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# PEM Port Engineering Management

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**Front cover:** Hall Contracting is celebrating its expansion within the international market, having recently opened a new office in Kuala Lumpur. Managing Director Cameron Hall said it is the first branch to open outside of Australian borders since the company's Fiji office some years ago – an important milestone for the 68-year-old business.

## WELCOME

Welcome to the March/April edition of PEM (Port Engineering Management), which includes views from Paul Bartlett and Tony Slinn regarding the LNG bunkering and wind farm industries respectively – views from two very experienced journalists. Both industries are part of any port's future and as such are important to discuss.

This issue also looks at last year from the point of view of some of the world's major dredge contractors – it looks like they all have had a good year – and, hopefully, we will see another similar year this year.

**ALAN THORPE – EDITOR**

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# Viewpoint *by Paul Bartlett*

# Global LNG bunkering – not if, but when

**Just like the revolution which saw ships adopt steam and shun sail, global shipping is poised on the edge of a new era in propulsion – one in which many vessels are likely to be powered by liquid natural gas (LNG) instead of marine diesel or heavy fuel oil. This has far-reaching implications for the ports industry – LNG is a cryogenic liquid with specific and complex handling requirements and one in which few port authorities, as yet, have operating experience or appropriate emergency response procedures.**

**However, embracing this new technology offers a spectacular opportunity for proactive ports to help international shipping in its drive to become more 'sustainable'. Some might even argue that a failure to do so could leave some ports at a commercial disadvantage vis-à-vis their competitors. A number of the world's major ports in Asia, Europe and the Middle East are already making the necessary preparations, a clear sign that they expect a significant proportion of deep-sea vessels to be powered by LNG sooner rather than later.**

Viking Line's *Viking Grace* – a LNG-powered ferry operating in the Baltic

But there are still plenty of sceptics. So far, LNG propulsion has been adopted principally in Norway where the Government's NOx Fund provides grants for vessels which incorporate emission-saving technologies.The country has already developed national LNG marine transport fuel storage infrastructure. Cynics point out that LNG-powered ships cost considerably more than conventionally-powered vessels and argue that they would never have been built were it not for the state hand-outs.Towards the end of last year, DNV-GL listed 83 LNG-fuelled ships either already commissioned or planned. The class society estimates that the growth in LNG-powered vessels will climb exponentially with an estimated 3,200 ships likely to be commissioned by 2025.

There is already evidence that the world's key bunkering hubs are preparing to offer LNG as ships' fuel. The UAE's first land-based regasification plant received the go-ahead last November. The terminal will be located in Fujairah, an increasingly important oil storage centre and one of the world's most important bunkering ports. Meanwhile in Qatar, there are plans to build what is thought to be the first LNG-powered tug outside Norway for operation in the world's largest gas export facility in RasLaffan. The charterer – Qatar Petroleum – is likely to be paying a significant premium in charter rates to reflect the higher build cost of the vessel. But fuel savings in future should provide an attractive payback profile.

Whilst conceding that LNG as a fuel has undoubted merits from an environmental point of view, naysayers argue that LNG-powered

vessels are likely to be confined to specialist craft on a limited number of dedicated routes. LNG as a principal fuel for commercial shipping simply won't happen, they declare. But they are definitely losing ground. At a recent tanker conference in Copenhagen, one operator declared that his company was not even considering the possibility of LNG propulsion in its worldwide trading operation – LNG was not a runner on global routes, he said. Others in the room were almost incredulous. There are now clear signs that ship owners are preparing to adopt LNG as a fuel in ocean trades and their ports of choice will be determined by LNG infrastructure and the availability and convenience of suitable gas bunkering facilities.

So leaving aside short-sea and dedicated routes, what evidence is there so far to suggest that LNG will be adopted by ship owners in deep-sea trades? Well, perhaps one of the strongest indications is the decision by container shipping line UASC to stipulate that its newbuildings, under construction at Hyundai Heavy Industries in South Korea and classed by DNV-GL, should be built capable of easy retrofitting to LNG power, or 'LNG ready' as the classification society likes to say.

Following the exercising of an option earlier this year, the Arabian tanker now has 16 container ships on order at Hyundai – five 18,000 teu vessels and eleven 14,000 teu units. All will be LNG ready. Designed for speeds of between 16-18 knots, the ships will be deployed between Asia, the Middle East and Europe. The first units will be delivered later this year and through the course of 2015.

Meanwhile, in another pilot project which suggests 'not if, but when', Qatar's Nakilat is retrofitting one of its Q-max LNG tankers so that it will operate principally on LNG. The operator of the world's largest LNG fleet – with 58 vessels either directly owned or in partnership with others – Nakilat ships Qatar's gas exports from Ras Laffan to Asia and Europe. The gas tanker *Rasheeda* will have her existing MAN Diesel and Turbo low-speed diesel engines modified at her next survey at Qatar's Nakilat-Keppel Offshore Marine (N-KOM) shipyard in 2015.

There is certainly an extra cost associated with UASC's decision to adopt LNG-ready designs but this has not been revealed. Neither has the cost of Nakilat's retrofit pilot project. But both moves clearly signal that ship owners are prepared to pay a price up-front for fuel savings later. For ship operators whose vessels trade in emission control areas – of which more are planned – LNG as a fuel makes eminently good sense. It has a greater calorific content, has virtually no SOx, NOx or particulates, and contains significantly less carbon dioxide.

Providing appropriate LNG bunkering facilities is now a priority for many ports and terminals. A recently established working group, chaired by Belgium's Port of Antwerp, is examining the challenges of LNG bunkering and will develop guideline on safe procedures. The international group includes Amsterdam, Bremerhaven, Brunsbuttel, Gothenbury, Hamburg, Le Havre, Los Angeles, Long Beach, Rotterdam, Stockholm and Zeebrugge. Meanwhile Rotterdam has announced plans to invest in LNG bunkering infrastructure.

However, a leader in the field is the Maritime and Port Authority of Singapore, the world's largest bunkering port, which recently completed a study, together with Lloyd's Register, on the Technical Standards and Procedures for LNG bunkering in the Port of Singapore. The project covered such issues as bunkering standards and procedures, technical requirements and specifications for bunker tankers and receiving vessels, transfer systems, safety, emergency procedures and competency standards for personnel engaged in LNG bunkering.

Following the study's completion, the port authority is undertaking a period of industry consultation to gain feedback from the shipping sector. After that, it intends to set up appropriate bunkering infrastructure located close to the LNG import terminal which was commissioned last May. It has also agreed to harmonise its procedures with the ports of Antwerp and Zeebrugge in Belgium both of which are pursuing plans to develop their own LNG bunkering facilities. Joachim Coens, CEO of Zeebrugge has already revealed that the port is already building a jetty for LNG bunkering and pointed out that Fluxys's LNG terminal in the outer port of Zeebrugge is one of Europe's principal gas distribution hubs, handling 15% of all gas destined for the continent.

"Naturally Zeebrugge wishes to play a pioneering role in the use of LNG as a shipping fuel," Coens declared. "Together with Fluxys and various private partners, the port authority has been working for several years on a number of pilot projects for the introduction of LNG as a shipping fuel." He said that the port was developing facilities for loading LNG trucks and preparing for the construction of a LNG bunker barge.

Further north in Europe, Sweden's Swedegas and Vopak, the Netherlands-based global oil and gas storage firm are jointly spending more than $150m on a new LNG terminal in Gothenburg. Swedegas said in a statement that LNG bunkering would begin in 2015, with further expansion by 2017. Swedegas has also declared its intention to install LNG bunkering stations at other Swedish ports.

Meanwhile Chinese companies are already adopting dual fuel technology with an estimated 30 vessels now in operation and six 174,000 cubic metre dual-fuel LNG tankers due for delivery by 2017. The Government recent issued a statement in which it declared its objective of having 2% of the domestic inland fleet operating on dual-fuel systems by next year, with another target to raise the figure to 10% by 2020.

> There is already evidence that the world's key bunkering hubs are preparing to offer LNG as ships' fuel

Central to the Chinese plan is the so-called 'gasification' of the Yangtze, the world's third longest river. The Yangtze River Delta generates as much as 20% of China's GDP and in 2012, almost 1.8 billion tonnes of cargo were shipped on the waterway, three times more than the volume carried on the Mississippi and five times more than the cargo shipped on the Rhine. Last September, the first bunkering station on the Yangtze was established in Nanjing by Haiqi Ganghua Gas Development. China Gas Holding is also expected to start LNG bunkering operations on the Yangtze during the balance of this year.

In the US, Crowley Maritime's Seattle-based naval architecture and marine engineering firm Jensen Maritime has won a contract to design some of the first LNG bunker barges for LNG America LLC, a Houston-based LNG fuel supply company. There are no LNG bunker barges currently in operation on the US coast or along the country's waterways but plentiful supplies of cheap gas are likely to result in widespread adoption of LNG as ships' fuel.

The barges, with a capacity of 3,000 cubic metres and due to deliver in late 2015, will have two functions. They will be used to ship LNG from LNG America's Louisiana plant to coastal storage and distribution terminals and they will also be deployed in the bunkering of ocean-going merchant vessels. Naval architects at Jensen Maritime have developed a range of designs for LNG-powered vessels. These include prototypes for LNG bunker vessels, harbour tugs, articulated tug barges, container ships, tankers and a variety of inland vessels. **PEM**

# Comment *by Tony Slinn*

# Where the wind blows

**Offshore wind can and must make a substantial contribution to meeting the EU's energy policy objectives through a very significant increase in installed capacity – in the order of 30-40 times by 2020 and 100 times by 2030 – compared to today.**

**That was the European Commission's bold statement in 2008 following an assessment by the European Environment Agency (EEA) that concluded "Europe's offshore wind potential is enormous".**

**So where are we now, what plans are there for the future and what are the issues that need to be tackled or overcome? In this two-part feature we'll provide the answers.**

In 2009 the Renewables Directive set binding targets for all EU member states with the aim of generating 20% of energy from renewable sources by 2020. Wind power plays a huge role in that. Latest figures reveal that there's 117.3 GW of installed wind energy capacity in the EU – 110.7 GW onshore and 6.6 GW offshore. In total, given a normal 'wind year', all those turbines would produce enough electricity to cover 8% of the EU's consumption, up from 7% in 2012. Of it, 11,159 MW, worth between €13bn and €18bn, was installed during 2013, although that was a decrease of 8% compared to 2012, according to the European Wind Energy Association (EWEA).

"It shows the negative impact of market and regulatory forces, as well as the political uncertainty sweeping across Europe," EWEA states. "Destabilised legislative frameworks for wind energy are undermining investments".

Governments' and EU policies are a recurring theme having an impact not only on wind farm investments, but renewables generally. This year negotiations about EU energy and climate targets through to 2030 are set to start and it's likely Central and Eastern European member states will attempt to slow down the transformation process. Wind power remains the renewable technology installed the most in 2013, however – 32% of the total.

"Annual wind power installations have increased over the last 13 years, from 3.2 GW in 2000 to 11.2 GW in 2013, a compound annual growth rate of 10%," EWEA points out. Germany remains the EU country with the largest overall installed capacity, followed by Spain, the UK and Italy. Fifteen EU countries have more than 1 GW of installed capacity, including two newer EU countries – Poland and Romania – and eight EU countries have more than 4 GW of installed capacity. Offshore saw a record growth in 2013 (+1.6 GW), EWEA states, but adds a note of caution: "the outlook for 2014 and 2015 is stable, but not growing".

## Taking the lead

That said, Europe remains the offshore wind energy leader – the first offshore wind farm was built in Denmark in 1991. Today, in terms of installed offshore wind power generation, the UK is currently the world leader and also has over a third of Europe's capacity – with huge planned investments in the pipeline. But the outlook is not entirely rosy.

Power giant SSE announced in March this year that though it will maintain investment in the Beatrice offshore wind farm, it's decided not to proceed 'in the long-term' with its stake in two others (Galloper, where it has a 50% ownership stake, and Islay, 100%). Additionally, it's 'not able to make a long-term commitment' to Seagreen (50%), or Forewind (25%).

"This announcement demonstrates very clearly the need for the government to provide greater confidence for investors in its long-term support for Britain's offshore wind industry," commented RenewableUK CEO Maria McCaffery.

"The lack of clarity about the government's support for offshore wind past 2020 is in stark contrast to its support for nuclear where it's set out a clear package of financial support. If we could rely on more certainty and less risk, firm commitment to the huge financial investments involved would secure all the economic benefits of energy independence in a shorter timescale," she added.

Formed in 1978 and the trade and professional body for UK wind and marine renewables industries, RenewableUK has nearly 600 corporate members – and McCaffery wasn't entirely downbeat.

"We've just had the good news that Siemens and Associated British Ports [ABP] will be creating at least 1,000 jobs in East Yorkshire, revitalising the Alexandra Dock at Green Port Hull and manufacturing offshore wind turbine blades. However, if we want to see more manufacturers basing themselves in the UK, they need to know that there will be a long-term market up to 2030 and beyond.

"Although it's disappointing that one of SSE's offshore wind projects won't be going ahead, there are other major stakeholders involved in the other three projects. Changes to the investment partners in such huge projects is not uncommon, as we saw in December, when DONG Energy acquired Centrica's stake in Race Bank offshore wind farm, and earlier when Masdar bought Shell's share in the London Array, now operational and acclaimed as the world's largest offshore wind farm.

"Overall, we still have a busy and dynamic offshore sector," McCaffery continued. "The UK has 22 offshore wind farms currently operational, five under construction and nine with planning consent. We've installed 3,653 MW of wind energy in UK waters – enough to power more than two and a half million homes and cement our world leadership position in this technology. Almost 15,000 MW more is currently in the pipeline".

True, but the volatility across Europe that EWEA noted has contributed to 46% of all new installations (onshore and offshore) in 2013 being in just two countries – the UK, where total capacity was rated at 10,495 MW In January this year, and overall EU leader Germany, which has nearly 34,000 MW.

"It's a significant concentration compared to the trend of previous years whereby installations were increasingly spread across healthy European markets. This is a level of concentration that has not been seen in the EU's wind power market since 2007 when the three wind energy pioneering countries, Denmark, Germany and Spain, together represented 58% of all new installations that year. Previously healthy markets, such as Spain, Italy and France, have seen their rate of wind energy installations decrease significantly in 2013, by 84%, 65% and 24% respectively," EWEA notes.

## Ports

As befits offshore wind farm pioneer Denmark, its Port of Esbjerg "has adopted a new role and has developed into Europe's leading port for shipping offshore wind turbines," states the country's official website, http://denmark.dk

"The port has accounted for two thirds of the 3 GW of offshore wind power so far installed in Europe and in addition, 65% of all Danish wind turbines have been shipped from Esbjerg – which has also been used to ship components to a number of offshore wind farms including the UK's Lincs, Gunfleet Sands and London Array".

Esbjerg had a head start, but it's also well-positioned in relation to Denmark's wind energy industry companies, most of which are concentrated in the western/south-western region of the country. As the industry moves forward, the port aims to strengthen its position as "a focal point for the establishment, operation and maintenance of the many wind farms that will be installed in the North Sea in the years ahead".

Independent forecasts bear that out: the North Sea is expected to maintain its position as the world's leading area for offshore wind for some time to come, with around 10,000 turbines planned for installation in the next decade alone. Today's 3 GW should rise to around 30GW by 2020 and could rise to 150GW by 2030, if EU and European Wind Energy Association targets are to be met. And Esbjerg is centrally placed in relation to Danish, British and German plans for that expansion.

In common with other traditional offshore companies, major European and global offshore player Semco Maritime, which has its HQ in Esbjerg, has gained an advantage from the fact there are many similarities between the offshore oil & gas industries' technologies and skills and those needed by the offshore wind industry.

"For decades, we've built up major competences in offshore activities in the area around Esbjerg, and in recent years we've started to transfer some of the competences from oil and gas to the offshore wind industry," commented Semco MD Steen Brødbæk. "Both industries operate in the same marine environment, where stormy weather and the extreme saltiness of the air present particular challenges. There are also parallels in construction and maintenance, and similarities regarding electrical infrastructure."

Brødbæk is a member of the steering committee of Esbjerg's new Green Offshore Centre, a strategic alliance of 12 offshore companies aiming to further strengthen Denmark's competences and special position. The alliance includes DONG Energy, which has installed five of the world's ten largest offshore wind farms and is the world's largest offshore wind farm operator.

The aim is to "create an international beacon of knowledge and innovation in planning and design, installation, operation and maintenance of offshore energy facilities," and grow the member companies to 40 – not just in in offshore wind, but wave power and other forms of energy derived from the sea. More about the EU's plans and its Strategic Ocean Initiative on that facet of renewables in part two.

Of course, other ports offer offshore wind farm services in Denmark, including Aalborg, Thyborøn and Rønne, and around northern Europe, ports have not been slow to ramp up services, including:

- Amsterdam, Delfzijl, Eemshaven, Terneuzen and Schiedam in the Netherlands
- Ostend's Rebo terminal as well as Zeebrugge in Belgium
- Le Havre in France
- Sassnitz on Rügen Island, Bremerhaven, Cuxhaven, Emden and Wilhelmshaven in Germany
- And in the UK, ABP has set up a special contact point – offshorewind@abports.co.uk – for interested parties, their ports including Barrow, Lowestoft, Grimsby, Hull, Swansea, Southampton, Newport, Immingham and Fleetwood. Among many other non-ABP ports, the list also includes Great Yarmouth's new EastPort and Ramsgate. **PEM**

## More follows

In the next issue we'll look at recent and planned contracts, the major contractors, delve deeper into the issues – including possible fallout from the Ukraine crisis as well as rival marine renewable technologies – and look at plans for the next stage, a 'super grid' designed to connect all Western Europe's offshore wind farms.

It won't matter where the wind blows, as long as it's blowing somewhere energy can be fed into that grid.

## The top ten

**The following countries boast the most wind-generated capacities in terms of output in megawatts – figures rounded**

China – over 90,000
USA – about 60,000
Germany – nearly 34,000
Spain – 23,000
India – 20,000
UK –10,500
Italy – 8,500
France – 8,250
Canada – 7,800
Denmark – 4,750

*Source: The Wind Power (www.thewindpower.net)*

## The offshore heavyweights

**The world's ten largest offshore wind farms in terms of capacity, six of them in the UK, are:**

1. London Array, UK – 630 MW from 175 Siemens turbines capable of generating enough energy to power nearly 500,000 homes
2. Greater Gabbard, UK – 504 MW from 140 Siemens turbines
3. Anholt, Denmark – 400 MW from 111 Siemens turbines
4. BARD 1, Germany – 400 MW from 80 BARD turbines
5. Walney, UK – 367 MW from 102 Siemens turbines
6. Thornton Bank, Belgium – 325 MW from 54 REpower turbines
7. Sheringham Shoal, UK – 315 MW from 88 Siemens turbines
8. Thanet, UK – 300 MW from 100 Vestas turbines
9. Lincs, UK – 270 MW from 75 turbines
10. Horns Rev II, Denmark – 209 MW from 91 Siemens turbines

*Source: Wikipedia*

## EU Figures

**Total wind-generated capacity at the end of 2013 in megawatts**

Austria – 1,684
Belgium – 1,651
Bulgaria – 681
Croatia – 302
Cyprus – 147
Czech Republic – 269
Denmark – 4,772
Estonia – 280
Finland – 448
France – 8,254
Germany – 33,730
Greece – 1,865
Hungary – 329
Ireland – 2,037
Italy – 8,551
Latvia – 62
Lithuania – 279
Luxembourg – 58
Malta – 0
Netherlands – 2,693
Poland – 3,390
Portugal – 4,724
Romania – 2,599
Slovakia – 3
Slovenia – 2
Spain – 22,959
Sweden – 4,470
UK – 10,531

*Source: European Wind Energy Association*

# Port News

Berths 8 and 9 at Felixstowe

## Quay extension at the Port of Felixstowe

The Port of Felixstowe has received consent from the Marine Management Organisation (MMO) for the extension of its newest container handling facility, Berths 8 & 9. The expansion marks yet another milestone to increase the port's ability to berth the next generation of mega vessels.

Commenting on the latest development at the port, Clemence Cheng, Chief Executive Officer of HPUK, said, "We welcome MMO's decision to consent to the extension of Berths 8 and 9 by 190 m at the Port of Felixstowe. This scheme represents the latest in a long line of investments by HPUK at the Port of Felixstowe. We opened Berths 8 & 9 in November 2011 and this new extension will allow us to offer more berth-windows and greater flexibility to our customers. This is an important investment as it will increase our ability to berth a greater number of the very largest container vessels in the future."

Port of Felixstowe, the Port of Britain, is the only Port in the UK to have handled the 18,000 teu class, the biggest container vessels in service, recently introduced on the Asia – Europe trade.

Clemence Cheng added: "Our commitment to a programme of continuous investment has helped secure our position as the Port of Britain. This latest phase of development is designed not only for the latest generation of container vessels, but for those that will follow them in future. With a design depth of up to 18 m alongside, and cranes able to span 25 containers across a vessel, this facility gives our customers confidence in our ability to deliver for them in the long term."

Work on the new quay will commence as soon as possible and it is scheduled to be operational in 2015. The quay extension will take the total berth length for container vessels at Felixstowe to over 3,250 m, serviced by 37 ship-to-shore gantry cranes.

## Port of Tyne upgrades its Warehouse Management System

Managers at the Port of Tyne – one of the UK's oldest deep sea ports – have seen a significant reduction in stock processing times, after installing the latest version of OpenWMS, a warehouse management system from Advanced Business Solutions (Advanced).

The updated system is already saving the organisation approximately 120 man hours a week through a combination of automated, more efficient working processes and has also enabled Port management to put a third shift on hold. In total the new system is saving the port around £70,000 a year.

The North East port, which provides the UK shipping industry with access to vital trade routes across the globe, has benefitted from OpenWMS since 2001. Senior managers recently decided to upgrade the software to support the business's efficiency drive, and to improve key elements of their warehouse management processes.

The upgrade included a new billing module, which fully automates customer charging processes and significantly reduces time spent on administration. The incorporation of the module into the wider WMS system has also eliminated the possibility of human error, and is consequently providing reassurance to both the Port's management team and customers that the billing process is accurate.

Graeme Hardie, Head of Operations Logistics at Port of Tyne, said: "Previously, we used manual processes when it came to charging customers and we had concerns that we were not capturing everything. The original system was vulnerable to human error but now everything is automated so we capture charges in real time. We have better visibility and can see and monitor our incomes instantly.

"We also wanted the billing module to reassure our customers that we are billing them correctly. The WMS has really helped us improve the accuracy of our record keeping by replacing manual data entry with automated scanning."

Prior to the upgrade, pallets were unloaded by a warehouse operative and contents were manually recorded on a 'goods in' product sheet. The details were then passed to an administrator for data entry purposes.

The new system, which includes Radio Data Terminal (RDT) label printing, has streamlined this process. Once the pallets have been unloaded from the vehicle, the contents are logged via a handheld device, which is also capable of printing off a barcoded label, capturing the key data. At this point the pallets are ready for warehouse storing.

Graeme Hardie added: "The new software effectively gives the operator complete control – pallets are logged automatically on to the system and stored away in minutes. This is where we have seen significant savings. We now have a streamlined operation which has increased our capacity and enabled us to be much more productive, hence we have been able to eliminate the night shift requirement at peak times.

"We now have complete confidence in our system and much better visibility of our stock control. We have 53,000 pallet locations – so knowing the contents and location of each pallet is extremely important to us as well as our customers."

Port of Tyne managers are now looking at introducing advanced software to link their transport and container terminal management databases with their transport system. The organisation expects the integration to significantly improve collaborative working.

## A cleaner Port of Gothenburg

The Port of Gothenburg's campaign for a cleaner shipping industry is continuing to bear fruit. During 2013, 49 vessels took part in the programme. In total, they saved 120 t of sulphur emissions.

Shipping companies that switch to marine gas oil, LNG or another similar fuel with a maximum of 0.1% sulphur content while operating in the Port of Gothenburg can take part in the environmental campaign. They will be rewarded with up to SEK250,000/year/vessel.

In total, SEK4m was paid out during 2013 as part of the environmental campaign. The goal is to reduce emissions from shipping in Gothenburg and to facilitate preparations in the lead-up to the new EU Sulphur Directive, which will come into effect in 2015. The campaign is funded through the port charge, which for many years has meant payment of a surcharge if a ship's fuel sulphur content exceeds 0.5%.

"In 2013, the campaign resulted in savings of 120 t of sulphur emissions, which is 13 t more than in 2012", says Anna Jivén, acting Environmental Manager at the Port of Gothenburg.

B-Gas took part in the campaign in 2013 with nine vessels. "We want to support innovative initiatives related to a cleaner environment and it felt perfectly natural to be

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The Port of Gothenburg

part of the Port of Gothenburg work in this area," says Kim Kristensen, President of B-Gas.

The environmental programme is subject to strict controls. The Port of Gothenburg is co-funding a study currently being conducted at Chalmers University of Technology where a research group at the Department of Earth and Space Sciences is monitoring vessels entering or leaving the port.

"Flue gas plumes are analysed via a measuring station located on the roof of the Älvsborg fortress. This allows us to measure the level of sulphur in the fuel and to determine how effective the sulphur programme actually is," says Anna Jivén.

Shipping companies participating in the Environmental Campaign 2013

- Thun Tankers – 13 vessels
- Maersk Sverige – 13 vessels
- B-Gas – 9 vessels
- Stena Oil – 6 vessels
- Topoil – 4 vessels
- Scandinavian Shipping – 3 vessels
- OW Bunker – 1 vessel

## CH2M HILL to supervise Gdansk Deep Container Terminal expansion

CH2M HILL has won a contract to provide supervision services for the expansion of the Deep Container Terminal (DCT) facilities in Gdansk, Poland. In addition to supervising the operation CH2M HILL will assist on construction advisory, contract engineering and procurement.

The Gdansk Deep Container Terminal is Poland's sole deep-sea terminal and since it began operating in 2007 has been a vital piece of infrastructure for Poland. As part of the £1.4m works package, CH2M HILL will provide supervision services to create an additional 666 m of quayside and substantial development of the container handling and storage facilities. The project will be delivered by a multi-disciplinary, cross business group team based in Poland and the UK.

The contract includes design works, preparation of contract documentation, assisting in the tendering process and supervising contractors. The design phase is expected to last for eight months whilst the construction period is scheduled for 24 months.

The role of DCT Gdansk as the Baltic Sea hub has grown over the last three years and the client's strategic goal is to develop its function to become the largest container hub in the Baltic Sea. This development will ensure the port remains one of the busiest in Europe and will benefit from a considerable increase in capacity as a result of the works.

Vice President Director of Operations in Poland, Ruben Robles, said: "This is a great win for CH2M HILL. The Gdansk Deep Container Terminal is a hugely important piece of infrastructure for Poland and has experienced significant growth since it began operating in 2007.

"We will provide supervision services for the design, procurement and contracting phases

of these works to help develop this terminal's function and cements its position as one of the busiest ports in the Baltic Sea and across the whole of Europe."

## Good 2013 for Hamburg

During 2013 the Port of Hamburg achieved total throughput of 139m t, which represents growth of 6.2%. Both general cargo handling totaling 96.8m t (+ 5.7%) and bulk cargo handling at 42.3m t (+ 7.2%), ensured above-average growth for Germany's largest universal port.

The container handling was the principal source of this growth. With throughput of 9.3m teu, the increase in container traffic reached 4.4%. This was primarily attributable to growth in transshipment services into the North Sea and Baltic region that were 10% higher, plus the onset of a recovery in container traffic with Asia, and especially with China, Hamburg's largest partner on the market.

"We need to stress to the public in general that the infrastructure for traffic into and out of the seaports lies in the interest of the entire national economy. We are therefore relying on a positive decision this year by the Federal Administrative Court in Leipzig on the deepening of the navigation channel on the Lower and Outer Elbe.

Countrywide, around 260,000 jobs, of which 110,000 are outside the Hamburg Metropolitan Region, are linked directly or indirectly with the Port of Hamburg. In addition, almost €20bn of added value countrywide underlines that the Port of Hamburg's significance reaches far inland. On the construction of the Y-shaped rail link as well as the extension of the A20 and A21 autobahns, we all need to pull together. Championing improvement of the infrastructure should not be seen as North German folklore, but considered in connection with its relevance for the entire Federal Republic. Also part of the equation is the Port of Hamburg's significance for the seaborne foreign trade flows of our European neighbours," stressed Port of Hamburg's Ingo Egloff.

## Focus Maritime to promote Port of Halifax across Europe

Liverpool-based maritime advisory firm and consultancy Focus Maritime (North West) Limited has been appointed to promote Canada's Halifax Port Authority across Europe.

The move by the Nova Scotia-based authority is aimed at strengthening its presence across the continent and sees Liverpool-based Graham Fraser take on the role of director, business development and growth – Europe.

Strategically located as North America's first inbound and last outbound gateway, the Port of Halifax is a deep, wide, ice-free harbour. It is one of just a few eastern seaboard ports able to accommodate and serve post-Panamax container vessels.

Connected to virtually every market in North America, the Port of Halifax is served by CN Rail and supports container, bulk and break-bulk cargo facilities with direct access to rail.

George Malec, vice-president, business development and operations with Halifax Port Authority, said: "We are pleased that Graham has joined the Port of Halifax team.

"With wide experience across all sectors of the industry and deep knowledge of European and North American markets and operations, he will further enhance the position of the Halifax Port Authority in Europe, with carriers, shippers and freight forwarders."

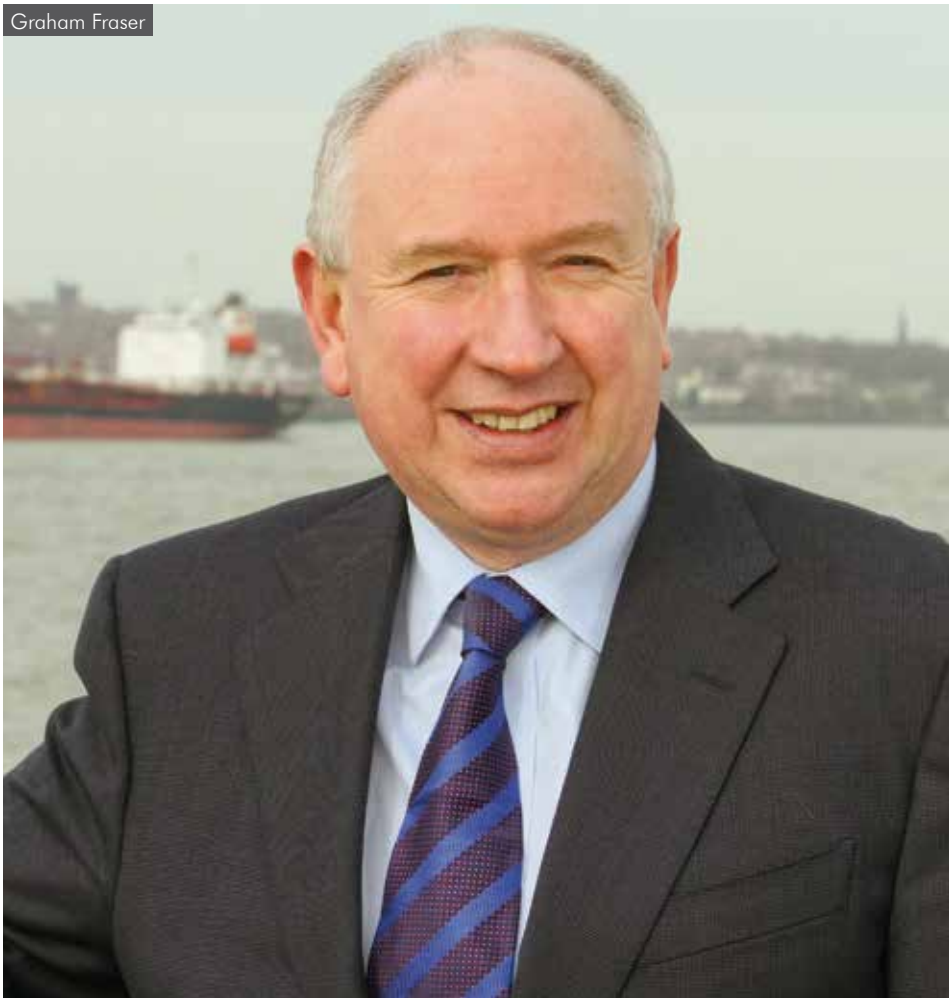
Mr Fraser has 30 years' experience in shipping and has held senior commercial, operational and planning management positions at CMA CGM, CSAV, Kent Line Limited and Kent Line International, Contship Container Lines and Canada Maritime. He founded Focus Maritime (North West) in Liverpool in 2012 and has since developed a portfolio of partners in the transport, banking and manufacturing sectors.

He said: "I am very much looking forward to working with the Halifax Port Authority team in Europe to develop and grow business through the port and the wider Halifax gateway.

"Having lived and worked in eastern Canada for a number of years, I am particularly pleased to be representing the Port of Halifax with which I have strong affinity. My initial focus shall be in the non-containerised sector together with shippers and forwarders and I am keen to start building new partnerships in Europe."

Mr Fraser commenced his career at sea with Liverpool's Bibby Bros, sailing as a second officer and serving as a sub-lieutenant in the Royal Naval Reserve (Seaman Branch).

He has a BSc (Hons) in Maritime Commerce from the University of Wales, Cardiff, and an MBA from Cranfield School of Management. He is also a member of trade association Mersey Maritime. **PEM**


Graham Fraser

# Port Equipment

Gemport

## Yilport selects APS Technology Group's

APS Technology Group (APS), a member of the ABB Group and a leading provider of optical character recognition (OCR) and process automation solutions for marine and intermodal container terminals, has announced that Yilport Holding has selected its gate automation and operating solutions for four multipurpose ports it operates in Turkey. Yilport will also implement the APS automated container identification and handoff solutions at the quay using crane OCR at its facilities in Gebze, as well as at its new terminal, Gemport, under construction in Gemlik.

Yilport is a leading provider of container, general cargo, bulk and liquid cargo handling and warehouse services, and plans to improve operational productivity, safety and security by deploying APS solutions across its cargo facilities including Gebze, E5, Yarmica and Gemlik. The APS solution allows Yilport, as the first terminal operator in Europe and the Middle East, to manage exceptions across all gates and cranes at multiple terminals from one central and remote location in real time. The solution also provides full support for Yilport's enterprise reporting.

Sean Pierce, CEO of Yilport Holding said: "We are focused on the continued expansion of the Yilport portfolio of terminals with the aim of being a top-ten global port operator. We will be able to realise this vision by investing heavily in people, facilities, equipment and by employing state-of-the-art technologies. APS is a key partner. Their solutions will support our growth through increased automation of our processes and by providing accurate and timely information to all our valued customers. Like our customers, we require the high level of accuracy and dependability that APS can deliver."

"We are excited to extend our partnership with Yilport. Their use of remote exception management across multiple terminals and multiple nodes is a game changer for the industry," said Brian Shultz, Vice President of Sales and Marketing for APS. "Yilport control clerks will be able to manage exceptions across all of their gates and cranes from one central and remote location."

## MacGregor receives an order from Indonesia

MacGregor, part of Cargotec, has won an order for two 50-t SWL versions of its heavy-duty grab cranes. The K5036-4HD MacGregor cranes are destined for a 68m floating crane barge, which is being built by Batam-based PT. Karya Tekhnik Utama (KTU), in Indonesia.

"Indonesia has one of the world's fastest growing bulk export industries, and this order further increases our presence in this significant market," says Anders Berencsy, Sales Manager for Transloading cranes at MacGregor. "The floating barge will be used to showcase the yard's capabilities and the cranes will be an important part of this.

"Historically, KTU has used other manufacturers for this type of crane, but has decided to install MacGregor cranes for the first time," notes Mr Berencsy. "This is an important vote of confidence both for the K50 model and for the quality of the products and services delivered by MacGregor."

Offering a long, reliable service life, MacGregor's K50 cranes were developed to meet the market's increasing demand for high-performance bulk handling capabilities. The company's first units of this type were delivered to Indonesia in 2011. The latest order is scheduled for delivery in November this year.

## Adelte wins eight contracts

Adelte, formerly known as Team, has recently won eight contracts for the supply in 2014 of a total of eleven tailor-made Sea Passenger Boarding Bridges (SPBBs) to the ports of

Rotterdam, Stornoway, Swinoujscie and Ullapool in Northern Europe, Denia and Savona in Southern Europe and Busan and Singapore in Asia.

Adelte has been awarded a contract by the Rotterdam Port Authority to install this summer a new Kronus SPBB, which will replace the current system. Rotterdam is increasingly gaining importance as a popular home port and port of call. In view of this, as well as of the arrival of the *Oasis of the Seas* in September this year, the port is renovating its cruise terminal facilities to offer the maximum security and comfort for its cruise guests. A short delivery term, superior design and technology and an excellent service were key factors for winning this contract.

Adelte has also won two contracts for Thalassa SPBB installations in Scotland. This summer Caledonian MacBrayne will place a new ferry, the *Loch Seaforth*, into operation for the crossing between Ullapool on the mainland and Stornoway on the Isle of Lewis. To facilitate smooth, safe and secure operations, the terminal installations at both harbours are being upgraded. Adelte received a contract from Caledonian Maritime Assets Limited (CMAL) and Ullapool Harbour Trust to deliver a Thalassa SPBB at the ferry terminal in Ullapool Harbour, and from construction company BAM Nuttall a contract to deliver a similar, but larger system at the ferry terminal in Stornoway. The Thalassa boarding bridges will have the ability to serve at dock level, absorb big tidal variations and operate with very strong service winds. Ullapool unit will be equipped with a wind turbine which supplies energy to the outer lights. Adelte has currently a total of 8 boarding bridge installations in the United Kingdom, in operation at the cruise and ferry passenger terminals of Harwich, Portsmouth and Southampton.

Polish construction company Budimex are to deliver in the autumn a Hydra SPBB on the new ferry berth at the port of Swinoujscie. The SPBB will serve ferries which sail to the port of Ystad in Sweden of up to 220 m in length and ensure total comfort and safety for passengers.

Adelte also received an order from Italy's Costa Crociere to install a new Hydra SPBB at the new cruise terminal, currently under construction, of the Italian port of Savona. Costa has relied for more than a decade on Adelte's expertise and state-of-the-art technology for its cruise terminals in Spain and Italy. The first SPBB contract for a Costa cruise terminal was signed in 2002 when two Pegasus PBBs needed to be installed in Savona.

The Spanish ferry company Balearia very recently contracted Adelte to deliver a Pegasus SPBB at their new ferry terminal facilities in the port of Denia. The new SPBB will connect with a fixed elevated walkway leading to the ferry terminal. Balearia's ferry vessels sail from Denia on the Spanish mainland to the Balearic Islands of Ibiza, Mallorca and Formentera. Balearia has previously contracted Adelte for SPBB installations in the port of Barcelona.

SATS – Creuers has commissioned Adelte to design, manufacture, transport and install a fourth Sedna SPBB at Singapore's Marina Bay Cruise Terminal. This SPBB, scheduled to be delivered in the last quarter of 2014, will be added to the other three Sedna units which were installed in 2012.

Adelte will design four new Kronus SPBBs, to be commissioned by the Busan Port Authority. These telescopic bridges are similar to the Apron Drive systems used in airports, which offer a great range of services. They are moveable and allow elevation and radial drive. Equipped with Adelte's sophisticated docking cabin, capable of following ship movements, as well as with the latest technologies, Busan's new ferry terminal will guarantee the best embarking and disembarking experience for all passengers. The four SPBBs, equipped with air conditioning systems, will be delivered and assembled at the same time.

In addition to the fore mentioned contracts for the delivery of SPBBS, Adelte's Global Services team has also secured annual maintenance services contracts for the boarding bridges at the Kai Tak Cruise Terminal in Hong Kong, the Marina Bay Cruise Centre in Singapore, the Cruise Centre II in Hamburg, the Ostseekai and Schwedenkai terminals in Kiel, the Cruise Terminal in Rotterdam, the Half Moon Cruise Centre in Norfolk and all the cruise terminals in Barcelona. Furthermore, the Global Services team is also contracted to provide maintenance services for all boarding bridges, not manufactured by Adelte, at the cruise and ferry terminals in the port of Genoa.

The Adelt SPBB

## News from Kalmar

Kalmar, part of Cargotec, has completed the project to increase the lifting height of two Kalmar rubber-tyred gantry cranes (RTGs) for Terminal Pacifico Sur Valparaíso S.A. (TPS) in Chile. The contract was signed in September 2013 and the upgraded cranes were commissioned and operational in mid-January 2014, ahead of schedule. Following the successful project, TPS has awarded Kalmar with a project to heighten further ten RTGs. The contract was signed in February 2014.

TPS is one of the two most important container terminals in Chile, playing a key role in the import/export trade with USA and Asia, and is gearing up for expansion. The innovative RTG heightening solution, provided by Kalmar's specialist Crane Upgrades team, effectively increases the crane stacking height from five containers to six and enables the terminal to increase its yard stacking capacity by 20%. This is a solution that is particularly suited to terminals where space is at a premium.

Kalmar will introduce a new G-generation electric forklift at CeMAT, in Hannover, Germany, this May. The forklift, entering the 5-9 t counterbalance market, boasts features that significantly reduce the cost of ownership whilst improving safety and environmental performance.

The G-generation concept, already implemented in Kalmar's DCG90-180 forklift and DRG450 reachstacker, improves the synchronicity between truck and driver, increasing the operators' productivity and reducing costs of ownership. Most notably, the new electric forklift will feature Kalmar's EGO cabin. Markedly different to its predecessor, the EGO cabin features major upgrades to ergonomics and

The Kalmar RTG

visibility, securing its position as one of the best operator environments on the market.

The new electronic system features a number of energy-saving modes. Power mode optimises the truck for performance while boosting productivity. Normal mode optimises for productivity and economy mode optimises for lowest cost operation, delivering up to 10% energy savings.

Kalmar has also been awarded a ship-to-shore (STS) crane refurbishment project by the Belawan International Container Terminal (BICT) in Medan, Indonesia. The contract was signed in December 2013, and the project is expected to be completed in August 2014.

BICT is managed by Pelindo I, one of four state owned Indonesian terminal operators. The terminal, located on the island of Java, serves the Straits of Malacca, the busiest shipping lane in the world.

The project involves the refurbishment of a Nelcon STS crane, with scope of work including the replacement of the electrical control system (PLC and DC drives), main dynamic brakes, wire ropes, spreader pulley sheaves and headblock. The scope also includes repair works for the DC motors and festoon system.

## Kalmar undertakes project at the Port of Felixstowe

Kalmar, part of Cargotec, has gained a contract to convert four rubber-tyred gantry cranes (RTGs) to full electrification for Hutchison Ports UK (HPUK) at the Port of Felixstowe, UK. The project is the first of its kind in Western Europe. The contract was signed in September 2013 and installations will commence in the second quarter of 2014.

Effectively a pilot project, Kalmar's specialist Crane Upgrades team will handle the complex engineering task which includes provision of the electrical services infrastructure for two RTG container blocks, each with a length of 217 m. A full turnkey project, Kalmar will handle the RTG modifications, integration of an automatic drive-in collector unit, operator controls, conductor bars and the steel structure installation. Additionally, two 217 m container blocks will be converted to house the electrical infrastructure, including substations required to connect the cranes to main power grid. The objective of the electrification is to reduce the fuel costs and lower the emissions of the RTG fleet.

Dave Patterson, Market Area Director UK & Ireland at Kalmar, said: "We are very pleased that we complied with the requirements of HPUK's competitive tender process and were able to collaborate with them on this exciting project. Kalmar has all the specialist engineering resources in house to manage the integration of this type of procedure for all crane brands. Our objective is to minimise risk and maximise performance which represents an excellent return on investment for our customers." **PEM**

The Port of Belawan

# Fenders

## Fendercare Marine secures contracts with UK MoD and LNG (STS) facility

Norfolk based Fendercare Marine, one of the world's foremost suppliers of marine products and services, has won a significant contract to supply Yokohama fenders to the UK Ministry of Defence (MoD).

The three year contract is for the supply of 3.3 m x 6.5 m Yokohama original pneumatic fenders. Fendercare Marine has supplied 18 of the fenders to date, with potentially more to follow. Fendercare Marine has been working closely with the MOD to design a protective tyre net which would not only be non-marking to the ship's hull but would provide minimal fender maintenance issues.

Fendercare Marine has been a supplier of fenders and marine hardware to the MoD since 1999 and also supports navies throughout the world, winning a $29m contract with the US Navy in 2012. From a base in the Devonport Royal Dockyard in Plymouth, their Naval Solutions division also provides fabrication, welding and coating services for the MoD, having worked on nuclear submarines, warships and naval support vessels.

Sonia Crane, Fendercare Marine Sales Manager commented, "We are delighted to have secured this contract with the Ministry of Defence. Our 15-year relationship with the MoD is one that we really treasure and this contract is further evidence of our commitment to supplying reliable and innovative products, supported by excellent customer service."

Fendercare Marine, is also a global leader in Ship-to-Ship (STS) transfers and offshore marine services, and has provided STS support services for the first open sea's LNG STS operations for two of the world's leading Gas Majors.

Fendercare Marine has carried out STS operations since 1995 and annually conducts almost 3,000 STS operations globally from over 45 STS locations across the world. The LNG STS operations were performed in the Eastern Mediterranean with a number of 152,000 $cm^3$ membrane tank LNG tankers, and most recently a 135,000 $cm^3$ Moss-type tanker; all delivering cargo to one of Excelerate Energy's 138,000 $cm^3$ Floating Storage & Regasification Units (FSRU). These were the first open sea LNG STS operations for either major.

Fendercare Marine is the world's largest operator of genuine Yokohama brand pneumatic fenders and supplied Yokohama Jumbo fenders for the operations, in conjunction with additionally supplied ship-specific mooring equipment and a dedicated rigger to assist with the secure mooring and unmooring of the oil major LNGCs. Furthermore, two large ASD tugs provided assistance as well as guard duties ensuring the operations were executed without interruption.

Fendercare Marine facilitated sessions in its UK simulator to mirror the predicted sea states they would face which, in turn, provided the necessary feedback to assist in tailoring a mooring system to suit. Further simulator sessions allowed for extensive testing of various emergencies break away situations.

In addition to STS services, Fendercare Marine offers a turnkey service for the operation and management of onshore and offshore marine terminals, supplying pilotage and Mooring Master provision for tandem and CALM buoy berthing, CALM buoy inspection and maintenance, product supply, AHT provision & management, diving & ROV services, as well as hose management, supply and change out.

Meanwhile, Fendercare Marine Middle East has announced the opening of new purpose-built premises at Emirates Industrial City Sajaa, Sharjah, UAE. The company's new permanent premises will enable the company to offer an even wider range of products and services to both their existing and new clients.

Since 2000, Fendercare Marine Middle East has supported the oil & gas and marine needs of the Gulf Cooperation Council (GCC) countries from their base in the UAE. The new base will continue to provide a wide range of products including fendering, buoyancy, mooring, quayside and deck equipment. The services now available to customers includes a new range of lifting and testing services, diving and ROV, SPM maintenance and hose testing.

The Fendercare Yokohama fender

Recently celebrating its 25th anniversary in 2013, Fendercare Marine has rapidly expanded to become one of the world's foremost suppliers of marine products and services. In 2005, Fendercare Marine became a part of James Fisher and Sons plc, a leading provider of marine services with extensive experience in the maritime and offshore industries worldwide.

"We are delighted to have moved to our new premises," commented General Manager, Bode Gbadamosi. "Our new base increases our ability to exceed customer expectations while giving us the space to expand our product and service offerings. As a team, we are committed to providing the best possible customer service to our existing and new customers, supported by the wide range of quality products and services you would expect from Fendercare Marine."

## Trelleborg wins contracts in Far East and Scotland

Trelleborg has won the contract to supply over 100 of its SeaGuard foam fenders to Brunei Shell's Kuala Belait supply base wharf in Brunei, through local Brunei registered contractor Waqi Sdn Bhd. As part of an upgrade project for the wharf, 93 fenders are required to span six berthing spaces. The fenders will be installed with spacing of 1.5 m, covering a length along the entire Kuala Belait Supply Base Wharf of 325 m. Trelleborg will also supply an additional 21 fenders as spares.

Steven Raaj, Operations Director at Waqi Sdn Bhd, said: "Trelleborg's SeaGuard fenders provided a solution that could be installed quickly and would assure low maintenance requirements going forward. Trelleborg's reputation preceded the company too; we knew that we needed a supplier with a proven track record to be able to deliver such large quantities so quickly."

Trelleborg was previously awarded the largest foam fender contract ever, delivering over 700 SeaGuard foam fenders and accessories to the Port of Marseille. Richard Hepworth, President at Trelleborg Marine Systems, said: "We always ensure that the right systems are supplied to specifiers on a case by case basis, to guarantee we're offering the best value and most effective solution to each project over the lifetime of the fender systems.

"Although rubber remains the traditional material of choice for fenders, foam fenders have significant advantages over rubber in many cases. For Kuala Belait, a fast turnaround was essential – delivery commences this month and is expected to complete in March."

The BoZhong (BZ) 35-2 COEEC offshore platform in Tianjin

The 114 fenders supplied are 1,000 mm diameter x 1,500 mm length SeaGuard foam filled fenders, representing an easily installed solution for the port. Low maintenance is assured because the polyurethane elastomer is highly resistant to the effects of ozone and ultra violet light.

Trelleborg's SeaGuard fenders boast high energy absorption and low reaction force, they are also non-marking and, thanks to their foam design, will never sink or deflate. Hull pressures are very low, making SeaGuard fenders gentle on soft-skinned ships. SeaGuard fender are available in a wide range of standard and custom sizes, and can be deployed floated or suspended, against a quay wall or for ship-to-ship operations, suiting sites with either small or large tidal changes. They also work just as well on new or old structures.

With two large industrial projects requiring a substantial labour force, the Shetland Islands were facing something of a shortage in accommodation. To overcome this shortage, several floating hotels – or floatels – based on barges, were towed to Lerwick and Scalloway, to provide beds for up to 1,070 workers. As part of its innovative fender rental service, Trelleborg has supplied six of its high quality 1.5 x 3 m pneumatic fenders to Shetland Maritime Ltd, on a long term lease.

The fenders will safeguard the mooring of one of the floatel, helping to provide beds for the workforce employed on the two multi-million pound industrial projects. Zander Simpson, Marine Consultant, Shetland Maritime Ltd, said, "The docking of the accommodation vessel demanded a high quality fendering system capable of providing a safe and reliable cushion between the vessel and quay for the duration of both industrial projects.

"As such, although the application is only temporary, a high performance solution was required. Trelleborg supplied just that, with the delivery of its quality assured pneumatic fenders, through its cost-effective rental service."

Rental is a very cost effective solution for temporary applications and Trelleborg's new foam and pneumatic rental service offers a wide range of products. All fenders are ISO 17357:2002 quality assured. Pneumatic Fenders are known for their massive energy absorption, and have a low reaction force that makes them an ideal ship protection medium for LNG vessels, ocean platforms, floating structures, large docks and many load sensitive structures.

Trelleborg's engineered products operation has completed its first oil and gas floatover project in China, supplying a range of its floatover hardware for the BoZhong (BZ) 35-2 COEEC offshore platform in Tianjin.

Designed and fabricated by China Offshore Oil Engineering Company (COOEC), the platform's specification called for hardware that guaranteed reliability and safety, and required a supplier with the highest standards and a strong track record. Leg mating unit (LMU) components designed by Trelleborg were produced strictly in accordance with client design specifications and international standards.

Yang Xiaolong, Design Engineer at COOEC, said, "The industry's demand for optimum performance and consistently reliable products, which deliver in the most challenging environments, is growing. Cheap and quick solutions just aren't a consideration where performance may be jeopardised. And this project was no different.

"Trelleborg was able to meet the strict specifications to supply quality solutions, which had been stringently tested at their in-house facility. The company's expert product knowledge and understanding of its applications meant that it was entirely suited for the project. Importantly, it meant that we were provided with

assurance and performance throughout."

JP Chia, Engineering Manager within the engineered products operation of Trelleborg Offshore & Construction, said: "Floatover operations carry with them huge risks and implications; should failure occur during the mating process, the project could be delayed and costs start to mount. It is because of this that Trelleborg works so hard to design and manufacture products which will meet stringent testing requirements, as failure just isn't an option in this environment.

"We were thrilled to be chosen as supplier of choice for the mating hardware on this project, especially as it is Trelleborg's first completed project of this kind in China."

Vincent Tan, Sales and Marketing Manager within the engineered products operation of Trelleborg Offshore & Construction, also commented: "The industry is beginning to switch its focus towards quality and reliability, as opposed to saving costs upfront with cheap, quick-fix solutions. As a result, Trelleborg was able to demonstrate its dedication to high performance solutions, which were ideal for the BZ 35-2 project. We hope that more opportunities arise in China as a result."

## Trelleborg launches new series of QRH

Trelleborg has launched a brand new series of Quick Release Hooks (QRHs) designed specifically for smaller and simpler mooring applications, where traditional large and more complex QRHs are not appropriate.

Due to an increase in vessel size and the need to optimise safety, there has been an increasing demand for load monitoring and remote release functionality to reduce operators' exposure to danger through controlled release of the mooring lines. The need for these capabilities in a more compact footprint has largely driven the development of the QRH Compact Series. These smaller and simpler hooks have primarily been developed to meet the needs of commercial ports and wharfs, which require a more compact installation footprint than traditional hooks could offer, or as a replacement for more traditional bollard applications.

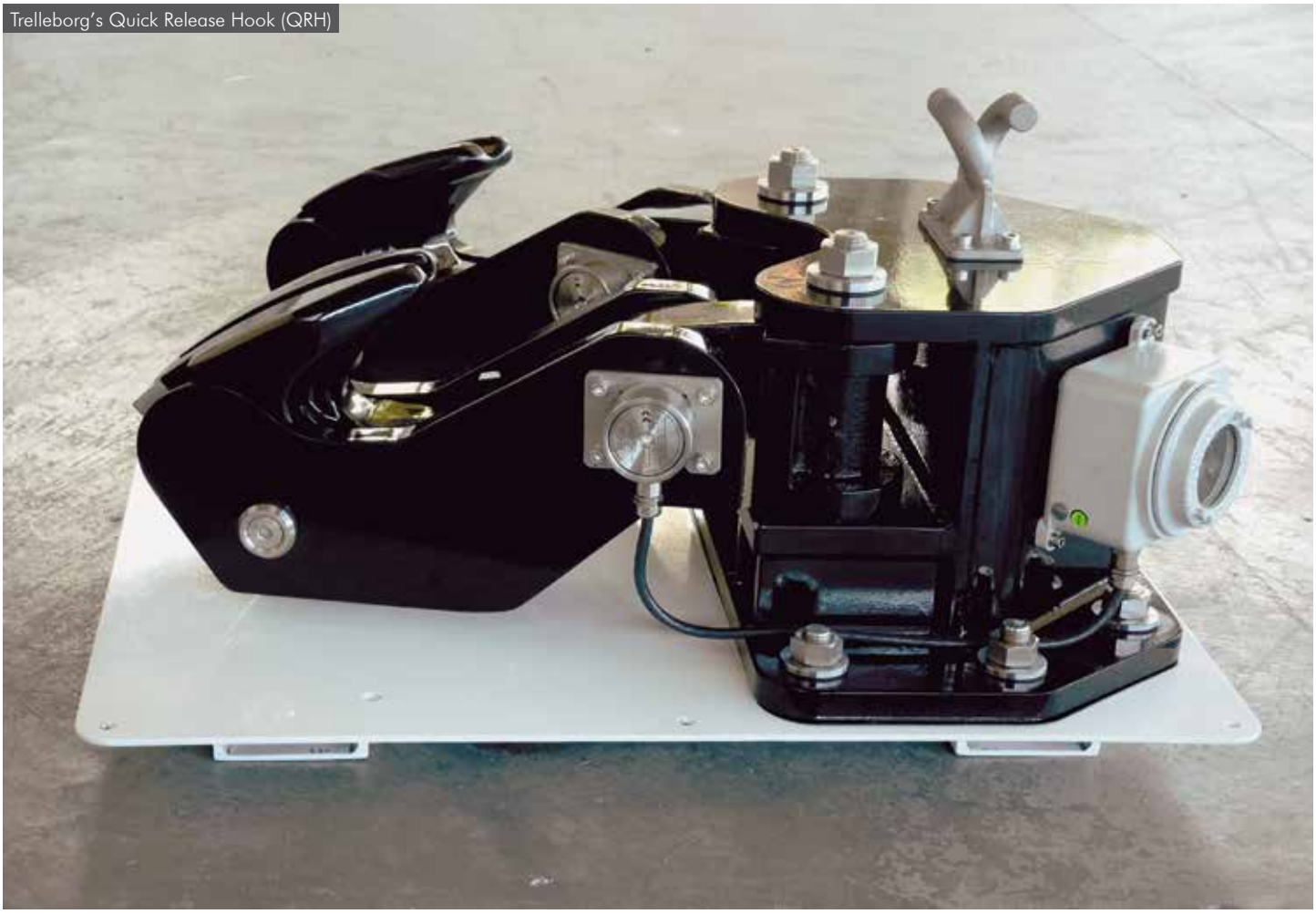
Richard Hepworth, President of Trelleborg Marine Systems, says: "We have reacted to the need to improve the efficiency and safety of mooring operations with a QRH designed specifically for smaller and simpler applications. We are also committed to our business in the LNG sector, and as such, we believe many of the features of the new series of hooks will meet the needs of the small-scale LNG market as it evolves."

The QRH Compact Series combines the knowledge of Trelleborg's vastly experienced engineering team with FEA software, providing an optimised solution for less complex and lower rating mooring applications, and representing a viable alternative to bollards for commercial ports and fuel wharfs.

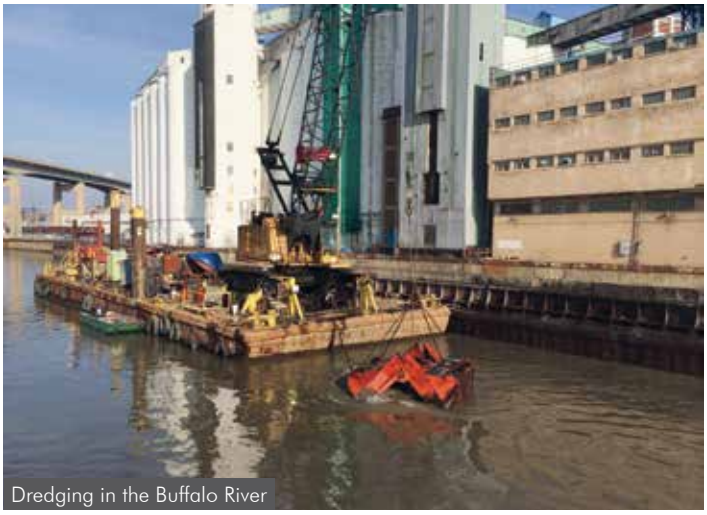
The new hook also reduces maintenance requirements through a single stage locking mechanism which has fewer moving parts, and is available in a range of designs including single, double, triple and quad hooks in capacities up to 50 t.

Trelleborg's QRHs are field proven since 1972 and installed in over 500 facilities worldwide. As is the case across the entire portfolio of Trelleborg Marine Systems, the QRH Compact Series is manufactured under strict quality control, with Trelleborg taking the project from design through to installation, providing aftercare services including maintenance and operational training and maintenance programmes. **PEM**

Trelleborg's Quick Release Hook (QRH)



# Dredging


Dredging in the Buffalo River

## Remediation, restoration, revitalisation of the Buffalo River

With the skill of a surgeon, crews are meticulously dredging the Buffalo River, ridding it of decades of contamination, setting the stage for the restoration of habitat for fish and wildlife, improved water quality and enhanced public access. 24 hours a day, six days a week, between late June and December, operators dredge the river with a massive clamshell bucket that is repeatedly lowered into the water from a crane decked on a barge. When the four year project is completed in 2015, the equivalent of 33,000 truckloads of sediment will have been removed from the riverbed. The shipping channel was formed nearly 100 years ago, in part, to alleviate upstream residential flooding.

Work halts from January to mid-June each year, the fish spawning season on the river. Known as the Buffalo River Restoration Partnership, this public-private collaboration includes US Environmental Protection Agency (USEPA), US Army Corps of Engineers (USACE), New York State Department of Environmental Conservation (DEC), Buffalo Niagara Riverkeeper and Honeywell.

USEPA is project manager for projects involving Great Lakes 'Areas of Concern' (AOC), of which the Buffalo River is one. AOC's are required by the Great Lakes Water Quality Agreement to advance environmental cleanup through remediation strategies including dredging of contaminated sediment. The agency, partnered with Honeywell and Buffalo Niagara Riverkeeper, has been involved in the project design along with other partners, and is managing the construction.

The project addresses the historical industrial contamination, common in many of the Great Lakes, rivers and harbours, according to Scott Cieniawski, project manager for USEPA. "We saw a huge improvement when the Clean Water Act came into effect. We've been able to greatly reduce the amount of contamination going into these systems," he said.

"The problem is the sediments present a storehouse for the contamination of the past, where they continue to have impacts on fish tissue concentration, so there are restrictions on fish consumption. They continue to cause fish tumors and other deformities in other kinds of wildlife and really degrade the aquatic system, really reducing what you are able to do with these rivers, which for the city of Buffalo is a huge draw. It is a huge benefit to the city to have a clean and healthy river."

Sevenson Environmental Services of Niagara Falls, N.Y., is a team partner with EQM, an engineering and design firm out of Cincinnati, which was awarded the US$40m contract by the Great Lakes National Programme office. Luedtke Engineering, a subcontractor of Sevenson, is doing the dredging and hydraulic unloading of the barges filled with sediment that is transported by barge for processing at the confined disposal facility (CDF).

"These are historical legacy sediments that have been there for a long time that don't normally get addressed through the routine navigational dredging," said Martin Doster, regional environmental remediation engineer for DEC. "These pockets of contaminated sediments have been identified over the last decade through a serious of sample investigations and engineering investigation."

Crews are mechanically dredging approximately 480,000 cubic yards (366,986 $m^3$) of PCB sediment from the lower 6.5 miles (10.4 kms) of the Buffalo River and the City Ship Canal. The sediment is loaded into scows and placed in the USACE's CDF, located 3 miles (4.8 kms) south of the Buffalo River on the shores of Lake Erie. Another 5,000 cubic yards (3,823 $m^3$) of PCB sediment will be processed, dewatered, stabilised and disposed of offsite in a Toxic Substances Control Act permitted landfill (waste with >50 parts perm PCB concentration).

Along with the sediment, the material being pulled from the river bed varies, according to Ben Faery, Sevenson's project manager. "Logs are coming up and there are a lot of tires, cable, concrete, you name it."

The sediment and debris are loaded onto a barge which is then towed to the confinement facility, where a hydraulic unloader pumps it in through a pipeline into the actual CDF.

Sediment is offloaded using a 16-inch hydraulic dredge that has been modified specifically for offloading sediment scows into CDFs. Water is re-circulated from within the CDF to create and slurry and the sediments are pumped thru a 16-inch (406.4 mm) pipeline to a designated area within the CDF.

Debris that ends up in the sediment scows is removed periodically at the temporary pier constructed by Sevenson at the CDF. Debris is offloaded using a long reach excavator with grabble attachment, loaded into off-road dump trucks and placed within the CDF footprint.

The project also calls for in-situ capping over an eight to 10 acre area of contaminated sediment along a 1.4 mile (2.24 kms) stretch of the City

Jill Jedlicka

# Providing global solutions for tomorrow's needs

1. Dredging of a turning basin and an access channel for a new coal export terminal in Santa Marta, Colombia.
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3. AMORAS project: construction and exploitation of a mechanical dewatering plant for dredged material in the Port of Antwerp.

DEME has decades of experience in its core dredging and land reclamation activities and hydraulic engineering. In support of its dredging activities, the Group offers an impressive range of services in the environmental field such as brownfield remediation, complex marine construction such as foundation and installation of offshore wind farms and sea aggregate winning. Thanks to its multidisciplinary capabilities and its integrated corporate structure, DEME has become a global solutions provider developing a whole range of new activities in the field of energy, oil & gas and renewable energy.

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Creating land for the future

Ship Canal, located adjacent to the Buffalo River. Habitat restoration will also be completed.

USACE is supplying subject matter experts to work as part of the Buffalo River Restoration Partnership and to oversee the work that is being done. Bruce Sanders, Public Affairs Officer for the US Army Corps of Engineers, Buffalo District, said, "The partnership's efforts will contribute significantly to the ecological restoration of the Buffalo River and the Great Lakes. We're optimistic that working together to leverage available resources the partnership will leave a legacy we can all be proud of."

According to Buffalo Niagara Riverkeeper, the restoration project has leveraged nearly $75m in restoration of the Buffalo River and shoreline, which is laying the foundation for Western New York's "blue economy."

Jill Jedlicka, Riverkeeper Executive Director, is passionate about this project. Two generations of her family have doggedly worked to clean up the river. "It's exciting. For a long time, we never thought it would happen. To be able to get a point where we actually see the dredge plants and the scows and the 40 plus jobs that have been created for this project it makes you feel great that your work means something for not only your organisation but for your entire community."

This is just the beginning. Jedlicka said the motivation behind a river restoration is to help stimulate the local economy, something she calls a "blue economy, that's water dependent and is a recreational resource".

Economic revitalisation around the river is beginning to take hold, with investors looking to capitalise on the cleaner, restored waterway. "It's seen as prime real estate and prime for private investment," Jedlicka said. "I think it's another page in the book of turning Western New York around economically, but also bringing people back to the waterfront," the DEC's Doster said. "For a long time, I think Buffalo and the people here have never taken the time to come to the water to be part of that waterfront, and now we, as a society, are embracing that. We're excited about restoring environmental features of the river, which in turn, benefit everybody who lives here in Western New York."

The future for the Buffalo River is bright. USEPA's Cieniawski noted that regulations that have come into effect have led to cleaner systems in general, and waterways no longer run the risk of recontamination.

Jedlicka concurs. "We've always said that water defined our history, it will define our future. But now, clean and healthy water will define our future."

## US Government gives award to Ellicott Dredges

In a ceremony at the US Chamber of Commerce, the Overseas Private Investment Corporation's (OPIC) President and Chief Executive Officer Elizabeth L. Littlefield presented Ellicott Dredge Enterprises, LLC and its Ellicott Dredges LLC entity with OPIC's inaugural "Impact Award" for Ellicott's work in Iraq. Ellicott was one of only eight organisations across the country receiving this award from OPIC, the US Government's development finance institution. With the assistance of political risk insurance from OPIC, Ellicott was able to secure contracts in Iraq supplying dredges to de-silt hydroelectric dams as well as to improve flood control on the Tigris and Euphrates Rivers and to improve irrigation canals.

US Congressman Mark Meadows (NC) enthused about Ellicott, "When Ellicott was founded in 1885, Grover Cleveland was president of the US. Since building all of the dredges used to construct the Panama Canal, Ellicott has performed projects and created jobs in almost every conceivable way: Small dredges, large dredges. Domestic sales. Exports. Long-term projects. Disaster response. Parts and maintenance. Design innovations. Patents. Factories in the US, factories abroad. Ellicott Dredges

US Congressman Mark Meadows and Ellicott's Peter Bowe

has built itself to become one of the oldest and most successful dredging equipment companies in the world. This is a durable and versatile company. It can handle the tough jobs."

Ellicott's Peter Bowe noted that the Company was thrilled to receive this recognition from the US Government, and pleased to be included amongst such a distinguished group of award recipients. OPIC selected the Impact Award winners through a rigorous process including criteria of work sectors or regions, innovation in overcoming obstacles, risk mitigation practice, quality of results and development impact. In all, OPIC presented awards in six categories: US Small Business, Renewable Resources, Development Impact, Critical Infrastructure, Private Equity and Access to Finance. The event was co-sponsored by the US Chamber of Commerce.

OPIC mobilises private capital to help solve critical development challenges and in doing so, advances US foreign policy. Established as an agency of the US Government in 1971, OPIC operates on a self-sustaining basis at no net cost to American taxpayers.

## Boskalis release 2013 figures

Holland's Royal Boskalis Westminster achieved revenue of €3.5bn in 2013 (2012: €3.1bn). Net profit rose sharply to €366m (2012: €249m), partly due to a number of extraordinary items amounting to €97m post tax.

EBITDA also reached a record high level of €800m (2012: €567m) and EBIT was €466m (2012: €336m). The contribution to the result from dredging increased, partly due to substantial results on the financial settlement of projects completed at an earlier date, the sale of equipment and the settlement of an insurance claim. Offshore Energy's contribution to the result rose sharply, in part explained by the contribution from the Dockwise activities acquired at the start of 2013. The contribution to the result from Inland Infra fell, partly due to the sale of the 40% stake in Archirodon as well as integration and reorganisation expenses. Towage & Salvage had a good year.

The order book declined slightly to €4,005m (end-2012: €4,106m). The acquisition of Dockwise and the sale of the 40% stake in Archirodon on balance had a neutral effect on the size of the order book.

Meanwhile, Boskalis has announced that it has reached an agreement to acquire Fairmount Marine and Fairmount Ocean Towage Company B.V. (Fairmount) from the French group Louis Dreyfus Armateurs. Fairmount is a leading global provider of long distance ocean towage services operating five 205 t bollard pull towing vessels with anchor handling capabilities.

# Record year for DEME

In 2013, DEME reached a turnover of €2.53bn in 2013. Compared to the previous year, this represents an increase of 32% and a record turnover. Ebitda increased by 25% to €437.8m, and net profit amounted to €109.1m, an increase of 22% compared to 2012.

Although world economies are facing sluggish growth and experiencing major difficulties in overcoming the recession, DEME maintained a high level of activity in Europe, the Middle East, Australia, Africa and South America.

Major on-going projects in Qatar for port infrastructure and in Australia for energy and mining clients confirm DEME's prominent position in these markets. Specialised marine and offshore engineering companies GeoSea, Tideway and Scaldis saw business expanding, owing to the rapid growth of the renewable energy market and oil and gas-related developments on several continents. Environmental specialist DEC managed to maintain its position in a challenging and highly competitive market.

At the end of 2013, DEME obtained several contracts in France and Germany. In France, SDI (Société de Dragage International) was awarded a dredging contract for the second phase of the deepening of the Seine. SDI further obtained the contract for maintenance works in the port of Bayonne. Finally SDI will execute for Le Grand Port Maritime de La Réunion the extension works in Port Est. This is the second phase of the extension works of which the first phase was also executed by SDI.

In Germany, NORDSEE obtained a contract for deepening works in the Port of Bremen. NORDSEE also obtained a maintenance contract on a stretch of 100 kms on the Rhine in Duisburg.

In Nigeria, Dredging International obtained a major contract to build a new dock in Onne for logistic services for oil & gas companies.

In Brazil, Dredging International signed a new contract with Porto Sudeste do Brasil for dredging works at the Bay of Sepetiba in Itagai.

In Australia, two massive dredging projects, the Western Basin LNG development in Gladstone (Queensland) and the Wheatstone LNG project in Onslow (West Australia), were operating at full tilt in the course of last year. The Gladstone project ended well ahead of schedule while the Wheatstone LNG Project is to be completed by 2015.

In 2013, operations in the Middle East were driven by two large, challenging projects in Abu Dhabi and in Qatar both executed by MEDCO (Middle East Dredging Company), a joint company of DEME, UDC and Qatar Holding. In Abu Dhabi, the construction of two offshore artificial energy islands 120 kms offshore for the development of the Satah Al Razboot offshore oil field was completed. The construction of these two islands is a world first.

The second massive project is the construction of the access channel to the New Port, south of Doha in Qatar, including the new Naval Base, which is situated on a nearshore artificial island north of the access channel.

In Asia, DIAP (Dredging International Asia Pacific) was awarded a Design and Build contract for a land reclamation as an extension to Jurong Island for the account of Singapore Government's largest industrial landlord JTC (the Jurong Town Corporation). This project will be executed over the coming five years.

GeoSea will undertake, in 2014 and 2015, works on eight offshore windfarm projects: Northwind (Belgium), Baltic 2 (Germany), Godewind (Germany), Westermost Rough (UK), Borkum Riffgrund 1 (Germany), Amrunbank West (Germany), Butendiek (Germany) and Kentish Flats Extension (UK).

The Wheatstone project

The *Artemis*

## Better year for Van Oord

Holland's Van Oord had a better year in 2013 than in 2012. The year closed with an almost equal turnover of €1,641m (2012: €1,676m). At €130m, the net profit was considerably higher than in 2012 (€98m), and the company's order portfolio was similar to the previous year. The net profit was positively affected by the settlement of a number of outstanding claims in Dubai from 2005-2008. Higher operating revenues considerably decreased the net debt.

Van Oord realigned its strategy in the past year by analysing its activities in dredging, offshore oil & gas, offshore wind. In the present five-year period (2013-2018), it will be pursuing a strategy of growth. "That growth will come mainly from our Offshore (oil & gas) and Offshore Wind Projects business units", says CEO Pieter van Oord. "We don't plan to take on any new activities outside our own sector because we believe our existing activities offer enough potential for growth."

> "We don't plan to take on any new activities outside our own sector because we believe our existing activities offer enough potential for growth"
>
> **Pieter van Oord**
> **Van Oord CEO**

The volume of activity in the dredging market remained stable in 2013. The occupancy rate for Van Oord's fleet was slightly higher than in 2012. There were major changes in the various markets worldwide, however. The European market improved, although this has not resulted in higher prices. Conditions in the markets of Brazil, Nigeria and India were difficult. "We were successful in Indonesia. We delivered the Gladstone project in Australia and are continuing our work on Ichthys, another major project. At this point, we do not see any large follow-up orders on the horizon in Australia. One significant trend is that we are being asked to assume all-round responsibility for port engineering and construction, as the main contractor. The Moín project in Costa Rica is a good example of this", says Pieter van Oord.

Van Oord took delivery of its second self-propelled cutter suction dredger, *Artemis*, in 2013. The cutter has already been deployed successfully on a number of projects in Europe and Asia. There were further delays in the construction of offshore installation vessel *Aeolus* owing to problems at the Sietas yard in Hamburg, which has applied for a suspension of payments. The vessel should be operational by June 2014. "In 2013, we decided to act on our strategy of building offshore wind farms as an EPC contractor by investing in a large cable-laying vessel with a 5,000-t cable carrousel", says Pieter van Oord. "The *Nexus* will be operational in early 2015 and we intend to deploy it on the Gemini project."

## EIVA launches dredging system

March saw the launch of the EIVA NaviSuite Uca software bundle, a plug and play solution for integration with the Trimble GCS900 Grade Control System for excavators. EIVA NaviSuite Uca is the result of collaboration between EIVA and Trimble, established to enable Trimble customers to choose EIVA software for use with the Trimble GCS900 Grade Control System for excavators. Using EIVA software with the GCS900 allows dredging contractors to leverage the capabilities of the EIVA dredging software with the precise positioning capabilities of the Trimble system.

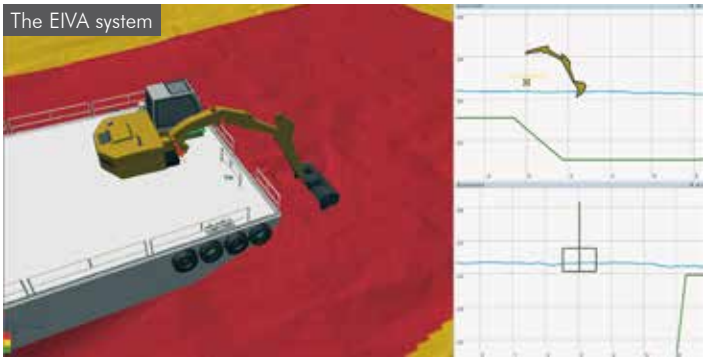
"The collaboration between our companies allows contractors to add EIVA's expertise in underwater visualisation and dredging workflows to Trimble's market leading system for excavator machine guidance. The result is unparalleled productivity in marine construction and dredging operations,' said Roz Buick, vice president and general manager of Trimble's Heavy Civil Construction Division

The user-friendly 3D EIVA software allows for efficient and precise dredging operations, which means less time spent in the cab and an overall reduced time-frame of operations, from pre-survey to end-report.

NaviSuite Uca was also developed in close collaboration with JD-Contractor, a dredging specialist and customer representative. According to Palle Møller, Captain of Marcos, JD-Contractor, NaviSuite Uca has proven its worth: "We're very happy with the solution that integrates the EIVA software with the Trimble GCS900 Grade Control System for excavators, and use it for all dredging operations. The 3D visualisation allows us to change the angle of the view as needed. This combined with the real-time information from the Trimble system for the precise position of the excavator's bucket means we constantly have a complete overview of how far we've come, if the bottom of the trench is even and if we've missed a section."

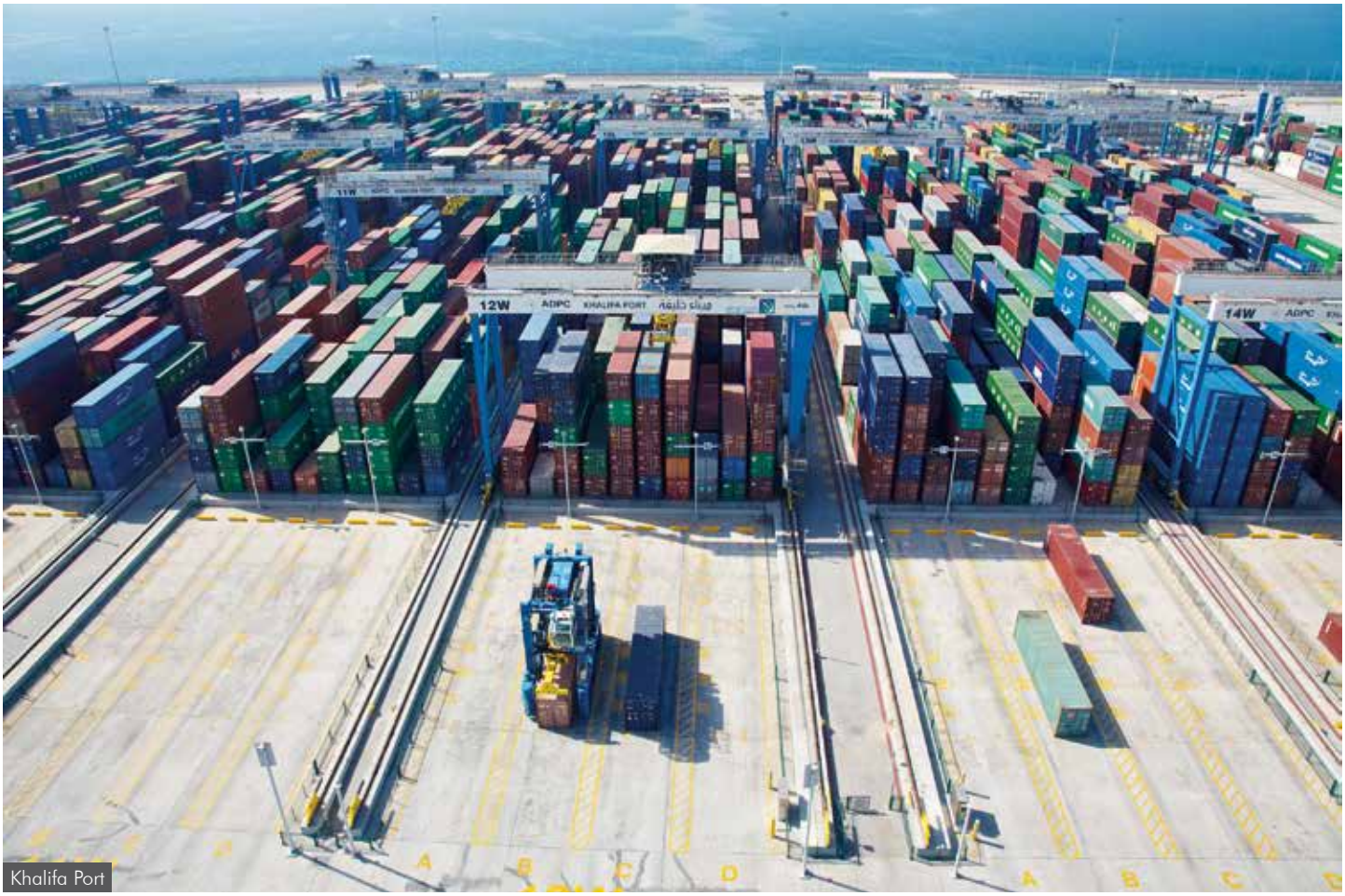
By integrating pre-survey, GPS and grade sensor data, NaviSuite Uca offers real-time navigation and 3D visualisation of the dredger body, boom, stick and bucket position relative to the seabed.

This, together with a combined view of a pre-survey image of the seabed and target profile, supported by a cross-profile, provides the operator with a constant overview of the operation progress. **PEM**



The EIVA system

# Middle East



Khalifa Port

## Ports gear up all around the Gulf

Firm fuel prices, broad industrial diversification and high disposable incomes are some of the factors underpinning record port expansion in the Middle East. Nowhere is this more evident than in the busy waters of the Gulf where existing terminals continues to add capacity as new ones are being built, often on virgin sites.

The increasingly complex Gulf port network is a challenge for container lines. Where to institute direct calls closest to booming markets? How to avoid congestion? And where to make the most of a growing network of feeder services? But one thing is certain: buoyant economies and the spending power of energy-rich Gulf states mean that the region has become a destination in its own right.

It is no longer a way-call on the world's most important liner trade between Asia and Europe. The size of main-haul container vessels calling there is increasing steadily and new port developments are preparing to accommodate the world's largest vessels in due course. Meanwhile completely new trades are being established, notably an important new backhaul trade in dry petrochemicals out of Saudi Arabia, Qatar and Abu Dhabi in containers.

Later this year, Jebel Ali's Container Terminal 3 will open for business, adding another 4m teu to the container hub's existing 15m teu capacity. The highly automated new terminal will have 2 kms of quayside with 17 m of water alongside. The $850m facility will be equipped with 19 remotely-controlled driverless cranes capable of working the largest container ships in existence today and thought likely for the future.

This latest expansion follows a steady trend in which the DP World-managed Jebel Ali terminal has stayed ahead of the demand for container hub port capacity in the Gulf. Only last year, DP World inaugurated an extension to Container Terminal 2, increasing annual capacity at what the company claims is the largest man-made port on the planet by 1m teu – to 15m teu annually.

The project added another 400 m of quay wall to the terminal, giving three kilometres of quay and scope to handle six ultra-large container ships simultaneously. Speaking at the time, DP World Chairman Sultan Ahmed Bin Sulayem said that together with Terminal 3, Jebel Ali Port would have capacity of 19m teu a year by the end of 2014 and would be able to handle ten of the latest generation mega-vessels at the same time – "the only port in the region able to do so".

Speaking recently, DP World's Senior Vice President and Managing Director for the UAE Region, Mohammed Al Muallem pointed out that directly and indirectly, the port is now serving a population of 2bn people. Economies in the region were amongst some of the fastest growing in the world, he said, and vast capital expenditure on infrastructure was taking place across the Middle East.

He noted the $150bn earmarked in Qatar for infrastructural development ahead of the 2022 FIFA World Cup and similarly huge sums in Saudi Arabia. The region had hardly paused for breath as the rest of the world sank into recession. In 2009, the UAE's economy stalled but growth resumed in 2010 – 6% – and only 15% of the Dirham20bn reserve fund allocated for potential problems following the crisis was drawn down.

Meanwhile, a few miles down the coast in Abu Dhabi, a completely new container and general cargo port opened recently. Phase 1 of the Khalifa Port development, a vast project undertaken by the Abu Dhabi Ports Company (ADPC), provides a gateway to the energy-rich Emirate with annual capacity of 2.5m teu and 12m tonnes of general cargo. That is only for starters, however. ADPC envisages that as trades expand and container volumes increase, capacity will be expanded to 15m teu and

Jebel Ali

35m tonnes of general cargo by 2030.

The new facility, sited on a man-made island some five kilometres offshore, now handles all of the container traffic which used to pass through Abu Dhabi's Zayed Port. The port is linked to the mainland by a one-kilometre causeway and the onshore area, with access to Kizad – the Khalifa Industrial Zone Abu Dhabi, has facilities including customs, container inspection, security and immigration.

The new container facility has been designed with a significant level of automation. Inventory stacks in the martialling yard are fully automated and delivery and loading information and advanced GPS tracking are integrated with customs to avoid delays. There are new and fast transport links into Abu Dhabi and, in due course, the port is likely to be connected to the railway system which itself will transform cargo movements across the region when it is commissioned a few years from now.

Just off the coast of Saudi Arabia and in what sources describe as a gateway to Saudi's prosperous eastern province, the APM Terminals-operated Khalifa bin Salman container terminal on the island of Bahrain is a significant hub in the regional network. Whilst import volumes are modest, the facility is becoming increasingly important for import and export shippers seeking to avoid the congestion and delays associated with container operations in Dammam. Bahrain is linked to Saudi Arabia by the King Fahd Causeway, itself at times a congested artery, but the route in and out of Saudi via Bahrain is still an attractive option for many.

Port executives also point out that Bahrain is well-placed as a transhipment hub for containers destined for the northern Gulf. Both Kuwait and Iraq, although both in the process of building their own vast container ports just a few miles apart, have limited facilities so far and are off limits to main-haul vessels which draw far too much water. There is already a margin of spare capacity at the Khalifa bin Salman terminal but port executives point out that the facility has been designed with plenty of space so that gantry cranes can be added on a 'plug and play' basis when required.

A new feeder service was established late in 2013 between Bahrain and Kuwait – the 1,700 teu 2007-built Hanjin Belawan has been deployed to cater for growing volumes of transhipment cargo, partly a result of the larger main-haul vessels which are calling directly in Bahrain. For some years, APL was the only major line to call directly in Bahrain but in 2013 higher volumes prompted the line to deploy larger vessels. The 6,500-8,000 teu vessels it had been using were replaced with larger 9,200 teu units.

Within a few weeks, Hanjin and NYK had established a new direct service, a second link to Asia, and the first direct link between Bahrain and the US west coast. Once again, Saudi Arabia is a key element in shipping lines' strategic planning. Almost unbelievable industrial diversification and expansion is underway in the Saudi city of Jubail. Dry petrochemical exports in containers destined for Asia now constitute an entirely new trade and provide a very attractive backhaul cargo.

Meanwhile the arrival of larger vessels has prompted Bahrain's Ministry of Transport to invite dredging firms to bid for the next phase of its channel deepening programme. Any time now, the Ministry is likely to proceed with the project, expected to cost about $60m and take 18 months, which will deepen the channel from 13.6 m today to 15 m. This will allow container vessels of 11-12,000 teu to call directly at the Khalifa bin Salman terminal.

Within the next few years, Bahrain will also be linked to Qatar by a new causeway. This is just one of the many major infrastructure projects under way in Qatar where maritime trade is currently focused on the world's largest LNG export terminal in Ras Laffan and the container terminal, general cargo and petrochemical export facilities in Mesiaeed. Other major projects include a new metro in Doha and a range of construction projects associated with the 2022 FIFA World Cup.

Partly to cater for soaring import demand, Qatar in investing some $7bn in a new multipurpose port facility. Its so-called 'New Port' is sited close to Mesaieed and its first phase is likely to be completed and commissioned by mid-2016. This will provide capacity to handle 2m containers a year as well as 2m tonnes of general cargo. The first phase will provide facilities for handling ro/ro vessels, bulk carriers and offshore support vessels.

Container terminal infrastructure will include 1,200 m of quay with water depth of 17 m alongside, and a 72-hectare martialling yard with scope to handle reefer and hazardous cargoes. The terminal will have 12 ship-to-shore cranes capable of handling the largest container vessels in existence today as well as 38 rubber-tyred gantries.

Work on the new facility began more than three years ago with the main contractor, China Harbour Engineering Company, reclaiming land and constructing breakwaters and quay walls. Dredging was undertaken by the Middle East Dredging Company, which assigned two of the world's largest cutter suction dredgers to the project. Van Oord's *Ambiorix* and the *D'Artagnan* were deployed on the New Port project early in 2013.

Ras Laffan's LNG export

## Good year expected for Gulf Cobla

Dubai's Gulf Cobla is reporting a good year in 2013 in what the management describes as "we did exactly what we expected". As for 2014, it is being described as "looking bright, the signs of further improvement in the market are there".

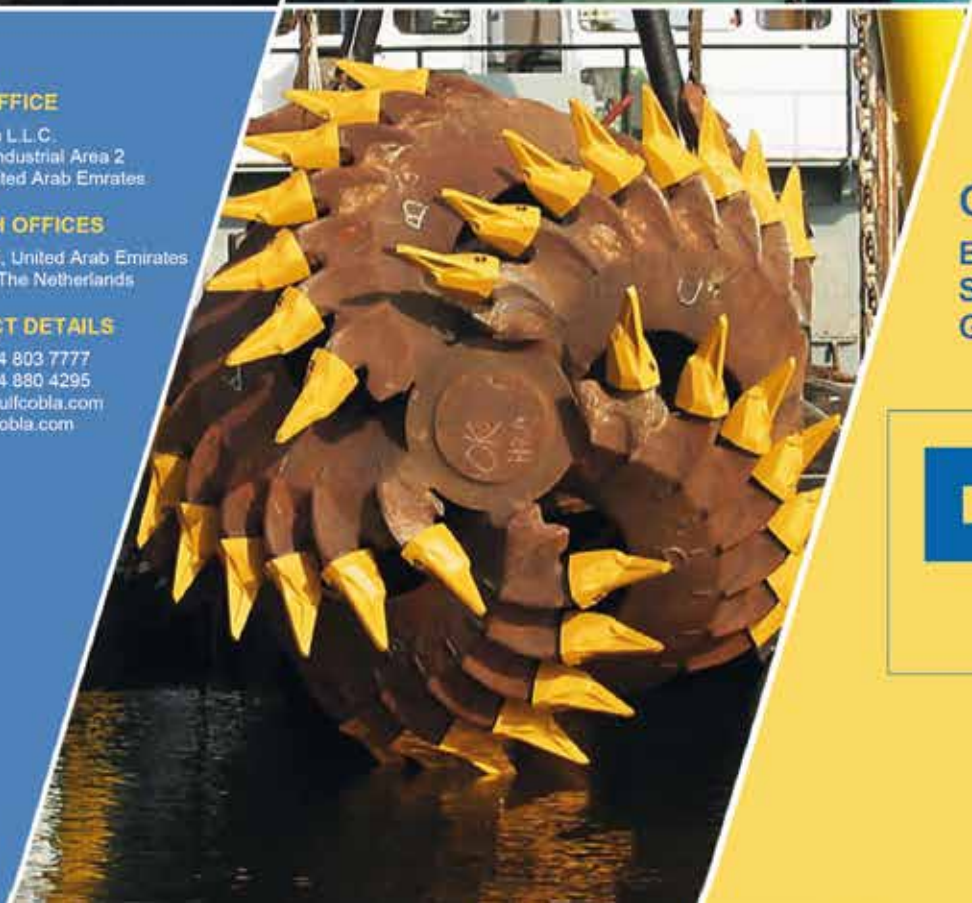
Mid 2013 Gulf Cobla's 6,200 hp cutter suction dredger *Khaleej Bay* left the Arabian Gulf for Aqaba, located on the very southern tip of Jordon at the top of the Red Sea, to start a six month contract, involving harbour dredging works for the Aqaba New Port project. This six-month contract called for the dredging of a basin area down to -15 m, dredging at two new container berths, which require a depth of 10 – 15 m and a number of trenches to 17 m depth. The main contractor on this project was Holland's BAM International.

# DREDGING & LAND RECLAMATION

MARINE CHARTER - SURVEY SERVICES

## GULF COBLA

Dubai based dredging firm Gulf Cobla operates a fleet of cutter suction dredgers and has over 35 years of international experience. Our flexible approach combined with professional management, staff and crew makes us a reliable partner for your dredging and land reclamation projects in the Middle East and other parts of South Asia.

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**Gulf Cobla**

**BUILT ON SOLID GROUNDS**

The Dhow wharfage in Dubai

During 2013, Aqaba Development Corporation (ADC) awarded BAM International a €47m design and construct contract to build the Aqaba new LNG Terminal, 18 kms south of Aqaba. The contract includes the design and construction of an LNG jetty with approach trestle, including the mechanical, engineering and piping services. BAM International and its local joint venture partner MAG Engineering & Contracting Company will complete this project in 15 months. The civil works are designed by BAM's engineering company Delta Marine Consultants.

The LNG Terminal forms part of the plan for developing Aqaba's Energy Ports. The Jordon Government has tasked ADC to develop the country's energy intake capabilities to ensure a consistent supply of energy fuels such as oil, LNG and LPG.

Meanwhile, BAM has recently completed the extension of Aqaba Container Terminal just north of this new LNG Terminal, a key development in Jordan. More south BAM is currently building the quay wall (scheduled for completion early 2014) for the Aqaba New Port project, a second port in line with the country's economic master plan. This latter part of the project is the one in which Gulf Cobla is involved. The dredging works were completed in October 2013.

Gulf Cobla is venturing more and more outside the Arabian Gulf area. The 3,500 hp cutter suction dredger *Deira Bay* has been working in the Maldives since October 2010. The first contract in this country involved the reclamation of an airport in Thaa Atoll Thimarafushi. This project was combined with the reclamation of residential areas adjacent the existing island. Since then the *Deira Bay* has been fully employed involving four separate projects, including the expansion works for Malé International Airport at the capital of the Maldives. Since May 2013 the *Deira Bay* has been working on its third airport reclamation project in the Maldives, extending the runway at Gan International Airport and dredging water plane landing areas. This project is recently completed and it is likely that this dredger will be based in the Maldives for some time yet.

After leaving Jordan, the *Khaleej Bay* entered a contract for the dredging of a four kilometre entrance channel at Umm Al Quwain in the United Arab Emirates. The contract involves partly the re-instatement of an existing channel which was once dredged by the Umm Al Quwain Development Authority and partly dredging of a new channel to connect with the offshore -6 m contour.

The 3,800 hp cutter suction dredger *Baniyas Bay* has been involved in the Al Faw project in Iraq, which involves the construction of an 8 kms breakwater and in later phases some 45m m$^3$ of reclamation work. The first phase of the works at Al Faw is being carried out by Archirodon who sub-contracted the dredging works for the breakwater construction and experimental reclamation works to Gulf Cobla. Al Faw is located some 100 kms southeast of Basrah and Archirodon was awarded, by the General Company for Ports of Iraq (GCPI), the contract for the design and build of a breakwater for Al Faw Grand Port.

The *Baniyas Bay* will also be utilised in dredging work, expected to last some six months, for the Salwa Marine Resort in Qatar under a sub-contract with the Tashgeel-Besix Joint Venture. The resort includes a five-star 350 Key hotel, leisure marina, beachfront villas and riads, waterpark, business and conference center, fitness center, and a Mosque. The program elements looked to historic Qatarian architectural influences as well as ancient fortifications for design inspiration.

The 3,500 hp cutter suction dredger *Garhoud Bay* has recently been deployed on a project in the Dubai Creek. This project involved the opening of the corridor between the creek and the newly excavated Business Bay Channel, the start of the Dubai Water Canal which is currently being tendered.

Changes to the Gulf Cobla fleet include the conversion of one of the company's crane barges to a self-propelled crane barge, which will includes the installation of a new ten by ten meter section and two new 400 hp Caterpillar diesel engines.

The *Khaleej Bay* recently underwent an upgrade whereby the suction and discharge pipes were increased from 550 mm to 650 mm and the pumping capacity was increased by some 800 hp to match the required output.

## Van Oord awarded large dredging contract in Kuwait

Van Oord has been awarded a land reclamation project in Kuwait. The client is the Kuwait National Petroleum Company (KNPC). The contract value amounts to approximately €500m.

The project involves the reclamation of land in a 'sabkha area' (a salt plain near the coast) for the construction of a new refinery. The New Refinery Project is situated in the Al-Zour area south of Kuwait City. The refinery will produce 615,000 bbls/day. The project is the first phase of KNPC's US$23bn investment programme for this new refinery.

"The Middle East has been very important to Van Oord for decades. We are pleased to continue working and strengthening our position in the area with this contract", says CEO Pieter van Oord.

Work on the project will begin immediately, with completion to take 30 months. The project involves dredging and reclaiming some 65m m$^3$ of sand and executing extensive ground consolidation. The project will also include constructing various channels, a basin for a future jetty, a barge dock and roads. Van Oord will deploy large trailing suction hopper dredgers and cutter suction dredgers.

## Khalifa Port expands capacity

Abu Dhabi Terminals (ADT), the manager and operator of Khalifa port container terminal has announced that the terminal has received a new batch of three of the world's largest and most modern ship-to-shore (STS) quay cranes this month. The three new quay cranes will join the six already operational cranes at KPCT, making it a total of nine STS cranes. In addition, six cutting edge automated stacking cranes (ASC) have recently joined the former 30 ASC's at KPCT, and a further six will be commissioned later in Q1

The Super Post Panamax quay cranes were produced by Shanghai Zhenhua Heavy Industry Co. Ltd. in China with a cost of US$28m, and

The cranes' arrival in Kalifa Port

travelled overseas on especially built ships to Khalifa Port's container terminal, the first semi-automated container terminal in the region.

One STS crane is 126.5 m high and weighs 1,932 tons. It has an outreach of 65 m (22 containers) and a lifting capacity of 90 tons.

Khalifa Port has been planned in a systematic way and the master plan includes well-constructed, structured phased developments. The first phase allows for an annual handling capacity of 2.5m teu.

Khalifa Port opened for business in late 2012; it is expected to continue to add capacity in phases as needed, through to 2030. More than 1.3m teu have now been handled at Khalifa Port container terminal, since it opened commercially in September 2012. In December more than 100,000 teu passed through the port in just one month. These are very significant figures for KPCT and the highest number of containers ever handled in one month in the emirate.

The 'crane moves/hour (GMPH)' is a key indicator for performance in a marine terminal and has improved no less than 35% since starting operations at the Khalifa port container terminal. As of last month Abu Dhabi Terminals announced productivity levels to have reached 34 GMPH on average.

Considerable progress has also been achieved on the landside. Martijn van de Linde added – "Truck turn-around times are well ahead of what our modelling and operational simulations had calculate. We are turning Trucks under 13 minutes in the Container Terminal. This adds real value to the trade and its service providers."

Khalifa Port is located on 2.7 kms$^2$ of reclaimed land situated 4.5 kms off the coast of Taweelah, a site 60 kms north of the city of Abu Dhabi and 75 kms south of Dubai. The port is located within an hour's drive of a number of other major transport and logistics centres, including Abu Dhabi International Airport, Dubai International Airport. With a 4 km quay wall and 18 m draft, Khalifa Port is capable of handling the largest ships in the world.

## DP World opts for Kalmar's latest reachstackers

Kalmar, part of Cargotec, has won an order from DP World to supply two new generation reachstackers, named Gloria, to the Jebel Ali new container terminal 3 (T3) in Dubai. The order was placed in January 2014 and delivery is scheduled for June 2014. DP World's impressive container terminal T3 will open for business this year 2014 as the world's largest semi-automated facility. It features 1,860 m of quayside and a 70-hectare yard. Providing an additional annual capacity of 4m teu, it takes the total capacity of Jebel Ali Port to 19m teu. The new terminal will be part of Jebel Ali's integrated multi-modal hub, offering sea, air and land connectivity.

Gloria is designed to handle loaded containers and has the capacity to stack 45 tonne (9'6") containers five-high in the first row. With fuel cost reduction, safety and increased operational efficiency using the latest automation technology high on DP World's agenda, Gloria's CAN bus technology, for the first time, is being interfaced with DP World's local port automation system. This interfacing provides constant data transfer of the key operating parameters from the machine including fuel consumption, oil and water temperature, speed level, and operating and idling hours. It also sends signals on the current working boom lift length and angle, together with the spreader height. For safety purposes, the twist lock/unlock condition and the spreader job type messages are also received. These are features that contribute significantly towards safety and operational efficiency. The new Eco drive mode contributes to the reduction in fuel consumption. **PEM**

# New Vessels

## *Al Bahar* launched by IHC Merwede

Holland's IHC Merwede has successfully named and launched the 23,545 kW self-propelled cutter suction dredger *Al Bahar (C/D Huta 12)* in a ceremony during early March at the company's shipyard in Kinderdijk. It is building the innovative vessel for Huta Marine Works, which is based in Saudi Arabia.

The contract for the design, construction and delivery of the vessel was signed between Huta Marine Works and IHC Holland, part of IHC Merwede, during October 2012. The keel was laid during August 2013 and the ship will be delivered in the third quarter of 2014.

IHC Merwede was awarded this project due to the reliable technology at its disposal and an excellent track record following the notable delivery of a previous order for Huta Marine Works – the stationary cutter suction dredger *Al Sakab*.

The *Al Bahar (C/D HUTA 12)* has been designed and built using the latest technological developments. She is equipped with separate accommodation for the sailing and operating crews, a travelling deck crane and azimuth thrusters. Special attention has been paid to the maintenance features and accessibility. The vessel will be deployed predominantly on both sides of the Arabian Peninsula, where she will dredge hard soil in difficult climatic conditions.

Fer Tummers, Managing Director of IHC Merwede's Dredging division, said: "Huta Marine Works and IHC Merwede are both proud of the vessel. We have worked closely with Huta's staff to achieve a successful outcome. Both companies already have a history of strong co-operation, demonstrated by the delivery of the cutter suction dredger *Al Sakab*. Once again, we have proven to be a reliable partner with the construction of this high-quality dredger in record time."

| *Al Bahar* – principal particulars | |
|---|---|
| Length, o.a. | 122.50 m |
| Breadth | 21.70 m |
| Depth | 6.80 m |
| Draught | 5.00 m |
| Dredging depth | 28.00 m |
| Total installed power | 23,545 kW |
| Speed | 9 knots |
| Accommodation | 40 people |

IHC Merwede has also successfully named and launched the pipe-laying vessel *Sapura Topazio* in a ceremony at the company's shipyard in Krimpen aan den IJssel, The Netherlands. The 550 t pipe-laying vessel – ordered by Sapura Navegação Marítima, a joint venture between Sapura Kencana and Seadrill – is the second in a series of five fully integrated offshore vessels, which will be completely designed, engineered and built by IHC Merwede. After delivery, the *Sapura Topazio* is – like her sister vessel, the *Sapura Diamante* – destined to go to Brazilian waters to develop deep-sea oilfields of up to 2,500 m on behalf of Petrobras.

The launching ceremony of the *Al Bahar*

Bram Roelse

The vessel will be equipped with a pipe-laying spread designed by IHC Engineering Business. She comprises two below-deck storage carousels, with capacities for 2,500 t and 1,500 t of product respectively. A vertical (tiltable) lay system – with a 550 t top tension capacity – will be permanently installed for the deployment of a range of flexible products. The tower orientation allows for maximum deck space, while utilising a high-capacity 610 t abandonment and recovery (A&R) system. A custom-designed control system from IHC Drives & Automation integrates each aspect of the pipe-laying spread to ensure excellent performance, safety and reliability.

IHC Merwede has also announced that it has appointed Bram Roelse as the company's new Chief Executive Officer (CEO) with immediate effect as of the beginning of April 2014. He has taken over this leading role within the company from predecessor Dirk Philips who stepped back in November 2013.

Mr Roelse (56) has worked at IHC Merwede for the past 13 years. He was originally appointed as the Managing Director of the company's business unit IHC Systems. At the end of 2004, he moved to the company's shipyard at Kinderdijk, where he became Director of the Dredging division.

As a member of IHC Merwede's Board of Management since 2002, Mr Roelse began work in his previous post as Chief Operating Officer (COO) in September 2013, when he also became a member of the Board of Directors. Prior to his time at IHC Merwede, he had gained invaluable experience in the naval shipbuilding and oil and gas industries.

IHC Merwede's Supervisory Board is convinced that Mr Roelse is capable of developing and continuing the company's business strategy, as the current direction that IHC Merwede is taking was partly his responsibility as COO.

## New PSD from HollandMT

For dredging and deepening of inland lakes, estuaries and mining & tailing ponds, HollandMT has developed a Plain Suction Dredger (PSD). The PSD350 Plain Suction Dredger is fitted with a 350 mm dredge pipeline system and is designed for dredging up to – 40 m below water level. Reduced dredging depth can be achieved by reducing the length of the lower dredge pipe.

The dredger is equipped with a high pressure jetwater system and a specially developed plain suction head which enables dredging of free flowing sands or silt-like material. The dredger is equipped with one submerged dredge pump on the ladder and one deck-based booster pump, enabling the dredger to pump the dredged

DAMEN DREDGING

# POWERFUL CUTTER SUCTION DREDGERS

**FACTS**

- a complete range of CSD's
- available from stock worldwide (COTS)
- 250 mm – 650 mm pipe diameters
- highly efficient Damen dredge pump
- effective dredging due to large swing width

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| PSD350 – principal particulars | |
|---|---|
| Length overall, ladder raised | 53.00 m |
| Length over pontoons | 24.00 m |
| Breadth moulded | 8.50 m |
| Depth hull | 1.80 m |
| Draught | 1.00 m |
| Maximum dredging depth | 40.00 m |
| Internal diameter of suction pipes | 350 mm |
| Internal diameter of discharge pipes | 350 mm |
| Total installed power | 1,400 kVA |
| Light ship weight | 120 t |
| **Tank capacities** | |
| Water ballast tanks | 2 x 8 $m^3$ |
| Water ballast tanks aft | 2 x 8 $m^3$ |
| **Dredge pump** | |
| Submerged pump, power | 350 kW |
| Booster pump, power | 550 kW |
| **Jetwater pump** | |
| Installed pump power | 150 kW |
| Operating pressure, maximum | 6 bar |
| **Winch system** | |
| Line pull Max Speed Wire storage | |
| Ladder hoisting winch (1 unit) 100 kN 20 m/min 50 M | |
| Ladder hoisting winch (1 unit), lower pipe 50 kN 20 m/min 100 M | |
| Mooring winches (4 units) 50 kN 20 m/min 100 M | |
| **Electrical system** | |
| Shore supply Voltage | 10 kV |
| Main electric users; | pumps, winches 690/440 V |
| Auxiliary systems | 440/110 V |
| Control systems | 24 V |
| **Auxiliary equipment** | |
| Deck crane hoisting capacity at max reach | 35 kN at 4 m |

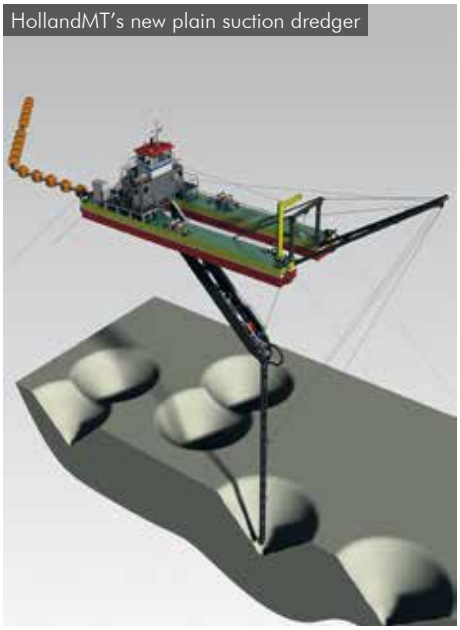
material to discharge distance of approximately 3000 m. The dredge is electric powered via shore supply (10 kV) and both dredge pumps are controlled by means of frequency converters. The dredge is moored by means of four electric mooring winches. The ladder and lower dredge pipe are raised by electric winches as well.

The fully air-conditioned control cabin is mounted on top of electric switchboard room, providing a clear overview of the dredging operations. The dredge is equipped with production measurement system, dredge monitoring system and dredge-track position system.

To construct the PSD350 at local shipyards, HollandMT can offer an engineering & equipment package, comprising:

- Set of fabrication drawings of hull, support structures and floating pipeline
- All electric drive and control systems
- Dredge and jetwater pumps and electric motors
- Winches
- Auxiliary equipment

HollandMT's new plain suction dredger



- Assembly and commissioning supervision

The above engineering & equipment package enables a local shipyard to construct and deliver a first class PSD350.

# Kent and Essex Fisheries Authority orders Blyth Workcat patrol boat

The Kent and Essex Inshore Fisheries and Conservation Authority (KEIFCA) has placed a contract for a 17 m GRP Blyth Workcat for use when monitoring fishing activities around the Kent and Essex coasts. The new boat is being built to meet the exact requirements of KEIFCA which has specified a durable craft capable of operating in extreme offshore conditions while undertaking a wide range of tasks relating to the monitoring of fish stocks and the supervision of fishing activities. It will be used for patrolling an area of over 3,412 $km^2$ extending from the east end of Rye Bay in Kent to the northern boundary of Essex on the River Stour.

The new boat will have a fine entry hull form and be fitted with two MAN V8- 900hp engines which will give it interception speeds of 25 knots even in sea conditions that other craft would find difficult. Double bulwark side doors on each side of the boat will permit the easy boarding of other craft when the need arises. In addition, a hydraulically operated launching platform in the stern will enable the boat's high speed RIB (Rigid Inflatable Boat) to be launched and recovered quickly and safely. This combination of craft will consequently give the KEIFCA boat crew access to all waters in its operating area whether 12 miles offshore or while patrolling the mud flats and cockle beds of the Thames Estuary.

The vessel is being built to comply with the Maritime and Coastguard Agency (MCA) Category 2 Code of Practice for the Safety of Small Workboats and Pilot Boats. This certifies it for carrying 12 persons plus two crew during operations in any weather up to 60 miles from a safe haven. Comfortable sleeping accommodation will be provided for up to six people and a fully equipped galley will ensure that the boat can remain at sea for extended periods if required.

The new Blyth Workcat patrol boat will be employed in monitoring the wide range of commercial and recreational fishing activities within the region. These include trawling, pair trawling, drift/fixed netting, potting, scallop and oyster dredging and cockle dredging. Trawlers and netters in the region land a variety of fish including soles, plaice, dab, bass, cod, herring, sprat and thornback rays. Other vessels within the district also land scallops, oysters, whelks, lobster and, to a lesser extent, mussels and crab. Sea angling is also an important recreation in the area as it supports

considerable commercial activity in the region's ports. The new patrol boat will be used during studies aimed at assisting and encouraging the development of this activity.

With a beam of 6.53 m the new patrol boat will provide spacious fore and aft decks and will be equipped with and a net and pot hauler that will be used for monitoring fish stocks. A hydraulic A-frame will be a key feature of the aft deck and will be used by the KEIFCA crew for a variety of tasks including the monitoring of shellfish and seabed conditions.

The new KEIFCA patrol boat is being built at the Blyth Workcats yard on Canvey Island, Essex and delivery is scheduled for Spring 2015 The company has been building GRP catamaran workboats at this yard for over 30 years and now has a range of craft in sizes up to 20 m. These are suitable for a wide range of applications that demand reliability and durability combined with good sea keeping and economy. In addition to patrol boats, Blyth Workcats are used for a variety of purposes including offshore survey, passenger transport, wind farm support, charter diving and angling, commercial fishing, aquaculture, fish farm operations and general port construction and engineering support tasks.

The Blyth Workcat

## Rolls-Royce water jets to power wind farm support vessels

Rolls-Royce has secured a contract to supply water jets for three wind farm support vessels to be built by South Boats IOW for the offshore wind transfer vessel operator Seacat Services.

In one of the biggest orders made for wind farm workboats, one 24 m and two 26 m aluminium catamarans, each featuring two Rolls-Royce 56A3 stainless steel water jets, will be used to transfer people and cargo to the growing number of offshore wind farms around the coast of Europe.

Andy Brett, Rolls-Royce Marine Sales Manager – UK, said: "We are delighted that Rolls-Royce has been selected to provide water jet technology for the next generation of European workboats being delivered by South Boats IOW. They are one of the leading builders of wind farm support vessels and we look forward to continuing our relationship with them in this expanding market.

"Rolls-Royce water jet technology offers a

combination of speed, efficiency and excellent manoeuvrability for these vessels, which will regularly operate in challenging sea conditions with strong winds and currents. These are essential factors when safely transferring people and equipment onto the turbine structures."

South Boats IOW, based on the Isle of Wight, is the market leader for the design and build of this type of vessel, purpose built to support the construction and maintenance of offshore wind turbines. This latest order brings the number of Rolls-Royce powered vessels in service or on order from South Boats IOW and their sister company Alicat Workboats to 24.

Ben Colman, Sales & Marketing Manager, Alicat Workboats Ltd. & South Boats IOW Ltd added: "Reliability and performance are of utmost importance in our industry and are how all vessels are measured, which is why we choose Rolls-Royce water jet units. With the A3-series we have found excellent performance with speeds higher than predicted with excellent fuel efficiency as a result. The build quality and reliability of the A3-series water jet units is clear to see, we have seen excellent reliability from the 20 units we have fitted over the last couple of years."

Also featuring on the vessels is Rolls-Royce's new compact control system for water jets, which is completely tailored to suit owners' requirements and reduces build and installation times. The new wind farm work boats will include MTU 12V 2000 engines which will power the catamarans to speeds of up to 30 knots.

## Sure Wind takes delivery of Damen Twin Axe FCS 2610

UK's Sure Wind Marine has taken delivery of its second Damen Twin Axe Fast Crew Supplier – the *Sure Swift* – in a little over a month after the first joined the company's fleet. Established in 2009, Sure Wind is a specialist in the German offshore wind market and now has 10 dedicated wind farm service and crew transfer vessels, the latest two being the first newbuild Damen vessels.

Sure Wind also owns the first FCS 2610 ever built – the pioneering *Shamal* (renamed *Sure Shamal*) – which it acquired in July 2013.

The Damen vessels have certainly proven themselves and are hugely popular with customers, says Lucy Kibler, Sure Wind Vessel Operations Co-ordinator. "Enquiries are unbelievable – Damen has really set the standard for a crew transfer vessel. The Twin Axe is in a different league in terms of seakeeping and crew comfort. We aim to be the preferred crew transport vessel company and Damen helps give us the market presence. Customers want these vessels."

The *Sure Shamal* has been working at the Barrow Offshore Wind Farm from October 2013 to end-March this year, before heading off for her next job in April. The *Sure Star* and *Sure Swift* will be based in Eemshaven before being deployed in the German offshore wind market but again, the *Sure Star* has pretty much had non-stop work since joining Sure Wind's fleet.

"One of the advantages of the vessels is that they are excellent sea keeping vessels even in the winter months, and still maintain their passenger comfort. Sure Wind does not rule out the addition of more Damen vessels in the future. The company has exciting expansion plans, which would involve an extensive fleet expansion. We can see more Damen vessels on the horizon." **PEM**

The hand-over of the Damen Axe FCS2610

# DREDGER DESIGN and EQUIPMENT

HollandMT provides a wide range of engineering services and equipment for construction and maintenance of stationary- and self propelled Hopper Dredgers.
Using latest state of the art 3D engineering and FEA strength analyses, HollandMT designs and fabricates customized dredge parts and systems.
HollandMT can also assist shipyards and dredging contractors to construct first class dredgers and can supply engineering, supervisory services and first class dredging equipment, such as:

- ✓ Dredge pumps, inboard and submerged units
- ✓ Dredge pumps drives, electric and diesel powered.
- ✓ Dragarms
- ✓ Various types of dragheads
- ✓ Gantry systems
- ✓ Winch, rope wire and sheave systems
- ✓ Mild steel dredge pipe lines
- ✓ Rubber ring gate valves
- ✓ Rubber dredge hoses
- ✓ Degassing systems
- ✓ Balljoints
- ✓ Bow Couplings
- ✓ Quick Release couplings
- ✓ Monitor guns
- ✓ Spud mooring systems, including spuds and spud-carriage
- ✓ Hydraulic cutter drives
- ✓ Dredge instrumentation and monitoring systems

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# Projects

Stephen Hull

## ABPmer assist UK Shipping and fishing management

ABP Marine Environmental Research has been contracted by the Marine Management Organisation (MMO) to expand upon their recently published MMO1042 Shipping Activity Project. This latest commission will see the company provide mapping of UK shipping activity and data processing tools to produce UK spatial datasets from raw Automatic Information System (AIS) data.

The work will allow the Steering Group (MMO, the Department of the Environment Northern Ireland, the Welsh Government, Marine Scotland and the Crown Estate) to improve their shipping data capabilities, leading to a better understanding and management of marine socio-economic activities and resources.

Stephen Hull, Project Director said: "We are delighted to be given the opportunity to take forward our work on how AIS data can inform marine planning and management. As well as creating baseline maps of UK shipping use, we will also develop open source tools that will allow the MMO and other devolved administrations to create data to inform marine planning and marine licensing. The project represents a step change in the use and presentation of commercial shipping AIS data and will be of interest to the wider marine community."

ABPmer has also been commissioned by Natural England to compile information on population trends of protected bird species within Special Protection Areas. The study will help develop the evidence base that Natural England and the inshore fisheries regulators will use to determine whether management measures are required to ensure that fishing activities will have no adverse effect on the integrity of European Marine Sites (EMS).

As part of Defra's revised approach to the management of commercial fisheries in EMS in England, the fisheries regulators (the Inshore Fisheries and Conservation Authorities (IFCAs) or the MMO for sites between 0-6 nm and 6-12 nm respectively) have responsibility for determining the potential direct and indirect effects of existing fishing activities on the designated features of Special Protection Areas (SPAs). This includes breeding and non-breeding qualifying bird features as well as their supporting habitats.

Stephen Hull, Technical Director at ABPmer said: "ABPmer is delighted to have been awarded this project. We have extensive experience of working with public bodies to provide robust environmental advice in support to evidence-based decision making.

"The aim is to use existing bird population data to help the fisheries regulators prioritise the English SPAs' assessments, by highlighting the populations that may be subject to site-specific pressures. We will review the data to determine whether there is any evidence that any of the Natura 2000 sites or species is demonstrating trends that are inconsistent with regional or national trends. The outputs will be used to help identify site specific pressures that could be causing such discrepancies."

The final report is expected to be submitted at the end of March 2014. If management measures are required these will need to be implemented by the inshore fisheries regulators by 2016.

ABPmer has an in-depth understanding of ornithology, through undertaking monitoring and impact assessment work, including the interpretation of raw data derived from survey results, comprehensive desk-based reviews on the subject and developing ecological models. Such predictive ecological models, developed by ABPmer and the Centre for Ecology and Hydrology (CEH), have been used by Natural England in the context of providing their conservation advice for SPAs.

## Boskalis notified of intention to award salvage contract for *Baltic Ace*

The Dutch Department of Public Works intends to award the contract for the salvage of the wreck of the car carrier *Baltic Ace* to Boskalis and its partner Mammoet Salvage. The wreck and its cargo need to be removed because they pose a threat to the environment and to shipping on the busy route towards the Port of Rotterdam. The Department of Public Works expects the definitive signing of the contract in the second half of March 2014. Execution of the project is expected to commence in the course of 2014 and will be completed before the end of 2015.

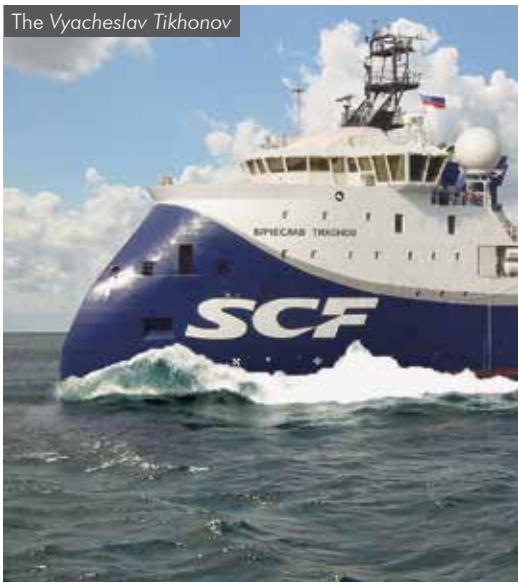
The activities include the removal of the entire wreck, its cargo and 540,000 litres of fuel oil for which a diving support vessel, tugs, barges and sheerlegs will be deployed as well as equipment from SMIT joint venture Asian Lift and Boskalis subsidiary Dockwise. Specialist salvage equipment will also be deployed.

## Nordic Maritime wins offshore seismic contract

Singapore-based offshore specialist Nordic Maritime has been awarded a US$23.5m contract to provide 3D marine seismic data acquisition and processing services off the coast of Andhra Pradesh, India, to Cairn India Limited, starting later this month.

The contract will see Nordic Maritime collaborate with SCF Geo of Russia and will feature the group's seismic survey vessel *Vyacheslav Tikhonov*. The *Vyacheslav Tikhonov* will survey approximately 1,000 kms$^2$ of ocean bed. The project will also include the acquisition of gravity and magnetic data alongside the seismic data near Nizamapatnam Bay.

The *Vyacheslav Tikhonov* was built in 2011 and is operated by SCF GEO, based in St Petersburg. To support the 3D data acquisition programme, Nordic and SCF Geo will charter and mobilise a supply ship and 10 chase vessels



The *Vyacheslav Tikhonov*

locally from Indian owners. She is an 8-streamer state of the art seismic survey vessel, based on the X-bow Ulstein design from Norway.

Nordic Maritime confirmed the project had a starting date of 15 March, will last three months, and so is due to complete by the middle of June. The vessel is due to depart from the Port of Kakinada. She will be covering a total area of 1,023 kms$^2$ during the project.

Nordic Maritime's Chief Executive Officer, Kjell Gauksheim said today: "This award from Cairn Energy for work offshore India is naturally exciting for Nordic and our partners. We are pleased to be entrusted with it and we will perform as always to our established high standards. We believe there are more opportunities like this in the region and we are open to more contracts of this sort in future."

## Concept jetty design by BMT

BMT Asia Pacific Pte Ltd (BMT), a subsidiary of BMT Group Ltd, has completed a concept design for the Material Off-Loading Facility (MOLF) at Petroliam Nasional Berhad's (Petronas') proposed Refinery and Petrochemical Integrated Development (RAPID) complex in southeast Johor, Malaysia.

The RAPID project will help to address the growing need for petroleum and commodity petrochemical products in the Asia Pacific region. The proposed RAPID refinery will have a capacity of 300,000 barrels per day that will produce naphtha and liquid petroleum gas (LPG) feedstock for the RAPID petrochemical complex, as well as gasoline and diesel that meet European specifications. The RAPID petrochemical complex will have a Naphtha Steam Cracker that will produce a number of commodity products. In addition to the production units, the RAPID development will provide storage and logistics facilities for a number of dry and liquid bulk products.

An aerial view of the jetty

Working in partnership with Technip, the front-end engineering design (FEED) contractor for the project, BMT provided a concept design for a temporary, heavy lift jetty. This jetty will be an integral part of the infrastructure needed to realise the RAPID project. Per Cato Roed, Managing Director of BMT Asia Pacific Pte Ltd explains: "Given that heavy lifts of specialised modules and equipment will be performed at the jetty during the RAPID project construction phase, we needed to carefully consider the customer's requirements and ensure an optimum layout. Taking the temporary nature of the jetty into consideration, it was also important for us to optimise the design in relation to several dimensions, notably sedimentation and maintenance dredging requirements."

BMT carried out the conceptual design of the MOLF, covering geotechnical and marine structural engineering design activities, as well as a number of specialist studies and surveys needed for adequately evaluating the options available.

Marine studies utilising BMT's navigation simulation tool, REMBRANDT, were also completed to better understand the possible operational limits associated with the ships coming into the port and therefore the impact this would have on the jetty design.

Per Cato Roed continues: "Our proven track record and extensive experience, supported by sophisticated design and optimisation tools has allowed us to provide an optimum design for our customer."

## GeoSea has started the third cycle on Westermost Rough

With the departure of the installation vessel Innovation from the port Aalborg, GeoSea has now started the third foundation installation cycle on the Westermost Rough offshore wind farm. Innovation loaded five large monopiles and transition pieces of the next installation cycle in the port of Aalborg, which are currently transported across the North Sea to be installed immediately on the off shore site 9 kms from Hull. Already 10 monopiles and transition pieces are installed off shore.

GeoSea started during end-February with the first location and is still on schedule even with the winter storms and the particular challenging soil conditions on the offshore site.

The Innovation is performing very well thanks to use of a highly sophisticated piling frame and improved jacking procedures, both developed by GeoSea's in house engineering department. This groundbreaking approach allows Innovation to work in higher sea states and leads to decreased cycle times. The installation works are scheduled to be finished by June 2014.

## SAM Electronics package for EnBW Baltic 2 Wind Farm

L-3 SAM Electronics has been commissioned by steel contractor Bladt Industries A/S of Aalborg, Denmark to outfit transition pieces for the EnBW Baltic 2 wind farm due to become operational this year. "The EnBW Baltic 2 project is the second major turnkey wind farm contract to have recently been awarded to L-3 and further underscores the effectiveness of our Marine & Power Systems (M&PS) wind energy working group in utilising its broad capabilities to meet customer needs," said Juergen Meyer-Pepel, Senior Vice-President of L-3 SAM Electronics.

"Headed by SAM Electronics, the group includes L-3 ELAC Nautik, L-3 FUNA Global Safety Systems and L-3 JOVYATLAS, and is providing dedicated solutions for offshore energy wind farms and associated support facilities throughout Europe, including the DanTysk accommodation platform project."

In support of the EnBW Baltic 2 effort, SAM will supply and install low-voltage switchgear and transformers and all lighting in addition to providing and installing ventilation facilities, sea markings and sonar transponders, as well as a comprehensive range of automated safety and rescue equipment and corresponding cable installations. Also to be supplied are sea markings for the offshore transformer substation.

The second largest wind farm venture in the Baltic Sea following earlier inauguration of the EnBW Baltic 1 wind farm in 2011, the new farm is located close to the border of Denmark and Sweden, 32 kms from the German coastline at the Island of Rugen. Comprising 80 wind turbines over an area of 27 kms2 with a total output capacity of 288 MW, it will provide electricity for 340,000 households while reducing annual carbon dioxide emissions by an estimated 900,000 t.

The EnBW Baltic 2 wind farm

## New Siemens plant in Hull

Siemens has confirmed that it will be investing £160m in wind turbine production and installation facilities at Associated British Ports' (ABP) Port of Hull. The revised plan will be spread across two sites including the 'Green Port Hull' site on Alexandra Dock at the Port of Hull, which will comprise a construction, assembly, and service facility, and a new rotor blade manufacturing facility in nearby Paull in the East Riding. This marks an expansion of the original plans announced in 2011 and establishes Paull as an industrial park for the offshore wind supply chain to base itself.

ABP is investing £150m in the project, which will provide a huge boost to the UK's offshore wind industry and the Humber region, creating up to 1,000 jobs directly, with additional employment opportunities generated during construction and within the supply chain.

ABP's Port of Grimsby already benefits from the offshore wind revolution across the Humber. Many energy companies such as Centrica, E.On, and Siemens have already established Operations and Maintenance bases in the Fish Dock, and earlier this year the Danish energy company DONG confirmed it has chosen Grimsby's Royal Dock to base its own Operations and Maintenance centre.

Roland Aurich, Chief Executive, Siemens PLC said, "Being able to further increase our presence in the UK with this significant commitment is great for Siemens, for the UK economy and for future generations, who will benefit from more secure and sustainable, low carbon energy."

The Green Port Hull project is the product of a huge team effort between many national and local political, business, and community partners and many people within Siemens in the UK, Denmark, and Germany, and ABP.

Siemens and ABP will be submitting planning applications to Hull City Council and East Riding Council over the next few months for revisions to the existing proposed scheme at Alexandra Dock and for land in Paull in East Riding for the wind turbine blade factory.

> "Being able to further increase our presence in the UK with this significant commitment is great for Siemens, for the UK economy and for future generations"
>
> **Roland Aurich**
> **Chief Executive, Siemens PLC**

Green Port Hull is planned to be operational to meet Round 3 requirements in early 2016. The start of production at the blade factory is scheduled to be in the middle of 2016 with full production levels reached from mid-2017 onwards, when Hull will be the UK's City of Culture. **PEM**

# People

## Marseilles Fos supervisory board approves CEO nomination

The Marseilles Fos port authority's supervisory board has backed a French transport ministry proposal nominating Port of Dunkirk head Christine Cabau Woehrel as the new CEO in Marseilles. Her appointment to the executive board will now be ratified by a ministerial decree. Backing for the nomination came on 14 February when the supervisory board launched its latest five-year term by also electing a chairman and deputy chairman from the 17-strong line-up of governmental, industry, business and staff representatives.

The new chairman is 54-year-old financier Jean-Marc Forneri, who has served on the board since it was formed in 2009. M. Forneri has been the founder chairman of leading French mergers and acquisitions specialist Bucephale Finance since 2004. He previously held high-profile posts with ski equipment manufacturer Rossignol, the Worms conglomerate and the Credit Suisse banking group. He has also acted as a political advisor on industry and finance since the 2008 world economic crisis.

The deputy chair is supervisory board newcomer Delphine Andre, 47, chairman and managing director of the Charles Andre Group, the logistics, cleaning services and hotels company founded by her grandfather in 1932. She has led the group since 2002 after previously working as a barrister.

The French port reforms of 2008 established a three-tier management structure of executive, supervisory and development boards. A maximum of three further executive directors will be nominated by the new CEO for approval at an impending meeting of the supervisory board. Membership of the renewed development board – composed of port professionals, union representatives and local authorities – will also be finalised in the coming weeks.

J M Forneri

Richard Wrench

## Tideland appoints Sales Manager for UK and Ireland

Tideland Signal has appointed Rick Wrench (39) Sales Manager for its range of aids to marine navigation in the UK and Ireland. Rick brings to his new position a wealth of experience of technical lighting products particularly for hazardous applications in the marine sector, offshore oil and gas, petrochemical and other industries. He joins Tideland from STL International and was previously with IMT Lighting and Ecom Instruments.

Commenting on his appointment, Rick Wrench said: "For me, Tideland represents an exciting opportunity to focus my experience of technical lighting on the benchmark product range within the marine industry. Despite the worldwide reputation of these products, Tideland has not previously dedicated resources to concentrating exclusively on UK and Irish ports and harbours. I am looking forward to introducing world-beating products like the highly reliable and robust Nova-65 and the self-contained Sola Nova-65 model with integral solar modules and battery to a whole generation of new users on our home territory."

## BMT Smart appoints new Product Manager

BMT Smart, a subsidiary of BMT Group Ltd, has announced the appointment of Laura McKelvie as Product Manager. A University of Southampton graduate in Naval Architecture, Laura has been working with BMT for five years specialising in vessel performance monitoring and analysis. She has been involved in all aspects of the BMT Smart product offering including performance analysis and consultancy and product installations on a variety of vessels.

BMT Smart delivers vessel and fleet performance management tools to the marine industry. Laura's new role will see her taking responsibility for the products from conception through to delivery. Working with her team of Product Consultants, Laura will ensure that BMT delivers a client driven product to this growing market.

Peter Mantel, Managing Director at BMT Smart comments: "We are delighted to see Laura in this new role. Her in-depth product and market knowledge, her drive for perfection and her customer relationship skills will guarantee an exciting development roadmap for the BMT Smart product suite."

Laura has a Master of Engineering degree in Ship Science (Naval Architecture) and is a member of the Royal Institution of Naval Architects.

Laura McKelvie

## Nodulier 2022 winner in the Worldwide Innovation Challenge

The French Prime Minister, Jean-Marc Ayrault, and Anne Lauvergeon, Chair of the 2030 Innovation Committee, have announced the first winners of the Worldwide Innovation Challenge at the Matignon. 'Nodulier 2022', a partnership between SDI (Société de Dragage International, part of the DEME Group), OceanflORE and G-Tec SAS, is one of the winners of this prestigious competition.

In April 2013, the President of the Republic, François Hollande, set up the Innovation

2030 Commission, which is chaired by Anne Lauvergeon. This Committee explored the major global challenges for 2030 and has identified a limited number of opportunities.

At the conclusion of this exercise, seven ambitions were outlined. They rest on strong societal expectations, on growth sectors: Energy Storage; Recycling of Metals; Development of Marine Resources; Plant Proteins and Plant Chemistry; Personalised Medicine; the Silver Economy (innovation at the service of longevity) and Big Data.

OceanflORE and G-Tec SAS participated in this competition. The grouping intends to set up a consortium for the harvesting of polymetallic nodules in partnership with French and European 'consumers' of these raw materials.

For the development of a technical and operational solution, the partnership has completed the general feasibility study of harvesting nodules by means of proven technology. To conduct a harvesting test, Nodulier 2022 will initially focus on the design and the laboratory testing of the harvesting vehicle, the collector, the riser transfer pipe and the vehicle launch and recovery system, including a feasibility study on processing and utilisation of manganese nodules.

## New Plymouth Office for BMT Isis

BMT Isis Ltd (BMT), a subsidiary of BMT Group Ltd, the leading international maritime design, engineering and risk management consultancy, is delighted to announce the opening of its new office in Plymouth. The new office in Plymouth's city centre which was officially opened by Oliver Colvile, MP for Plymouth, Sutton & Devonport, will allow BMT Isis to expand its existing business of providing Safety, Environment and Security consultancy to the Defence and Transport industries. It will also help support the organisation's new Weapons, Ordnance, Munitions and Explosives capability which aims to address the growing need within industry and the MOD for highly qualified explosives safety personnel.

Mike Prince, Managing Director of BMT Isis comments: "This is an exciting time for the company and we're looking forward to developing local relationships in Plymouth and building on the success of BMT Isis in the UK and overseas. Given Plymouth's historical links to the Royal Navy and its renowned ship repair, refit and marine engineering prowess, it is the perfect location for this latest expansion. There is an increasing demand for the services we offer which is why we are actively recruiting people who have design, operational and/or maintenance experience with submarine, ship or weapons systems."

The Plymouth office opening – (left to right) Oliver Colvile (MP), Mike Prince (BMT), Pauline Murphy (Councillor), Nigel Churchill (Deputy Mayor) and Maj Gen David Hook (Royal Marines)

The opening ceremony also provided BMT Isis with the opportunity to further demonstrate its commitment to the local community by officially signing the Community Covenant which complements at a local level, the Armed Forces Covenant.

Mike Prince continues: "This Covenant further demonstrates BMT's concrete support to the Armed Forces community and their families. As well as taking part in a number of volunteering events, including local cadet units, we have over 100 veterans and a number of Armed Forces Reservists working across BMT.

This community offers hugely valuable skills and knowledge and we will continue to support them and mutually benefit from their experience wherever possible."

## Moucheltrio bolsters maritime growth capability

Mouchel's Maritime business has bolstered its capability and capacity for growth with a trio of recent senior level appointments. Phill Sanderson as Projects Director and David Laird as Technical Director have joined within months of the company recruiting Kevin Barton as Projects Director.

Divisional Manager for Maritime, Sean Barker, said their arrival brings on board a huge amount of experience. "These appointments also provide a platform to support our continuing growth – there are significant opportunities for us in the UK and internationally, particularly in markets in which our ability to deliver is already established.

"These appointments bring additional capability, both in project governance and technical delivery, and strengthen our ability to provide clients with the high standards of service they expect from Mouchel."

David Laird brings experience from Australia, Canada, India and the Middle East as well as the UK to his post of Technical Director to the Maritime team in Liverpool. He joins from Ausenco where he was Maritime Manager for its North American operations.

Phill Sanderson joins from Royal Haskoning DHV where he was Senior Project Director. He has delivered projects in Australia, Azerbijan, the Middle East, the UK and West Africa for a broad range of clients. Phill has taken on responsibility as Projects Director for projects delivered by the Maritime team in Woking.

Kevin Barton, Projects Director for the Liverpool team, joined Mouchel in mid-2013 from Peel Ports Ltd where he was a Senior Marine Manager focused on supporting Marine Operations and Capital Project Delivery. He has delivered projects in the UK and throughout the Middle East, and is also a Non-Executive Director of the Association for Project Management. **PEM**

# Lock Gate

## Exciting times at WEDA

**The Western Dredging Association (WEDA) is a non-profit professional organisation that fosters the knowledge and understanding of dredging throughout the western hemisphere. WEDA's overarching goal is to provide a forum for communication and discussion, technology transfer, and co-operation among the dredging industry, researchers, educators, consultants, ports and harbour authorities, agencies (including the U.S. Army Corps of Engineers, and others), trade associations, societies and other organisations interested in dredging, navigation, marine engineering and construction. It promotes and emphasises the critical importance of dredging as it relates to economic development, while emphasising protection of the marine environment.**

Following is a summary of key WEDA developments:

- "Last year, we revised and updated our organisation's bylaws, with a focus on advancing WEDA's objectives related to technology transfer, a venue for open communications and debate, and cooperation across sister organisations, both in Western hemisphere, as well as around the globe.
- "We now have a highly involved Board of Directors, and they have volunteered considerable amount of time towards many initiatives and committees. We have recently formed several committees with active board participation, as summarised below.
- "We are now taking advantage of our website with a much more robust communication filter and more frequent updates to the site information. We intend to do much more, so stay tuned. (Maybe, there would even be a possibility to purchase WEDA gear in the near future!)
- "We have started the process of seriously revamping our conferences, by gathering and incorporating feedback from our members for plannin
  - Our annual conferences will now include technically relevant site tours (either pre- or post- conference, including this year's Hamilton Harbour site visit, one of Canada's premier environmental projects.
  - In the very near future, we will add short, pre-conference workshops on technical and practical topics so that our members can obtain even more value from our conferences.
  - Last, but not least, we will be rebranding our conferences, starting in Toronto, to more appropriately reflect our mission. Accordingly, the Toronto Conference shall be named, "Dredging Summit and Expo 2014", organised by the Western Dredging Association and Texas A&M University Centre for Dredging Studies
  - All future annual meetings will have a similar branding name, with the year updated, and reflect added emphasis on quality technical papers, specially invited project case studies, environmental and safety discussions, pre-conference workshops, post-conference technical tours, and an expanded exhibit focus.
- "In 2014 and beyond, we will be embarking on several new missions, to open new doors of international cooperation and market exposure to our members. Specifically, we will start by focusing on our Canadian partners with our 2014 conference and additional efforts to better connect with the dredging community in the Latin American countries.
- "Other initiatives include the creation of our 'Events Committee', whose charge is to focus on identifying best and most appropriate marine-themed venues for our annual meetings and identifying technical and cultural tours as part of those meetings. Already, the committee has made significant strides, and we are pleased to report the following:
  - The 'Dredging Summit and Expo 2014' is developing into a strong conference in Toronto, with a huge response to our call for papers, and associated technical program.
  - We are pleased to announce that the 'World Dredging Congress XXI' will be held in Miami in 2016. A very strong technical and cultural program is being developed – more on that soon.
  - The events committee is very close to finalising an interesting venue for our Dredging Summit and Expo 2015, which will have a very strong Latin American market focus!
- "We will also continue to publish electronically, our WEDA Journal of Dredging, twice/year, but with renewed focus on the dredging industry and dredging research.
- "We have also created several other initiatives, to name a few,
  - The Annual Awards Committee
  - The US Army Corps of Engineers' Committee, and,
  - The Newsletter & Communications Committee
- "Last, but not least – our long time Executive Director, Larry Patella, after his many years of service to the organisation, will be transitioning into a 'Consultant' role after the Toronto conference. We have initiated the search for a new "Executive Director" for the organisation to fill this vacated position. More on that will be announced soon as well.
- "As you can see from this note, exciting times lie ahead for WEDA. We hope that you, as a member and friend of WEDA, will join our active Board in advancing these initiatives that are so vital to the continued economic development of trade around the western hemisphere, and even around the globe!" **PEM**

# Contact Directory

## Brokers

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Tel: +32 (0)3 226 26 10
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Email: info@imcbrokers.com
Web: www.imcbrokers.com

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Denso House, Chapel Road, London SE27 0TR, UK
**Tel:** 0208 670 7511
**Fax:** 0208 761 2456
**Email:** mail@denso.net
**Website:** www.denso.net
**Products:** Manufacturers of corrosion prevention coatings and sealing products for use on buried, submerged or exposed steel in aggressive environments.

## Dredge Builders

### IHC MERWEDE
PO Box 204
3360 AE Sliedrecht
The Netherlands
Tel: + 31 184 411555
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## Dredge Components

### DAMEN DREDGING EQUIPMENT BV
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## Dredge Builders

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Tel: +31 33 247 40 40
Fax: +31 33 247 40 65
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Contact: David Tenwolde
Design and manufacture of tailor-made dredging equipment as cutter suction dredgers, stationary mining dredgers, trailing suction hopper dredgers, booster stations, DOP submersible dredge pumps etc.

## Dredge Builders

### ELLICOTT DREDGES, LLC
1425 Wicomico Street
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## Dredge Components

### MACHINEFABRIEK L. STRAATMAN BV
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+31(0)6 838 10 666

Specialist in designing and producing quick release mooring and towing hooks and dredging equipment such as bow couplings, ball turning gland, ball joints, jet water monitors and custom made specials.

## Dredge Components

### VANDEGRIJP BUIZEN (PIPES & PARTS) BV
Rietgorsweg 11, PO Box 72
3350 AB Papendrecht, The Netherlands
Tel: +31 78 644 64 64
Fax: +31 78 644 64 65
Web: www.vandegrijp.com

Manufacturer of dredging equipment. Production and sale of dredging-pipes and accessories. Hire of pipes, bends, valves, split barges, pontoons and hopper barges.

## Dredge Components

### IHC PARTS & SERVICES BV
PO Box 50, 2960 AB Kinderdijk
The Netherlands.
Tel: +31 78 691 02 97
Fax: +31 78 691 04 39
Email: info.ps@ihcmerwede.com
Web: www.ihcps.com

## Dredge Instrumentation

### DAMEN DREDGING EQUIPMENT BV
Edisonstraat 32
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PO Box 1021
3860 BA Nijkerk
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Tel: +31 33 247 40 40
Fax: +31 33 247 40 65
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Web: www.damendredging.com
Contact: Contact: David Tenwolde

## Dredge Pipe & Hose

### TRELLEBORG EDE BV
Knuttelweg 8
6718 ZD Ede
The Netherlands
Tel: +31-318-617112.
Fax: +31-318-615832.
Email: cees.de.neys@trelleborg.com
Web: www.trelleborg.com/infrastructure
Contact: Cees de Neys; Arsène te Beek

## Dredge Equipment

### HOLLAND MARINE TECHNOLOGIES BV
Pompmolenlaan 13
3447 GK Woerden
The Netherlands
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Fax+31 348 410019
E-mail: info@HollandMT.com
Web: www.HollandMT.com
Contact: Jan W. de Wit

Supply of dredge engineering and equipment packages for THSD, Backhoes, CSD, WID and split-barges.

## Dredge Hoses

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Email: info.ps@ihcmerwede.com
Web: www.ihcps.com

## Dredging Consultants

### ANTHONY D BATES PARTNERSHIP LLP
**Dredging, Harbour and Coastal Consultants**
Laburnham Farm
Upper Weare
Axbridge
Somerset
BS26 2LE
United Kingdom
Tel: +44 1934 732380
Fax: +44 1934 733439
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## Dredging Contractors

### ROHDE NIELSEN A/S
Nyhavn 20
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**Fax:** +45 33 91 25 14
**Email:** mail@rohde-nielsen.dk
**Web:** www.rohde-nielsen.dk
**Contact:** Mrs Jeanette Rohde, MD

## Dredging Contractors

### DETLEF HEGEMANN DREDGING GMBH

Arberger Hafendamm 16
28309 Bremen, Germany
Tel: +49 421 4107 201
Fax: +49 421 4107 299
Email: info@dh-dredging.de
Web: www.hegemann-gruppe.de

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## Dredging Contractors

### DUTCH DREDGING BV

Dr. Langeveldplein 11, 3361 HE Sliedrecht,
The Netherlands
Tel: +31 184 411999
Fax: +31 184 411998
Web: www.dutchdredging.nl
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## Dredging Contractors

### GULF COBLA (L.L.C.)

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PO Box 5708
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## Dredging Contractors

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## Dredging Contractors

### GREAT LAKES DREDGE & DOCK CO

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Bill Hanson, VP, US Business

## Dredging Contractors

### HALL CONTRACTING

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Web: www.hallcontracting.com.au

## Dredging Contractors

### VAN OORD DREDGING AND MARINE CONTRACTORS

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3009 AN Rotterdam
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Fax: +31 88 8265010
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Web: www.vanoord.com

Van Oord's *HAM 318* in Sembawang Shipyard

# Contact Directory

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Boskalis
Dredging & Marine Experts

### ROYAL BOSKALIS WESTMINSTER NV

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## Marine Drilling & Blasting

Boskalis
Rock Fall

### ROCK FALL COMPANY LTD

Unit A1a Olympic Business Park
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## Hoses

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Division ContiTech of Continental AG

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Fax: +44 (0) 1472 362948
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Contact: John Cunliffe
Sales & Marketing Manager

E+S
Division ContiTech of Continental AG

EDDELBÜTTEL + SCHNEIDER GmbH
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Fax: +49 (0) 40-767 36677
Email: hhesinfo@fluid.contitech.de
Web: www.e-s.de
Contact: Marcus Prinz

ContiTech

## Marine Drilling & Blasting

GREAT LAKES DREDGE & IMPROVEMENTS

### GREAT LAKES DREDGE & DOCK CO.

2122 York Road, Oak Brook Ill.
60521, USA
Tel: +1 630/574-3000
Fax: +1 630 574 2419
Email: WHHanson@gldd.com
Web: www.gldd.com
Contact:
Dave Simonelli, President Dredging Operations
Bill Hanson VP, US Business

## Marine Drilling & Blasting

Wicks

### WICKS

Jan Blankenweg 2
4207 HN Gorinchem
PO Box 3110
4200 EC Gorinchem
The Netherlands
Tel: +31 88 8265500
Fax: +31 88 8265510
Email: info@wicks.nl
Web: www.wicks.nl

## Oceanographic/ Hydrographic Equipment

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United Kingdom
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**Fax:** +44 (0)1803 869293
**Email:** sales@valeport.co.uk
**Email:** kedwards@valeport.co.uk
**Web:** www.valeport.co.uk
**Contact:**
Kevin Edwards, Sales Manager

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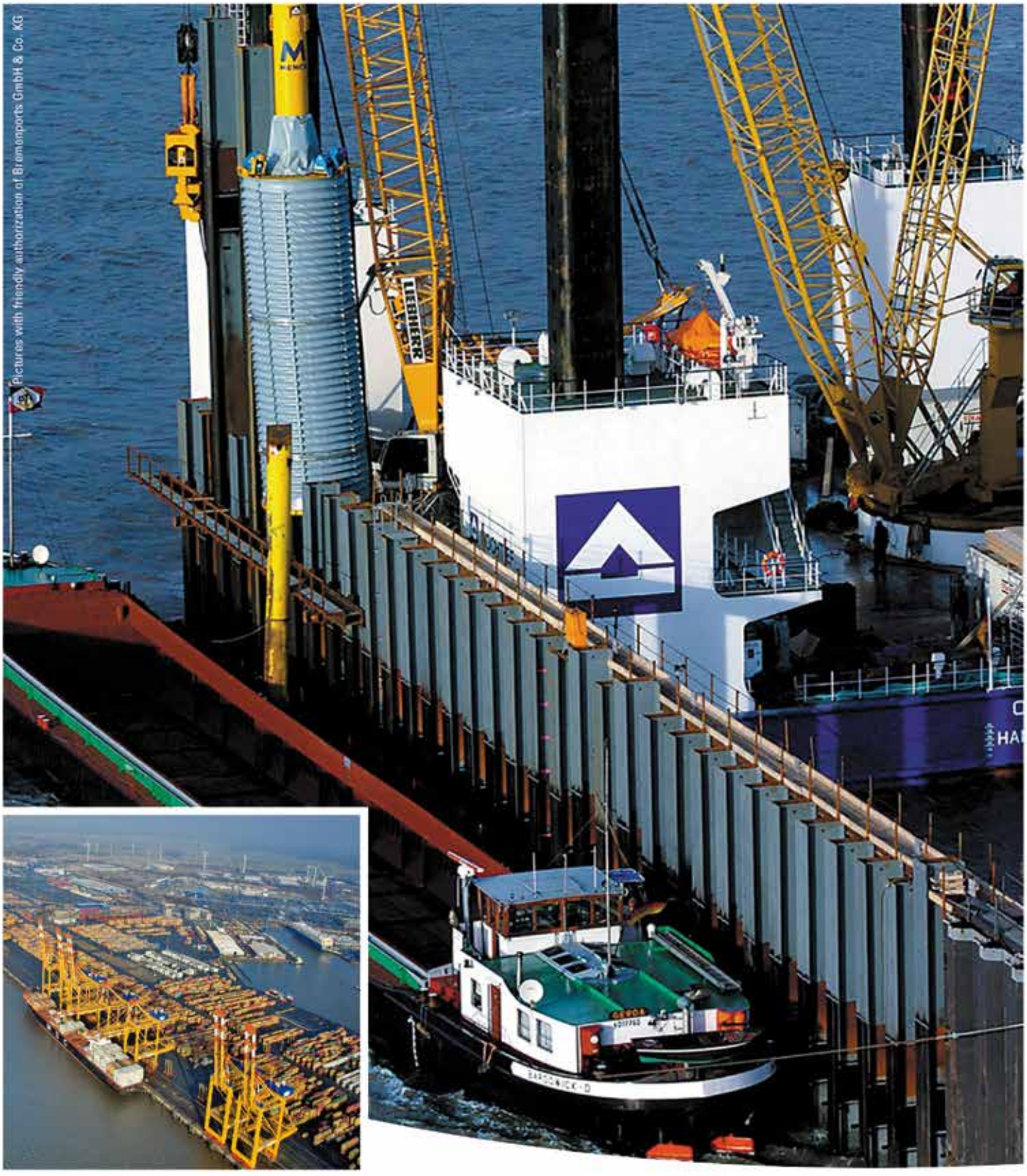




Port of Bremerhaven, Germany
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The PUR anti-corrosion coatings were found to still be in good condition.

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