



Aluminium Offshore



First in Safety. First in Service.

Relationships built on trust

“ We don't just build structures. We innovate, research, refine, test... and then do it all over again. We simply thrive on challenge – we have always delivered on time and with safety. Our credo of service has been tested for over twenty five years. Not surprisingly, more than 80% of our business comes from existing customers. ”



Neelesh Uppal
Managing Director, Aluminium Offshore

World leader in offshore aluminium structures.

THE ALUMINIUM OFFSHORE INNOVATIONS

1986

ASTECH Pte Ltd founded

1988

Built world's first aluminium Enhanced Safety Helideck



2004

First DIFFS installed for our helideck for Shell E11 platform



2006

Awarded ISO 9000 certification

2008

Installed the first aluminium helideck allowed in US waters on Shell Perdido



2011

Awarded ISO 18000 certification

2012

Patent for new safety helideck granted in several countries

A pioneer in the design and production of aluminium alloy structures since 1987, Aluminium Offshore and its subsidiaries have established a reputation for flawless design, clockwork execution and excellent customer service.

As one of the world's largest, specialist design-and-build companies, we offer turnkey 'design, supply, assemble' packages for upgrading traditional steel and concrete structures to aluminium, both offshore and onshore.

We have an impressive track record in designing, producing and installing large structures in aluminium alloy. Many of these are unique and 'world-firsts', calling for in-depth applied research in material technology, joint configurations, fatigue design and fastening methods.

Why aluminium trumps steel

- Near zero maintenance costs
- 50-70% savings in weight
- Low capital costs, low total cost
- Longer life span
- Greater recyclability

Impressive track record

- Designed and built Asia's first aluminium helideck in 1988
- Designed and built world's largest helipad in Hong Kong in 2008
- Perhaps the largest helideck builder in the world—over 400 helidecks installed across the planet

Just some of the many world-renowned clients we've been privileged to serve.



XE



XE Enhanced Safety helideck: helping save lives in helicopter mishaps.

An accident during helicopter landing or takeoff could send vast amounts of jet-fuel spewing from ruptured fuel tanks—and the intense, fuel-based fire could quickly spread on a flat helideck, making passenger rescue very dangerous. In a crisis where the priority should be evacuating crew and passengers to safety, precious seconds are lost in fighting the helideck fire.

Engineered to specifically reduce these risks and enhance crew and passenger safety, our Enhanced Safety (previously known as Astech® Safety) Helideck is the world's first-of-its-kind. Launched in 1988—and refined continuously over the years—it boasts an array of innovative safety features that have helped it make it the preferred option for offshore installations across the globe.

“*In the (XE) tests, I was impressed by how close you could get to the fire - you could touch the deck without feeling any heat; this wouldn't be possible on a steel deck.*”

Alastair Jones
Business Manager,
Oil & Gas
Lloyd's Register



- Patented, passive fire-retarding system lets burning fuel pass through special fire screen within helideck surface
- Full-perimeter drainage system safely channels liquids from helideck surface to drain
- Safely, quickly drains and recovers up to 97% of spilt fuel, unburned
- UKCAA CAP437 6th edition, 2008, Ch5 onwards allows XE installations to even use seawater as a primary fire-fighting agent in lieu of foam

XE with water DIFFS.
One good fire-fighter deserves another.



Designed to serve as the perfect complement for XE, our water-only Deck Integrated Fire Fighting System (DIFFS) is a safer and more efficient alternative to the traditional fixed foam monitor systems installed on helidecks. Approved by UKCAA and all major classification bodies, it allows a fire to be extinguished in under 4 seconds for water-based systems.

- Safer—frees up rescue and fire-fighting teams to help with helicopter evacuation
- Automatic—minimises chances of human error in traumatic situations
- More potent—uniform nozzle spray extinguishes fire in under 4 seconds with water only; plus, multiple nozzles less prone to blockage by debris
- Lowers costs—eliminates or reduces need for fire-fighting platforms
- More efficient fire suppression and unaffected by wind
- Water is much cheaper and more eco-friendly than foam

“*The DIFFS system has a great potential to save lives.*”

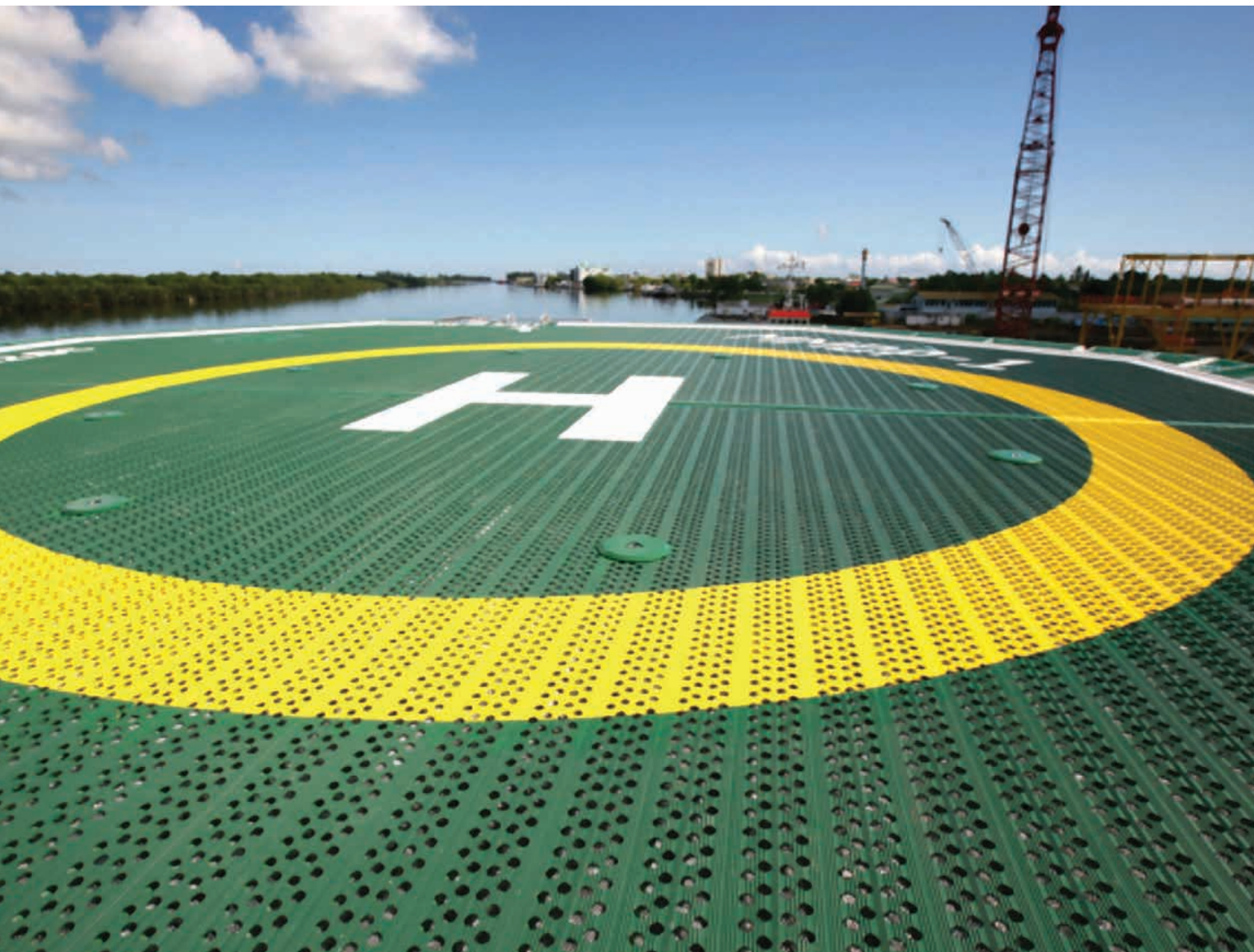
Bernard Valois
A.A.E., ICAO and Transport Canada

Beyond building. Total solutions.

As pioneers in offshore and onshore aluminium structures, we offer much more than design and supply. We provide thoughtfully conceived and integrated solutions that are built around your needs, today and tomorrow. Whatever the project, our rigorous in-depth approach takes into account every engineering and environmental challenge that may present itself — so that our clients can rest assured that their installations are robust, cost effective and future-proof.



All our solutions have been rigorously tested, with actual fire tests, in the presence of authorities such as Det Norske Veritas, ABS, Lloyds Register and UKCAA.



A Full Spectrum of Solutions

OFFSHORE

- Helidecks
 - XE Enhanced Safety
 - XD Standard
- Fire Fighting Systems
 - Foam DIFFS
 - Water DIFFS
 - Foam monitor system
 - Dual agent / complementary media
- Helideck Outfitting
 - Lighting systems for helideck and walkways
 - Piping
 - NDB
 - Helicopter starter unit
 - UPS unit
 - Touchdown / Position Marking Circle and H Lighting System

- Other Offshore Aluminium Structures
 - Helideck support structure
 - QUICKLOCK™ Aluminium Handrail and Walkway System
 - Mudmats
 - Stair towers
 - Antennae and other communication towers
 - Living quarters and accommodation modules
 - Bridges

ONSHORE

- Design and supply of helipads for buildings, hospitals and other onshore locations
- Design and supply of street furniture, transit shelters, barrier and railing systems, street signage

Trusted partners. In service and safety.

Our complete turnkey-solutions approach begins right from the pre-tendering process, where our dedicated team offers you pre-sale advice and helps you comprehensively define your objectives and needs.

We then present clear, end-to-end technical proposals. At the design stage, we offer limitless customisation and flexibility, while ensuring cost-effectiveness at all times.

After installation, certification and commissioning, we provide in-depth training and support for your personnel. You can look forward to even greater peace of mind with our after-sales support, round the clock, round the globe. We also keep emergency assistance and crisis management teams on standby.

Our long-standing relationships with the full spectrum of the industry — regulators, contractors and owners—helps ensure that we design and deliver cutting-edge solutions that are being continually refined. And our track record of over 20 years of impeccable and on-time installations across the globe aptly reflects our commitment to excellence and service.



Our Process.

DESIGN

- Discuss requirements with customer.
- Improve and enhance customer-supplied preliminary drawings.
- Class approval after design confirmation.



1

PREFAB + TRIAL FIT

- Fabricate and trial fit including accessories assembly at factory, based on shop drawing and approval.



2

QUALITY CONTROL

- Carry out quality inspection activities including related third-party/class witness, based on approval project.



3

SHIPMENT & ASSEMBLY

- Ship pre-fabricated material in knocked-down form in standard 40ft containers.
- Depending on location, assembled by AO team or assembly overseen by AO supervisor.



4

LIFTING + INSTALLATION

- Lift assembled structure to designated installation site.



5

6



ADDITIONAL EQUIPMENT

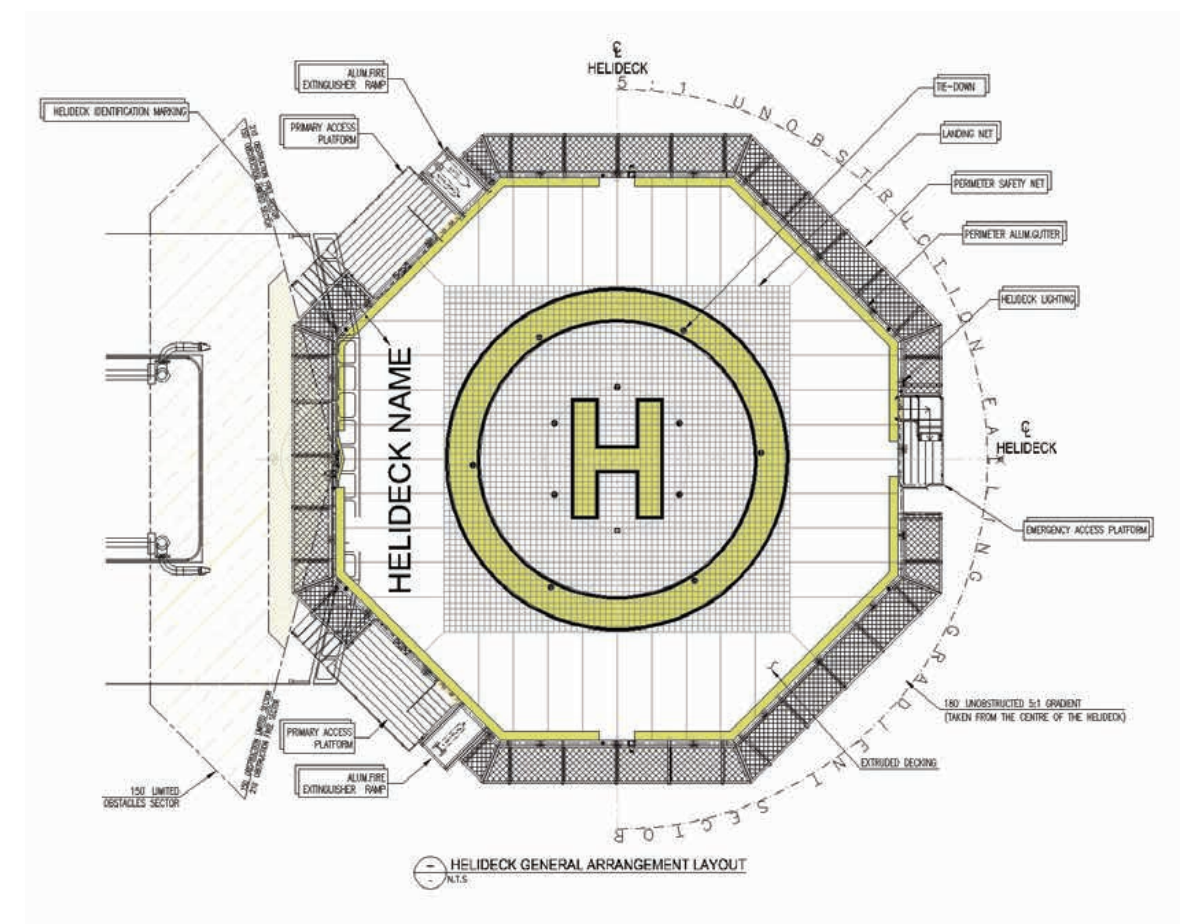
- Install/provide additional equipment according to PO to complete site assembly.

7



COMMISSIONING

- Perform commissioning to ensure that all lighting and fire-fighting equipment is fully functioning before vessel leaves for operation.
- Start up electrical system and power on all lights, activate DIFFS for specified period.



Continuous Service Relationship.

Continuously changing operating environments and standards create difficulties for our customers. However, there is no need to worry as our team is always here to provide support for your preventive maintenance and upgrading needs.

Our operating track record of over 25 years allows us to provide an extensive range of after sales support and services ranging from engineering & design for refurbishing to offshore site-specific surveys and analysis.

Our complete aftersales & services program offers a one-stop service for all your helideck needs.

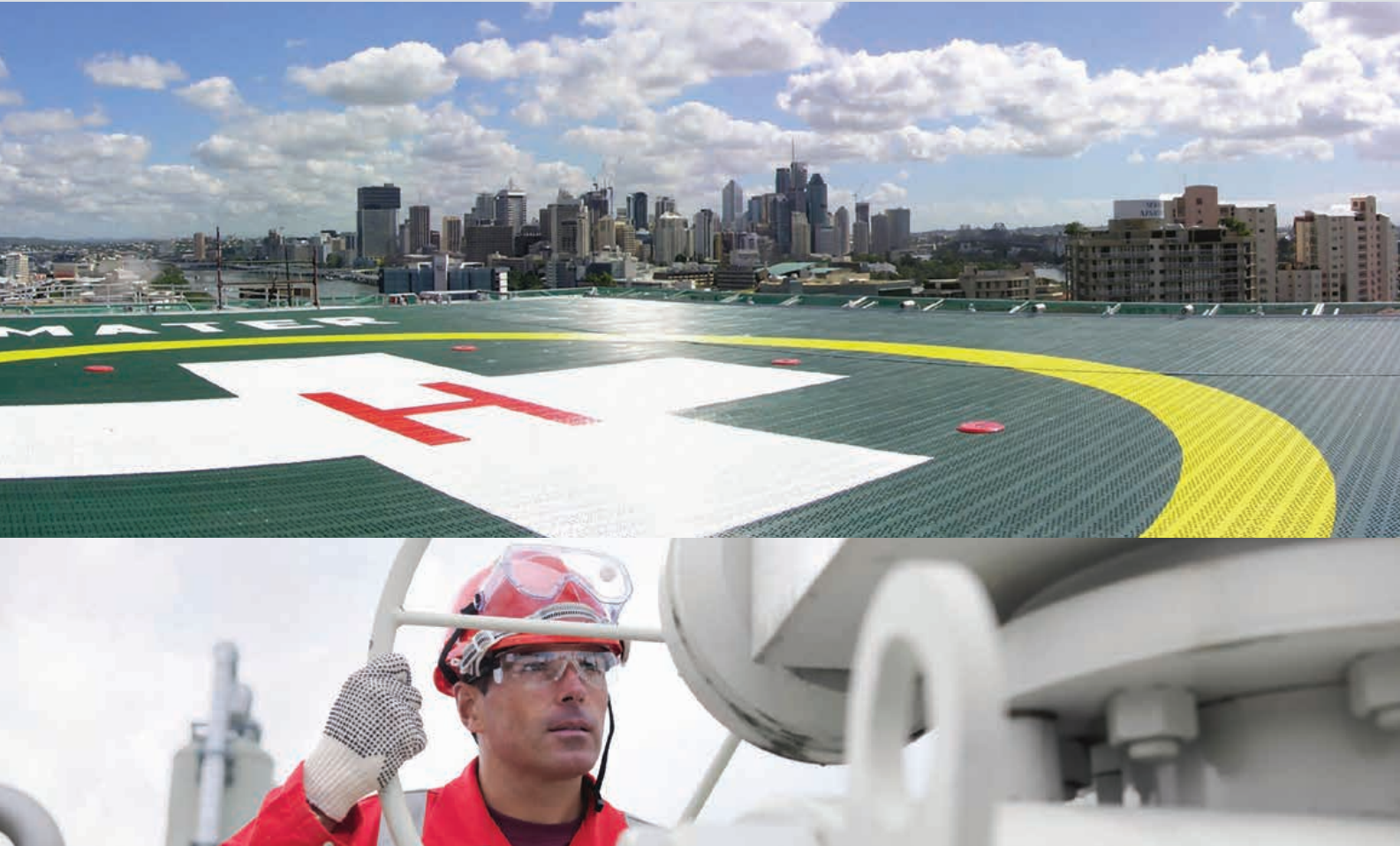
Our Aftersales & Services Program Includes:

- Supply and install the Touchdown / Position Marking Circle and H Lighting System
- Annual inspection packages
- Friction testing of surfaces
- Perimeter safety net drop load testing and netting replacement
- Engineering services for helideck modifications / upgrades
- Spare parts and components supply
- Special or customized requests



Stories of satisfaction.

While meticulousness is its own reward, we find even greater happiness when our solutions provide the perfect answers to our clients' needs. Here are a few examples:



“The AO staff were extremely professional, efficient and timely in all their dealings with us - from negotiation and design to construction and certification.”

Dr John Gilmore
Project Director,
Mater Hospital Redevelopment



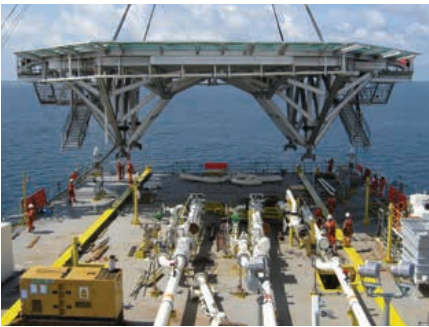
Gudrun
Customer: Statoil, Norway

BACKGROUND:
Gudrun is a fixed platform in the Norwegian sector of the North Sea. The need was for a lightweight helideck since the entire topside is very weight-sensitive. Moreover, the helideck needed to be fully cantilevered and the support configuration extremely efficient. The end client was Statoil Norway, a very exacting customer and the installation had to confirm to extremely stringent NORSOK standards.

SOLUTION:

26.1 XD

- Designed and built 26.1m all-aluminium helideck suitable for landing S92 helicopters.
- Incorporates full-perimeter walkway surrounding the helideck instead of the usual safety nets.
- To make the entire structure very lightweight, helideck supported by all-aluminium support frame.
- Corrosion-resistant marine grade aluminium alloys for cantilevered frames also helped reduce maintenance costs.
- Helideck and support structure assembled and installed in about eight weeks and lifted into place.



Shell MMDP1
Customer: Shell, Brunei

BACKGROUND:
We've built more than 50 helidecks for Shell, worldwide. But this particular project was special, as it employed an all-aluminium support truss to support the safety helideck pancake.

SOLUTION:

22.2 XE

- 22.2m all-aluminium helideck, supported by 6m high, 15m cantilevered aluminium support frame designed and built for the unmanned drilling platform MMDP1.
- Entire helideck structure designed to be skidded back on rails to allow jack-ups to drill through conductor locations.
- Support frame custom-designed to allow structural members to clear equipment on deck below, and become standard support frame design that could be used on all similarly configured platforms.
- Replaces a 145MT steel design — total weight of helideck and support frame is less than 50MT.
- Designed for Sikorsky S-92 operations and completed in June 2008.



Princess Alexandra Hospital
Customer: Queensland Government, Australia

BACKGROUND:
The hospital's existing helipad was on the ground and in concrete. We proposed a roof-based one — it would be much safer, free up real estate, more efficient and convenient for patients, too.

SOLUTION:

27.5 XE DiW

- 27.5m x 25.5m enhanced safety helipad capable of handling BA609 helicopters built on hospital roof.
- Designed and pre-fabricated deck, then shipped to Australia for assembly and installation
- Specially designed punch pattern on helideck surface for hospital gurney wheels.
- Incoming patients can be wheeled to a dedicated lift that whisked them to the hospital one floor below.



Edvard Greig

Customer: Lundin, Norway

BACKGROUND:

The Edvard Grieg field is located in the Utsira High area in central North Sea, where Lundin Norway's main focus area is located. Edvard Grieg is a 7 floor, living quarters module for Lundin's topside with an area of 2600m² and a capacity of 100 single cabins, administration centre, central control room and all other facilities required for operation of an offshore hotel.

The living quarters and helideck are both constructed in aluminium, which features low weight, minimum maintenance in operation and environmental friendliness. The total weight of the living quarter and helideck is 1250 tons.

SOLUTION:

26.1 XD

- Designed and built 26.1m aluminium helideck suitable for S92 helicopters in compliance with Norsok C-004.
- Incorporates a 5m high aluminium support truss.
- Helideck pancake incorporated with a full perimeter walkway.
- Special fitted-bolt design with locknuts for all primary structural bolts in the helideck structure. This design effectively reduces structural movements, possible joint slippages and loosening of fasteners.



Maui B Platform

Customer: Shell, New Zealand

BACKGROUND:

The Maui B Platform is operated by Shell Todd Oil Services (STOS) and is located in the Tasman Sea to the southwest of New Plymouth, New Zealand.

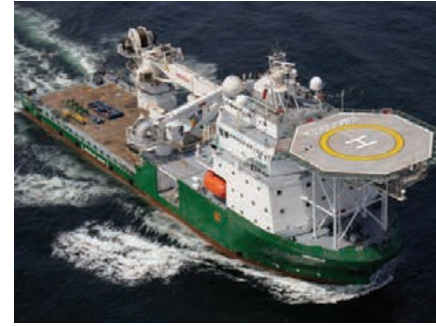
The existing Maui B Platform helideck was originally designed and installed by us in the early 1990s for a Bell 212 helicopter.

STOS needed to upgrade their old helideck to support a new and heavier helicopter — (Agusta Westland AW139 MTOW 6.8T) in the shortest period of time so that offshore operations would be minimally affected. STOS also requested for a design MTOW of 7.5MT to cater for a 10% extra potential load capacity.

SOLUTION:

17.7 XE

- Designed and built 17.7m aluminium helideck which was able to make use of the existing steel supports below.
- New helideck suitable for AW139 helicopters in compliance with CAP437.
- Supervised the entire assembly of the new helideck offshore.
- Helicopter landings on the platform could still take place while the helideck was being upgraded.
- New helideck successfully installed within 7 days, 1 week ahead of planned schedule.



GPA Vessels

Customer: Bourbon Offshore, France

BACKGROUND:

Guido Perla & Associates (GPA) signed a contract in 2008 with French owner Bourbon Offshore to build ten of the GPA 696 IMR vessels at Zhejiang Shipyard in China.

The multi-purpose vessels are each equipped with two deck cranes and a helideck designed for a Super Puma AS332L2 and EC225 helicopters.

Measuring 100 meters in overall length and 21 meters in maximum breadth, they are currently the largest in the GPA-designed PSV fleet.

SOLUTION:

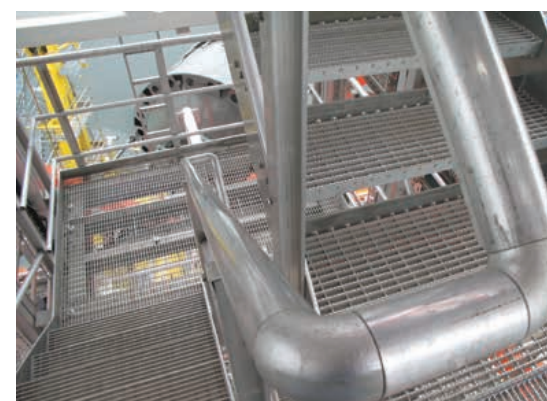
19.5 XD^{DiF}

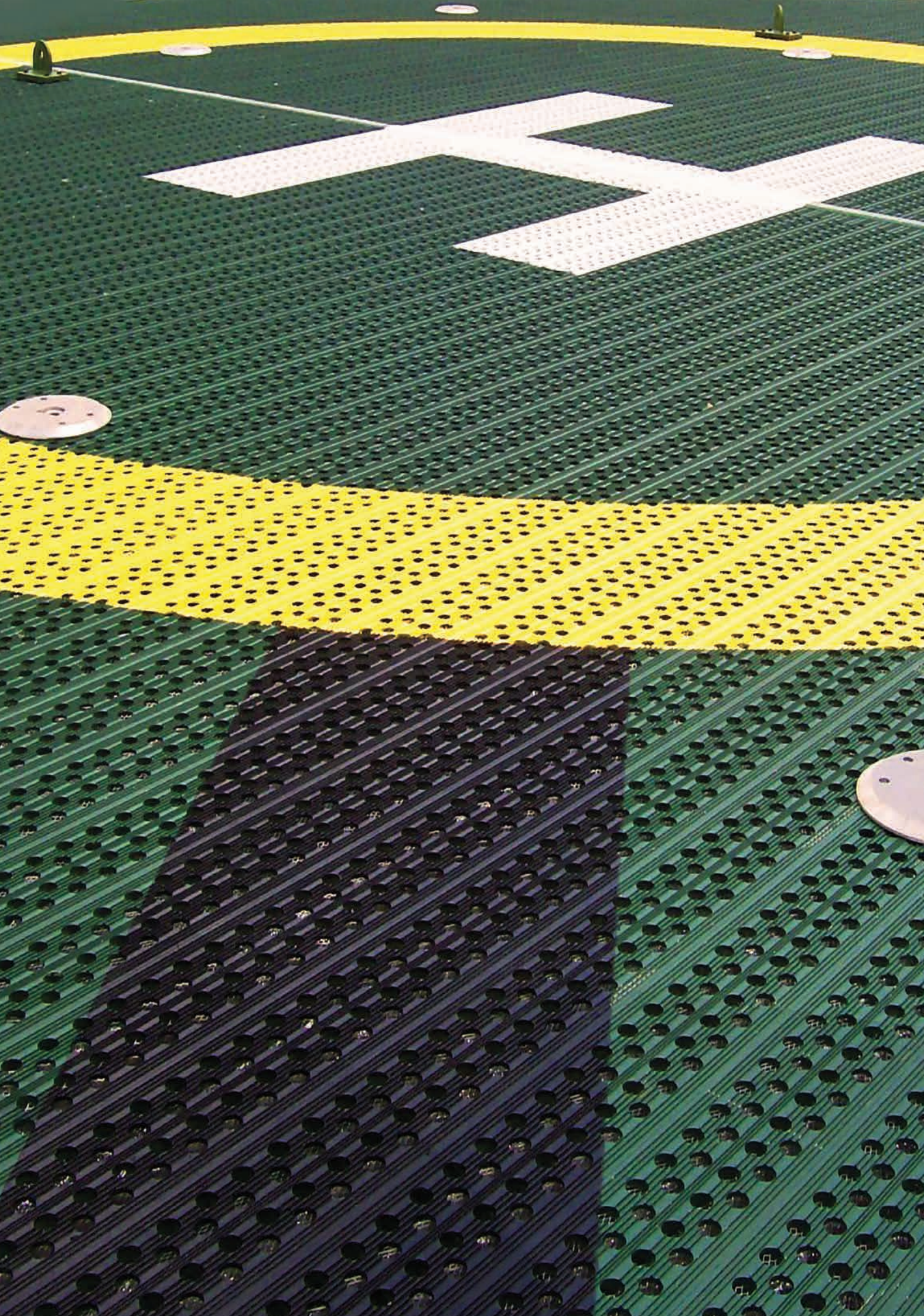
- Designed and built ten sets of 19.5m aluminium helideck suitable for Super Puma AS332L2 and EC225 helicopters in compliance with CAP437.
- Fitted with foam spray Deck Integrated Fire Fighting System (DIFFS).

Lighter Structures for the Future.

The global demand for oil and gas production has pushed the boundaries of E&P activities further offshore. With this move, structures which were always traditionally built in steel are being asked for in lightweight and corrosion resistant materials. One such example is our QUICKLOCK™ aluminium modular handrailing and walkway system. Using a modular building block method, we have designed and produced a series of extrusions and components which can be quickly bolted and locked together using fasteners and a patented locking system to create an infinite number of layouts. No welding or special tools are involved. The system can easily be retrofitted in place of steel or GRP railings and walkways.

There's more. Because it is made of aluminium alloy, QUICKLOCK™ is light yet strong, durable and maintenance free. Complying with the latest international design standards, QUICKLOCK™ is also aesthetically pleasing.





Get in touch!

Want to know more about us or how we could help
your operations become more efficient and cost-effective?
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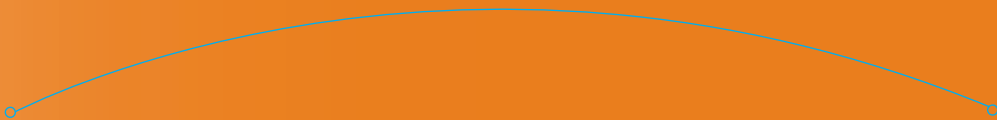
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