a strong turnout, comprising of BrasFELS employees who are undergoing the two-year Trainee Engineers Programme as well as graduates of the programme

---

# Fostering industry collaboration

Keppel Offshore & Marine (Keppel O&M) hosted a delegation from the ISO Technical Committee for Offshore Structures on 20 January 2016 as part of ongoing efforts to foster deeper collaboration within the industry.

The delegates, consisting of over 40 researchers from international and national oil companies such as ExxonMobil, Royal Dutch Shell and BP, were hosted by Mr Aziz Merchant, ED of Keppel Offshore & Marine Technology Centre

(KOMtech), and Dr Foo Kok Seng, ED (Shallow Water Technology) of KOMtech.

The delegates were given a presentation on Keppel O&M's technological innovations, such as Keppel FELS' automated panel line workshop, as well as laser scanning for repair projects and newbuild rigs.

Following a robust discussion on production and engineering automation, the delegates toured the yard to better understand operations within the facility.



Delegates from the ISO Technical Committee for Offshore Structures exchanged ideas on how technological innovations can improve work processes in the offshore and marine industry during their visit to Keppel Offshore & Marine

# Innovative ice-class designs

For its groundbreaking efforts in furthering ice-class vessel technology, Keppel Singmarine scored silver awards for its ice-class supply and ice-class multi-purpose duty rescue vessel designs at the annual Keppel Offshore and Marine (Keppel O&M) Innovation Competition 2015.

Contracted to build the vessels for a subsidiary of Bumi Armada, Keppel Singmarine developed the proprietary designs at a time when there were no off-the-shelf ice-class vessel designs capable of meeting operational requirements in the North Caspian Sea.

Due to low salinity and extreme temperatures, the ice-class supply and ice-class multi-purpose duty rescue vessels operating in the North Caspian Sea are required to break through open floating first-

year ice of 600 to 800mm (RMRS ARC4) thick and 800 to 1,000mm (RMRS ARC5) thick in shallow draft conditions, respectively. In addition, the vessel width should not be more than 17 m in order to navigate through the Volga-Caspian canal.

Aiming to fill this gap in the ice-class vessel market, Keppel O&M's ship design and development arm, Marine Technology Development (MTD), rose to the challenge by developing proprietary designs for the ice-class supply and ice-class multi-purpose duty rescue vessels.

The project team spent eight months creating a new design for a shallow draft ice-class vessel equipped with robust ice-breaking capabilities and excellent calm water performance. The new design was able to

meet the unique requirements of the customer on the vessel's draught, width, transit height and guaranteed deadweight.

In September 2015, Keppel Singmarine successfully delivered two ice-class supply vessels and one ice-class multipurpose duty rescue vessel to Bumi Armada on schedule and with a perfect safety record. These were the first-ever ice-class vessels to feature Keppel Singmarine's proprietary designs.

Reinforcing its position as an industry leader in the design and construction of specialised vessels, Keppel Singmarine is currently constructing a multi-purpose vessel for New Orient Marine Pte Ltd, a subsidiary of Luxembourg-based Maritime Construction Services SA.



Keppel Singmarine successfully delivered two ice-class supply vessels and one ice-class multi-purpose duty-rescue vessel to Bumi Armada in September 2015



# Forging closer partnerships

Celebrating another year of close collaboration, Keppel FELS senior management and employees joined over 260 guests from 95 subcontract companies in reaffirming their strong partnership during the annual dinner hosted by Keppel FELS Subcontractors' Executive Council (KSEC) Dinner and Dance on 18 February 2016.

In his opening address, Mr Chow Yew Yuen, CEO of Keppel Offshore & Marine, shared, "Keppel FELS' success hinges not just on the dedication and commitment of our employees, but also on the support and understanding of our subcontractors. I am confident that as long as we continue to work closely together, we will ride through this downturn and emerge stronger than ever.

"The relationship between management and subcontractors in Keppel FELS is a unique one. In my 35 years with Keppel, I have seen this relationship grow from strength to strength due to the efforts of KSEC and our unions."

KSEC Chairman Mr Ng Joo Kheong emphasised that Keppel FELS subcontractors would continue to streamline and look for ways to boost productivity in order to reduce costs in view of the current challenging environment.



1. Management and subcontractors of Keppel FELS celebrated another year of successful partnership during the Keppel FELS Subcontractors' Executive Council Dinner and Dance  
4. Mr Chow Yew Yuen (extreme right), CEO of Keppel Offshore & Marine, expressing his appreciation towards subcontractors for their dedication and hard work





2. Guests enjoyed an evening of performances, including belly dance, as well as various variety shows

3. Members of the audience, such as Nicholas Ong, Sales Executive, Masstron Pte Ltd, gamely participated in stage games

5. Senior management from Keppel FELS, including Mr Wong Kok Seng (second from left), MD of Keppel O&M (Offshore) and Keppel FELS, ushered in the Lunar New Year with subcontractors, including Mr N.K. Lal (extreme left), MD of Lal Offshore Marine and Vice-chairman of Keppel FELS Subcontractors Executive Council

6. It was a night to remember as guests toasted to greater partnership in the Year of the Monkey

# Nurturing Keppelites

At Keppel Offshore & Marine, the safety and well-being of our employees is our top priority. Besides updating our safety strategies to ensure that they remain relevant, sharing sessions are also organised regularly so that all Keppelites are kept updated on the latest safety practices and employment benefits.

## REVIEWING OUR SAFETY PRINCIPLES

To ensure that our safety framework and strategies remain relevant in an ever-changing business environment, Keppel's Board Safety Committee proposed revisions to the current set of safety principles. The five key



Besides touring the premises at Acacia Lodge, Ms Htwe Hteik Tin Lwin (pictured, speaking), Counsellor, Embassy of the Republic of The Union of Myanmar also took the opportunity to engage with Keppelites from Myanmar

safety principles were first developed in 2008 to encourage and drive the correct behaviour in all daily operations across the Group.

Republic of The Union of Myanmar, visited Acacia Lodge, one of the dormitories under Keppel Housing to engage with Myanmar Keppelites.

## 5 KEY SAFETY PRINCIPLES

1. Every incident is preventable
2. Health, Safety & Environment (HSE) is an integral part of our business
3. HSE is a line responsibility
4. Everyone is empowered to stop any unsafe work
5. A strong safety culture is achieved through teamwork



**Keppel Group**

In his memo to Keppelites, Mr Loh Chin Hua, CEO, Keppel Corporation, shared, "Refreshing the safety principles is part of our continuous effort to strengthen Keppel's safety culture. Through the teamwork and partnership of all our stakeholders, we will be a step closer to achieving our vision where every one goes home safe, each and every day."

## ENGAGING WITH KEPPELITES

On 6 March 2016, Ms Htwe Hteik Tin Lwin, Counsellor, Embassy of The

Hosted by Mr Steven Lee, General Manager, Keppel Housing, the engagement session included talks on a wide range of topics, including Workplace Safety and Health, as well as employment rights. Prior to the visit, Ms Htwe had toured the facilities, such as the multi-purpose room and the accommodation rooms, where she met and mingled with residents.

Ms Htwe shared, "The amenities and welfare provided to Keppelites at Acacia Lodge are impressive and I am glad that Keppel Housing has a wide range of programmes, including regular sharing sessions, to educate and empower employees."



# Growing beyond Singapore shores

As someone who readily embraces new experiences, Felix Allen Jerome seized the chance to be seconded to Qatar in March 2007 as part of the opening team for Keppel Offshore & Marine's (Keppel O&M) joint venture shipyard, Nakilat-Keppel O&M (N-KOM).

For Allen, it was an opportunity of a lifetime. After all, the pace at which N-KOM has developed since its humble beginnings is testament to the Can Do! spirit firmly etched within Keppel's DNA.

"Back in 2007, the land on which the shipyard is situated had not even been reclaimed yet. Now, looking back at how much we have accomplished since we arrived in Qatar gives me immense

satisfaction and pride," he enthused.

Jointly developed by Nakilat, the world's leading transporter of liquefied natural gas (LNG), and Keppel O&M, the 50-ha N-KOM was constructed on the north-eastern tip of Qatar within the Ras Laffan Industrial City. Today, N-KOM boasts some of the most technologically advanced equipment for the repair, conversion and construction of a wide range of marine and offshore vessels and structures.

Now managing the inner workings of N-KOM as GM of Operations, Allen has amassed nine years of overseas experience at the shipyard. During this time, he has managed several groundbreaking

projects, such as the recent delivery of the shipyard's first liftboat, Al Safliya, to Gulf Drilling International on time, on target and with a good safety record.

Allen firmly believes his decision to uproot and try something new has allowed him to grow on both a personal and professional level. He explained, "Having to adapt to local customs and regulations brings a unique set of challenges, but the exposure and experience gained from working in a foreign environment is priceless. The trials and tribulations one will undoubtedly undergo only serve to make you more resilient and adaptable, and these traits are assets to any organisation."

In his leisure time, Allen enjoys catching the latest blockbusters at the movie theatre, shopping and travelling to spectacular tourist sites within the region. "The apartment where I stay is located within central Doha, about 70km south of the shipyard, and there are lots of fantastic Indian and Middle Eastern restaurants in the nearby mall," he shared. When asked what advice he would dispense to Keppelites who aspire to try an overseas stint, Allen simply said, "Go for it! You won't regret the experience!"



For Felix Allen Jerome, GM (Operations) of Nakilat-Keppel Offshore & Marine, uprooting from Singapore to set up the joint venture shipyard (pictured in the background) in Qatar has been an invaluable experience

# Passing the baton



Mr Tong Chong Heong (pictured ) succeeds Mr David Chin as Chairman of the KOM Alumni

Mr Tong Chong Heong, former Senior Advisor to the Board of Keppel Offshore & Marine (KOM), assumed the role of KOM Alumni Chairman on 15 December 2015. He had taken the helm from Mr David Chin, who stepped down as Chairman of the Alumni after five years of service.

During his tenure as the Chairman of the KOM Alumni, Mr Chin spearheaded various events which strengthened the camaraderie and goodwill among Keppelites. This included the KOM Alumni

Get-Together Tea Session cum Chua Chor Teck Memorial Lecture and KOM Alumni Dinner.

Through the Alumni, Keppelites past and present have been able to stay connected and build meaningful networks with each other, sharing an affinity for Keppel.

Mr Tong shared in his first letter to members that he would strive to continue Mr Chin's good work and make participation in the Alumni interesting and meaningful.

---

# Distinguished service

Former Director (Special Duties) of BrasFELS Mr Low Tiau Tong was conferred the title of Honorary Angrense Citizen by the City Council of the municipality of Angra dos Reis in Rio de Janeiro where BrasFELS is located.

The recognition was presented

to Mr Low, who is affectionately known as TT to colleagues and friends, for his many years of service to the development of BrasFELS and its surrounding communities.

Councilman Mr Cleber Antônio da Silva presented Mr Low with

a plaque reflecting his honorary title. The Councilman shared his delight in presenting Mr Low with the award and expressed his appreciation for the great professionalism and expertise shown by Mr Low during his years of service at BrasFELS.



For his contributions to the municipality of Angra dos Reis, Former Director (Special Duties) of BrasFELS Mr Low Tiau Tong (pictured holding certificate) was conferred the title of Honorary Angrense Citizen by the municipality's City Council

# In memory of a Keppel stalwart

*OffshoreMarine* pays tribute to Mr Toh Ko Lin, former Executive Director (Commercial) of Keppel Singmarine.



Known for his dedication to work, attention to detail and commitment to problem solving, the late Mr Toh Ko Lin was a Keppel stalwart who contributed greatly to Keppel Singmarine, particularly in growing its presence in the Philippines

Mr Toh Ko Lin, ED (Commercial), Keppel Singmarine, passed away on 12 February 2016, after a brief battle with cancer. Known for his dedication to work, attention to detail and commitment to problem solving, the late Mr Toh Ko Lin was a Keppel stalwart who contributed greatly to Keppel Singmarine, particularly in growing its presence in the Philippines.

Mr Toh, 64, began his career with the Keppel Group as an Engineering Superintendent in 1975 when he joined Singapore

Slipway, which merged with Singmarine Shipyard and was renamed as Keppel Singmarine. Before he left the Keppel Group in 1984, he was the Engineering and Yard Manager of Gul Engineering.

Mr Toh re-joined Keppel in 1989 as a Corporate Development Manager with Keppel Corporation and was subsequently appointed as General Manager of Arab Heavy Industries in 1991 before taking on the role of Executive Director of Singmarine Industries Ltd in 1994.

Since 1996, Mr Toh had been spearheading Keppel Singmarine's business in the Philippines, helming Subic Shipyard & Engineering, Inc as President/General Manager from 1 February 1996 to 31 July 2000, as well as Keppel Philippines Marine, Inc as its President from 1 August 2000 to 23 October 2006.

Based in Singapore since 2006, Mr Toh was appointed as Senior General Manager (Commercial) of Keppel Singmarine in 2006, Executive Director of Keppel Singmarine in 2013 and Executive Director (Commercial) of Keppel Singmarine in 2015, an appointment he held until February 2016. Mr Toh also served concurrently as the non-resident President of Keppel Philippines Marine, Inc from October 2006 to February 2016.

"Ko Lin has contributed more than 30 years of distinguished service to Keppel, in particular Singmarine. His passion, commitment and dedication to Keppel have left an indelible mark in all of us, and an inspiration to the young Keppelites."

Mr Chow Yew Yuen, CEO of Keppel Offshore & Marine

"Ko Lin was very meticulous and detailed in whatever he did. A dedicated and committed person, he was always a team player and someone you can depend on to get the job done."

Mr Abu Bakar, MD of Keppel Singmarine

"I am deeply saddened to hear of Mr Toh's passing. He was a committed, knowledgeable, patient and fair leader. Many of us, myself included, learnt a great deal from him. He will be missed by all of us."

Mr Stefan Tong, Executive Vice President, Keppel Philippines Marine

"I have had the pleasure of knowing and working with the late Mr Toh for quite a number of years, since my days with Smit Singapore. He was very professional, always looking for solutions, especially in difficult contract negotiations. I have great respect for him and will always remember him with much fondness."

Mr John Bruinsma, Head of Offshore Support Vessels, Bumi Armada Berhad



# Ushering in the Year of the Monkey

Over 1,000 employees from Keppel FELS and senior management from Keppel Offshore & Marine (Keppel O&M) came together to celebrate the successes of the past year and welcome the New Year at Keppel O&M's cafeteria on 5 February 2016.

During his opening address, Mr Chow Yew Yuen, CEO of Keppel O&M, encouraged Keppelites to remain resilient during the downturn and rallied all to forge ahead strong and united in the new year.

Besides being treated to a lion dance performance, guests also enjoyed delicious food, fun games,



FELS toasted to a new year of prosperity and good fortune at the Lunar New Year celebrations on 5 February 2016

a lucky draw and Chinese orchestra performances. The party also saw Mr Wong Kok Seng, MD of Keppel O&M (Offshore) and

Keppel FELS, presenting five awards to Keppelites who displayed exemplary safety standards in the past year.

---

# Increased accessibility with new gate

As part of its ongoing efforts to improve the well-being of workers, Keppel Singmarine installed a new gate at Benoi yard to facilitate the

movement of workers exiting its premises.

Mr Abu Bakar Bin Mohd Nor, MD

of Keppel Singmarine officiated the opening of Security Gate 3 on 18 February 2016. The new gate is fitted with Radio-Frequency Identification (RFID) readers, which records the time each worker clocks out, helping to ease the flow of human traffic and ensuring that workers leave the yard safely and in a timely manner at the end of each working day.



Mr Abu Bakar Bin Mohd Nor (standing, tenth from left), MD of Keppel Singmarine officiated the opening of Security Gate 3 at Benoi Yard on 18 February 2016 to improve the movement of workers leaving the yard at the end of each working day

Santhanam Murali, a supervisor from subcontractor Yeong Cheong Marine, shared, "With the new Gate 3, we now walk a shorter distance to leave the yard and do not need to worry that the long queues at the gate will cause us to miss our bus."

# In the business of being green

Keppel Offshore & Marine (Keppel O&M) is committed to do its part to protect the environment and ensure a sustainable future.

In its 20 yards around the world, its green efforts includes ensuring energy efficiency in its operations in order to reduce its carbon footprint. In 2015, several projects were implemented with these focuses in mind.

Conventional lights at several of its shipyards in Singapore were upgraded to Light Emitting Diode (LED) lights and motion lighting. The yards also installed induction lights as dock yard lights for improved luminance at lower energy consumption levels and upgraded the gantry crane flood lights to a more efficient one.

More specifically, at Keppel Singmarine, the existing T8

lightings were replaced with LED lightings for its offices in both its 5 Benoi and 15 Benoi facilities in Singapore. These measures yielded energy savings of up to 40% and an annual reduction of 33 tonnes of Carbon Dioxide (CO<sub>2</sub>). In addition, Keppel Singmarine also implemented integrated motion sensors, which further reduced energy consumption by 85%.

Meanwhile, Keppel Shipyard installed two power transformers in place of its current portable diesel generator to supply customised voltage levels at its Singapore yards. Based on diesel oil saved, the step down transformers are able to achieve average annual carbon savings of 257 tonnes of CO<sub>2</sub>.

Over at Keppel FELS, the yard explored renewable energy as a means to achieve energy efficiency.

By collaborating with a vendor on a solar leasing programme, Keppel FELS is the first shipyard in Singapore to use solar panels to harvest energy and convert it into electricity for consumption. The pilot installation was completed in 2015 and the programme has achieved an annual electricity savings of 91,397 kWh, with a carbon reduction of approximately 27 tonnes of CO<sub>2</sub>.

In line with the Group's goal to reduce carbon emissions, Keppel O&M organised an inaugural Keppel O&M Energy Saving Initiatives Workshop in the beginning of 2015. The workshop aims to provide a platform for Keppel O&M to consolidate its energy-saving ideas and for all levels of management and teams to pledge their commitment to drive and cascade these ideas across the group.



Committed to protecting the environment, Keppel O&M ensures energy efficiency in its operations in order to reduce its carbon footprint

# New hub for engineers

The Keppel Group's businesses in Offshore & Marine, Property and Infrastructure are driven by technological innovation and strong engineering capabilities.

Acknowledging the important role that engineers play in its industries, Keppel has been a longtime supporter of the Institution of Engineers Singapore (IES), the national society of engineers in Singapore.

To support the society's growth, Keppel Corporation contributed \$250,000 towards the IES Green Building @ Bukit Tinggi. The building was officially opened on 16 February 2016 by Mr Teo Chee Hean, Deputy Prime Minister and Coordinating Minister for National Security.

Mr Loh Chin Hua, CEO of Keppel Corporation, shared, "Engineering is a key part of Keppel's DNA. As a conglomerate with engineering expertise across the offshore and marine, property and infrastructure industries, we take pride in our ability to design, build and deliver projects to the highest standards of safety, quality and customer satisfaction.

"The long-term vitality of Singapore's engineering community is important to us, as we seek to develop our own engineering talent pool. To that end, we are happy to have contributed to the new IES Green Building. The hub for engineers promotes collaboration and supports IES in its mission

to advance the engineering profession in Singapore."

Acknowledging Keppel's donation, the IES has named its members' lounge "Keppel Lounge". The space provides a conducive environment for engineers to relax and network.

Designed by engineers, for engineers, the new IES Green Building embraces the latest green and sustainable design and construction technology.



Top photo: The Keppel Lounge provides a conducive space for engineers to relax and network; Bottom photo: Keppel representative, Dr Foo Kok Seng (right), ED (Shallow Water Technology), Keppel Offshore & Marine Technology Centre and ED, Offshore Technology Development, Keppel Offshore & Marine, receiving DPM Teo Chee Hean (left) at the Keppel Lounge during the official opening of the IES Green Building



# Spreading the festive cheer

Keppel Volunteers celebrated the season of giving by bringing joy and cheer to children and elderly beneficiaries in the months of January and February 2016. OffshoreMarine reports on the activities that Keppelites have been actively involved in.

## HO-HO-WHOLESOME FESTIVITIES

When Santa arrived together with 21 Keppelites to bring festive cheer at the KK Women's and Children's Hospital on 11 December 2015, he found only nice children all around. The visit, organised by Keppel Volunteers, brought an afternoon filled with presents and balloon sculpting to children aged one to 14 and their families at five wards in the hospital.



Keppel Volunteers play Santa and elves to bring festive cheer to children at the KK Women's and Children's Hospital

## CELEBRATIONS WITH SENIORS

In two separate events with the elderly from Thye Hua Kwan Moral Society (THK), Keppel Volunteers dug deep into their hidden talents to bring the gifts of nature and song.

Armed with gardening tools and green fingers, Keppel Volunteers joined 40 elderly for a Terrarium workshop held at the Keppel Leadership Institute at Keppel Bay Towers on 5 December 2015. Unleashing their creativity, the volunteers and elderly tenderly combined colourful plants, sand and decorative elements to create beautifully potted terrariums.

At a separate Christmas party on 12 December 2015, 18 Keppel Volunteers and 75 elderly from Bedok THK ushered in the



Keppelites give the gift of life, donating nearly 400 bags of blood in a drive organised by Keppel Volunteers and the Red Cross

Christmas spirit with a hearty karaoke session. Volunteers and elderly alike sang their hearts out to tunes from their favourite Christmas carols and evergreen hits in different dialects.

## GIFT OF LIFE

Supporting the efforts of the

Singapore Red Cross, Keppelites gave the precious gift of life by donating blood in December. This is when blood stock levels at the Health Sciences Authority's Blood Bank are typically lower due to less donors coming forward over the holiday season.

*Continues on page 38...*

Continued from page 37...



Keppel Volunteers brought bagfuls of cheer to those in need by delivering Fu Dai (festive packages)



Keppel Volunteers and elderly beneficiaries cultivated creative skills and friendship at a ceramic workshop

The blood donation drive spanned five days and five locations, including new outreach venues such as Arcadia Lodge.

“Over the past seven years, Keppelites have been contributing to the Red Cross Blood Donation Drive to help meet dire needs during June and December. We have expanded our reach this year to engage and include our foreign colleagues who have been responsive to show care for others in the community,” shared Teh Ming Ching, Executive Committee Member from Keppel Volunteers overseeing the blood donation drive.

### **FESTIVE DELIVERIES**

Reaching out to 100 beneficiaries, 30 Keppel Volunteers participated in Community Chest’s Fu Dai (festive packages) campaign on 23 January 2016, which brought the community together to show care and concern for the less fortunate amidst the Lunar New Year festivities.

Apart from contributing donations, companies and individuals went the extra mile by packing and delivering essential household items and necessities to frail elderly and families in need. The senior beneficiaries were grateful for the Fu Dai as some of them have difficulty even walking to purchase daily necessities.

Shared volunteer Wayne Siek, Construction Manager (Production) at Keppel FELS, “I am grateful to Keppel Volunteers for organising this meaningful event, which allowed me to do my little part in helping out the less fortunate. It was heart-warming and humbling to see the recipients’ smiles when we delivered the goodie bags. I also appreciated the opportunity to interact with Keppelites from across the Group as we worked on this good cause together.”

### **HANDS-ON FUN**

Separately, Keppel Volunteers helped senior friends find a spring in their step by putting their

creativity to work at a ceramic-making workshop held at the Jalan Bahar Clay Studios on 27 February 2016.

Apart from unearthing their creative talents, the seniors and volunteers also enjoyed an educational tour of a traditional kiln based on a Chinese design that dates back thousands of years.

It was a truly hands-on and rewarding experience for the volunteers as they learnt both kiln molding skills and the art of conversation with the elderly.

# GLOBAL NETWORK

## SINGAPORE

**KEPPEL OFFSHORE & MARINE LTD**  
(Head Office)  
50 Gul Road, Singapore 629351  
Tel: +65 6863 7200 Fax: +65 6261 7719  
www.keppelom.com

**KEPPEL FELS LTD**  
(Pioneer Yard 1 – Head Office)  
50 Gul Road, Singapore 629351

(Pioneer Yard 2)  
55 Gul Road, Singapore 629353

(Shipyard Road)  
31 Shipyard Road, Singapore 628130

(Crescent Yard)  
60 Shipyard Crescent, Singapore 627735  
Tel: +65 6863 7200 Fax: +65 6261 7719

www.keppelfels.com  
Email: marketing@keppelfels.com  
Contact Persons: Wong Kok Seng, Managing Director  
Chris Ong Leng Yeow, Deputy Managing Director  
Keith Teo Tiong Gee, General Manager (Marketing)

**KEPPEL SHIPYARD LTD**  
(Tuas Yard – Head Office)  
51 Pioneer Sector 1, Singapore 628437  
Tel: +65 6861 4141 Fax: +65 6861 7767

(Benoi Yard)  
15 Benoi Road, Singapore 629888  
Tel: +65 6861 6622 Fax: +65 6861 4393

(Gul Yard)  
55 Gul Road, Singapore 629353  
Tel: +65 6861 3007 Fax: +65 6862 36457

www.keppelshipyard.com  
Email: ks@keppelshipyard.com  
Contact Persons: Chor How Jat, Managing Director  
Louis Chow Wai Laye, Executive Director (Commercial)  
Chin Sze Kiun, General Manager (Commercial – Repair)

**KEPPEL SINGMARINE PTE LTD**  
(15 Benoi Road – Head Office)  
15 Benoi Road, Singapore 629888  
Tel: +65 6861 6622 Fax: +65 6862 1792

(5 Benoi Road)  
5 Benoi Road, Singapore 629874  
Tel: +65 6861 6888 Fax: +65 6862 3491

www.keppelsingmarine.com  
Email: singmarine@keppelsingmarine.com  
Contact Persons: Abu Bakar Bin Mohd Nor, Managing Director  
Poon Tai Lum, General Manager (Commercial and Marketing)

**KEPPEL OFFSHORE & MARINE TECHNOLOGY CENTRE PTE LTD (KOMTECH)**  
31 Shipyard Road, Singapore 628130  
Tel: +65 6591 5450 Fax: +65 6265 9513  
Email: KOMtech@keppelom.com  
Contact Persons: Michael Chia Hock Chye, Managing Director  
Aziz Amirali Hasham Merchant, Executive Director  
Dr Foo Kok Seng, Executive Director  
(Shallow Water Technology)

**OFFSHORE TECHNOLOGY DEVELOPMENT PTE LTD**  
55 Gul Road, Singapore 629353  
Tel: +65 6863 7409 Fax: +65 6862 3465  
Email: enquiry@keppelotd.com  
Contact Person: Dr Foo Kok Seng, Executive Director

**DEEPWATER TECHNOLOGY GROUP PTE LTD**  
31 Shipyard Road, Singapore 628130  
Tel: +65 6863 7163 Fax: +65 6863 1739  
Email: aziz.merchant@keppelfels.com  
Contact Person: Aziz Amirali Hasham Merchant, Executive Director

**MARINE TECHNOLOGY DEVELOPMENT PTE LTD**  
31 Shipyard Road, Singapore 628130  
Tel: +65 6863 8344 Fax: +65 6261 7718  
Email: anis.hussain@keppelfels.com  
Contact Person: Anis Altaf Hussain, General Manager  
Email: aziz.merchant@keppelfels.com  
Contact Person: Aziz Amirali Hasham Merchant, Executive Director

**GAS TECHNOLOGY DEVELOPMENT PTE LTD**  
51 Pioneer Sector 1 Singapore 628437  
Tel: +65 6558 7620 Fax: +65 6558 7621  
Email: enquiry@keppelgtd.com  
Contact Persons: Charles Sim Paik Huat, General Manager  
(Offshore Production)  
Email: Charles.sim@keppelshipyard.com  
Andrea Gay Lee Bei Si, Senior Business, Development Manager  
Email: andrea.gay@keppelgtd.com

**KEPPEL SEA SCAN PTE LTD**  
55 Gul Road, Level 5, Singapore 629253  
Tel: +65 6262 6117  
Email: enghwee.gui@keppelseascan.com  
Contact Person: Gui Eng Hwee, General Manager

**ASIAN LIFT PTE LTD**  
23 Gul Road, Singapore 629356  
Tel: +65 6668 4222 Fax: +65 6668 4333  
Email: asianlift@asianlift.com.sg  
Contact Person: John Chua Bee Hin, General Manager

**KEPPEL SMIT TOWAGE PTE LTD**  
23 Gul Road, Singapore 629356  
Tel: +65 6668 4222 Fax: +65 6897 8056  
Email: kst@keppelsmit.com.sg  
Contact Persons: Pieter Van Stein, Managing Director  
Jerry Wong Yoke Min, General Manager

**AUSTRALIA**  
**KEPPEL PRINCE ENGINEERING PTY LTD**  
Level 2 Riverside Quays, 1 Southbank Boulevard  
Southbank, Victoria 3006, Australia  
Tel: +613 9982 4589, +614 1999 0788 Fax: +613 9551 0624  
Email: cchiam@ozemail.com.au  
Contact Person: Charles Chiam Toon Thong, Director

**AZERBAIJAN**  
**CASPIAN SHIPYARD COMPANY LLC**  
South Bay, KMNF Basin, Baku AZ1023, Azerbaijan  
Tel: +994 12 449 9930 Fax: +994 12 449 9931  
Email: csc@csc.az  
Contact Person: Lau Kwat Pin, CEO

**BAKU SHIPYARD LLC**  
Garadagh District, Salyan Highway 25th km  
Baku AZ 1083, Azerbaijan  
Tel: +994 12 446 4944, +994 12 446 4945,  
+994 12 446 4946 Fax: +994 12 446 4947  
Email: marketing@bakushipyard.com  
Contact Persons: Lam Khue Chong, General Manager  
Yu Cheng Hee, Senior Marketing Manager

**BRAZIL**  
**KEPPEL FELS BRASIL S.A.**  
Rua da Quitanda nº 86, Sala 301, 3º Andar,  
CEP - 20091 - 005, Rio de Janeiro, RJ, Brasil  
Tel: +55 21 2102 9400 Fax: +55 21 2102 9425  
Email: kaichoong.kwok@keppelfels.com  
Contact Person: Kwok Kai Choong, President & CEO

**ESTALEIRO BRASFELS LTDA**  
Av. Conde Mauricio de Nassau,  
S/n - Jacuacanga CEP - 23914 - 460 Angra dos Reis, RJ, Brasil  
Tel: +55 24 3361 6000 Fax: +55 24 3361 6258  
www.kfelsbrasil.com.br  
Email: marlin.khiew@keppelfels.com  
Contact Person: Marlin Khiew Huey Kang, President

**KEPPEL SINGMARINE BRASIL LTDA**  
Rua Prefeito Manoel Evaldo Müller  
3388 Bairro Volta Grande, Navegantes,  
Santa Catarina, Brasil, CEP 88371-860  
Tel: +55 47 3405 0160 Fax: +55 47 3405 0170  
Email: keehuat.loh@keppelsingmarine.com  
Contact Person: Loh Kee Huat, General Manager

**BULGARIA**  
**KEPPEL FELS BALTECH LTD**  
54 Debar Street, Varna 9000, Bulgaria  
Tel: +359 52 684 250 Fax: +359 52 684 252  
Email: office@fels.bg  
Contact Person: Lyudmil Stoev, General Manager

**CHINA**  
**KEPPEL NANTONG SHIPYARD CO. LTD**  
**KEPPEL NANTONG HEAVY INDUSTRY CO. LTD**  
No. 9 Yan Jiang Road, Nantong City, Jiangsu Province  
P.R. China 226005  
Tel: +86 513 8530 0000 Fax: +86 513 8530 0007  
Email: edmund.lek@keppelnantong.com  
Contact Person: Edmund Lek Hwee Chong, President

**KEPPEL FELS ENGINEERING SHENZHEN CO. LTD**  
3rd Floor, Chiwan Petroleum Building  
Chiwan Road No. 5, P.R. China 518068  
Tel: +86 755 26851902/+86 755 26851959  
+65 6863 7215 (Singapore Contact)  
Fax: +86 755 26851670  
Email: norman.chua@keppelfels.com  
Contact Person: Norman Chua Khuey Yong, Engineering Manager

**KEPPEL FELS ENGINEERING WUHAN CO. LTD**  
Blk 6 #05, Financial Harbor, No. 77 Optical Valley Ave  
Wuhan City Hubei Province, P.R. China 430070  
Tel: +86 27 59838598 / +65 6863 7215  
E-mail: reynard.xiao@keppelfels.com  
Contact Person: Reynard Xiao Peng, General Manager

**INDIA**  
**KEPPEL OFFSHORE AND MARINE ENGINEERING SERVICES MUMBAI PTE LTD**  
Unit 3&4, 8th Floor, Prism Tower-A, Mindspace, Link Road  
Goregaon (West), Mumbai 400 062, India  
Tel: +91 22 40018888 Fax: +91 22 40018898  
E-mail: kabeer.syedahamed@kommumbai.com  
Contact Person: Syed Ahamed Kabeer, General Manager

**INDONESIA**  
**PT BINTAN OFFSHORE**  
Jalan Nusantara KM 23, Kecamatan Bintan Timur  
Kabupaten Bintan, Propinsi Kepulauan Riau, Indonesia  
Tel: +62 771 462 699 Fax: +62 771 462 575  
Email: t.halim@keppelfels.com  
Contact Person: Thomson Halim, General Manager

**JAPAN**  
**REGENCY STEEL JAPAN LTD**  
46-59 Nakabaru, Tobata-ku,  
Kitakyushu, Fukuoka 804-8505, Japan  
Tel: +81 93 861 3103 Fax: +81 93 861 3114  
Email: chunyu.wong@r-sj.com  
Contact Person: Wong Chun Yu, President

## THE NETHERLANDS

**KEPPEL VEROLME BV**  
Prof. Gerbrandyweg 25, 3197 KK Rotterdam-Boitek  
Harbour no. 4550, P O Box 1001, 3180 AA Rozenburg,  
The Netherlands  
Tel: +31 181 234300 Fax: +31 181 234346  
www.keppelverolme.nl  
Email: mail@keppelverolme.nl  
Contact Person: Harold W.M. Linssen, Managing Director

## THE PHILIPPINES

**KEPPEL PHILIPPINES MARINE, INC**  
Unit 3-B Country Space 1 Building, Sen. Gil Puyat Avenue,  
Salcedo Village, 1200 Makati City, Philippines  
Tel: +63 2 892 1816 Fax: +63 2 815 2581  
www.keppelphilippinesmarineinc.com  
Email: mhq@keppelpm.com or commercial@keppelpm.com  
Contact Persons: Chor How Jat, Chairman  
Leong Kok Weng, President  
Stefan Tong Wai Mun, Executive Vice President

**KEPPEL BATANGAS SHIPYARD**  
Keppel Philippines Marine – Special Economic Zone  
Barangay San Miguel, 4201 Bauan, Batangas, Philippines  
Tel: +63 43 727 1532 to 36 Fax: +63 43 727 4885  
www.keppelphilippinesmarineinc.com  
Email: kbs@keppelpm.com  
Contact Persons: Leong Kok Weng, President  
Tan Geok Seng, General Manager

**KEPPEL SUBIC SHIPYARD, INC**  
Subic Shipyard – Special Economic Zone  
Cabangaan Point, Cawag, 2209 Subic, Zambales, Philippines  
Tel: +63 47 232 2380 or 6347 232 2710  
Fax: +63 47 232 3883 to 84 or +63 47 232 3350  
Email: all@subicship.com or commercial@subicship.com  
Contact Persons: Leong Kok Weng, President  
Ezra Chiam Soon Lin, Executive Vice President

**KEPPEL SINGMARINE PHILIPPINES, INC.**  
Dad Cleland Avenue, Loooc, Lapu-lapu City Cebu 6015  
Tel: +63 32 340 0866  
Email: kinho.aueyong@keppelsingmarine.com  
Contact Person: Au Yeong Kin Ho, President

## QATAR

**NAKILAT-KEPPEL OFFSHORE & MARINE LTD**  
Erhama Bin Jaber Al Jalahma Shipyard  
Southern Break Water, Ras Laffan Industrial City (RLIC)  
PO. Box 28388, Qatar  
Tel: +974 4419 7300 Fax: +974 4419 7301  
www.nkom.com.qa  
Email: commercial@nkom.com.qa  
Contact Person: Konstantinos Antonopoulos,  
Senior Commercial Manager

## UNITED ARAB EMIRATES

**ARAB HAVY INDUSTRIES PR.J.S.C**  
P O Box 529, Ajman, UAE  
Tel: +971 6 526 3232 Fax: +971 6 526 3233  
www.ahi-uae.com  
Email: marketing@ahi-uae.com  
Contact Person: Leong Siew Loon, Managing Director

## USA

**KEPPEL OFFSHORE & MARINE USA, INC**  
5177 Richmond Ave, Suite 1065, Houston, TX 77056, USA  
Tel: +1 713 600 8380 Fax: +1 713 600 8384  
Email: chingchuan.lai@keppelom.com  
Contact Person: Lai Ching Chuan, President  
Email: takon.cheung@keppelom-usa.com  
Contact Person: Cheung Tak On, Vice President (Technology)

**KEPPEL AMFELS, LLC**  
20000 State Highway 48, Brownsville, Texas 78521, USA  
Tel: +1 956 831 8220 Fax: +1 956 831 6220  
Email: simon.lee@keppelamfels.com  
Contact Person: Simon Lee Kim Foong, President

**BENNETT OFFSHORE (BENNETT & ASSOCIATES, LLC)**  
(Houston Office, HQ)  
5177 Richmond Ave, Suite 1188, Houston, TX 77056, USA  
Tel: +1 713 961 7737 Fax: +1 713 961 0861  
www.bennettoffshore.com

(New Orleans Office)  
1140 St. Charles Avenue, New Orleans, LA 70130 USA  
Tel: +1 504 561 8912 Fax : +1 504 581 3803

Email: marc.wong@bennettoffshore.com  
Contact Person: Marc Wong, President

**KEPPEL MARINE AGENCIES INTERNATIONAL, LLC**  
5177 Richmond Ave, Suite 1065, Houston, TX 77056, USA  
Tel: +1 713 600 8371 Fax: +1 713 600 8374  
Email: mike.holcomb@kmai-houston.com  
Contact Person: Michael Holcomb, President/Director  
Mobile: +1 713 816 0438  
Email: john.bajor@kmai-houston.com  
Contact Person: John C. Bajor, Marketing Manager  
Mobile: +1 713 922 3226

## VIETNAM

**KEPPEL FELS LTD**  
PetroVietnam Towers, Suite 410  
8 Hoang Dieu Street, Ward 1, Vung Tau City, S.R. Vietnam  
Tel: +84 643 850098 Fax: +84 643 850089  
Email: damien.ng@keppelfels.com  
Contact Person: Ng Seng Wai Damien, Country Manager



# First delivery of 2016

Keppel FELS has delivered Halul, a KFELS B Class jackup rig, to Gulf Drilling International Ltd. (q.s.c) (GDI) of Qatar. It was completed on 21 January 2016, 10 days ahead of schedule, on budget and with a perfect safety record. It is the first rig that Keppel FELS has delivered this year.

Halul is also the fifth KFELS B Class jackup rig delivered to GDI. With its continued successful partnership with Keppel FELS, GDI has renewed options for two more repeat KFELS B Class rigs for deliveries in 2018 and 2019.

Mr Wong Kok Seng, MD of Keppel O&M (Offshore) and Keppel FELS,

said, "We are proud to deliver another rig to GDI early and safely. This is our first delivery of the year and we are proud that the KFELS B Class continues to be the preferred rig in the market for its high quality, efficiency and safety.

"While there is widespread industry cautiousness, the strong relationships we have built with our long-standing customers, such as GDI, enable us to work together to deliver projects in a win-win fashion."

The KFELS B Class rigs have a strong track record for GDI. Sister rigs Dukhan and Al Zubarah are operating successfully for

Qatar Petroleum while Al Khor is performing well for Shell.

Mr Mubarak A. Al-Hajri, CEO of GDI, said, "We are pleased to receive the Halul ahead of schedule, enabling us to start work earlier for Qatar Petroleum. Reliability, safety, efficiency and quality are our top priorities in choosing a rig and a shipyard. Keppel FELS and the KFELS B Class design have demonstrated their strengths in these areas repeatedly. This is why we have chosen to renew our options for two more rigs with them. We are confident of the long term fundamentals of the industry and when the market recovers, we will be well-equipped to meet the demand."



Halul was completed 10 days ahead of schedule, on budget and with a perfect safety record. It will be the fifth KFELS B Class jackup rig to work for Gulf Drilling International

Built to GDI's requirements, the jackup rig has been designed to operate in the higher ambient temperature of the Middle East. The KFELS B Class is equipped with larger spud cans for reduced bearing pressure and expands its operational coverage in more places, especially in sea beds where soft soil is predominant. The rig can drill wells through 30,000 feet with a cantilever that can skid out 70 feet from the edge of the hull. It features offline stand building capabilities and 7,500 PSI mud pumps, with accommodation for 150 persons.

Besides newbuild rigs, Nakilat-Keppel O&M, Keppel's joint venture shipyard in Qatar, recently completed a self-propelled and self-elevating liftboat, Al Safliya, which is customised for GDI.