

TECHPORT COMMON USER FACILITY

McCONNELL DOWELL
PORT ADELAIDE SA



McCONNELL DOWELL ON TARGET WITH CUF

McConnell Dowell, in joint venture, was awarded the Managing Contractor role for Phase 1 and 2 of the Common User Facility at Techport Australia in Osborne and construction is on schedule for the 2010 completion date.

The Common User Facility (CUF) is spread over 6 hectares at the heart of Techport Australia and will be instrumental in assisting ASC to deliver the Federal Government initiative to upgrade the Australian Navy's air defence capabilities with a \$8 billion Air Warfare Destroyer program.

The South Australian Government is investing over \$300 million in state-owned infrastructure at the hub to support ASC to deliver the AWDs and attract other shipbuilding and repair opportunities.

Following an extensive submission process, McConnell Dowell, in joint venture, were awarded the Managing Contractor role for the planning and design phase of the CUF project in June 2006.

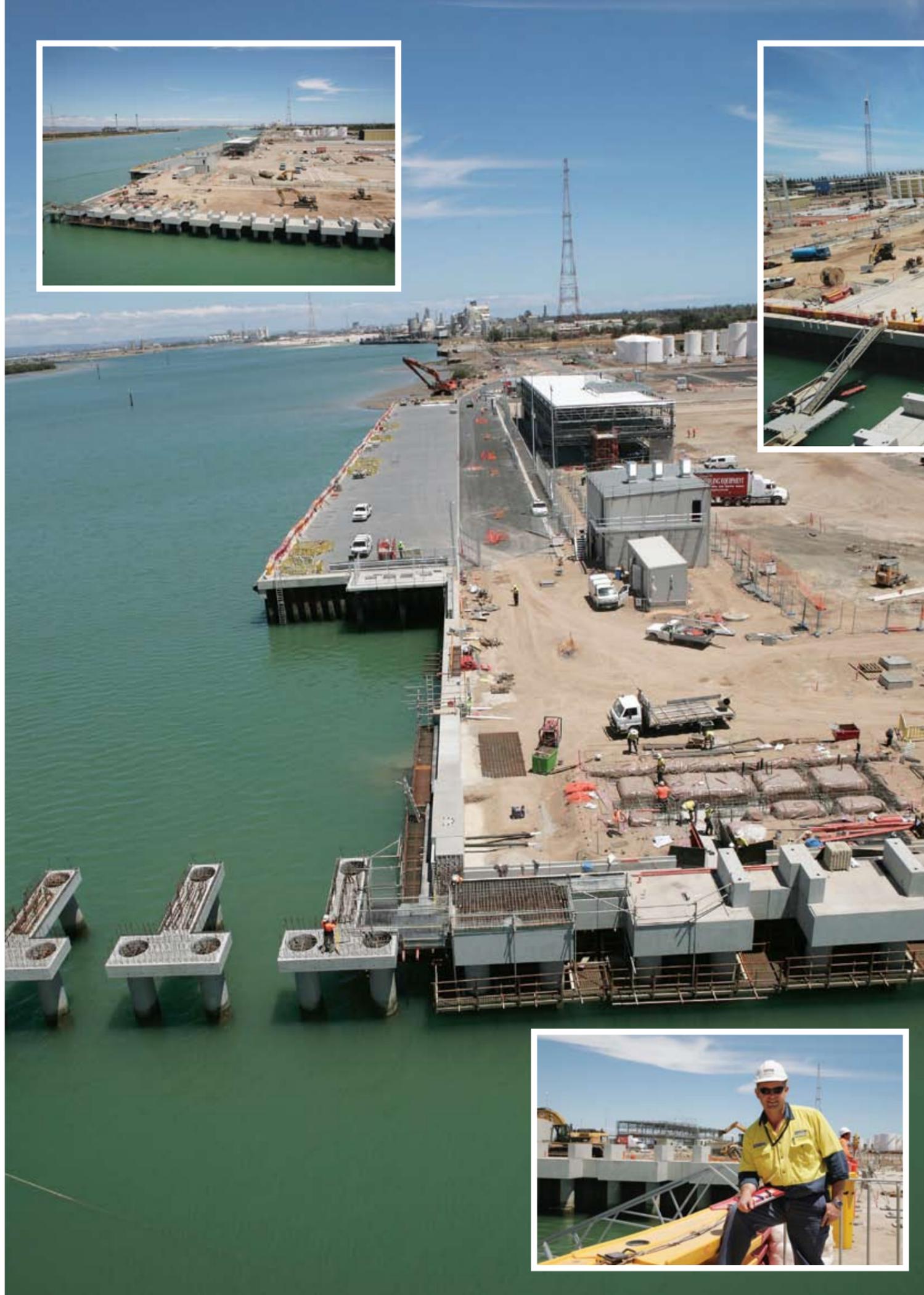
Phase 1 of the project was delivered under the early contractor model. Under this delivery model, the joint venture was responsible for the design development, preparation of a project implementation plan, fulfillment of all necessary approvals and the preparation of a risk adjusted price to construct the project.

Lodgement of a Development Application to Planning SA in November 2007 was a major milestone for the McConnell Dowell project team and as a consequence of the high quality of the submission, Phase 2 of the project was successfully negotiated and awarded to the joint venture.

The scope of the work includes construction of a 213m long x 25m wide land-backed wharf with dredging of the Port Adelaide River adjacent to the wharf for access to the Port River shipping channel; construction of Australia's largest shiplift, 156m x 34m, capable of supporting a vessel up to 9,300 tonnes with potential for future expansion to 22,000 tonne lifting capacity; a rail-based transfer system including transfer bogies and trestles, for the movement of ships and modules to and from the shiplift and around the site; a separate dry berth to the south of the runway and construction of the administration and security building including installation of appropriate services and security systems.

In addition, the joint venture will also act as project manager and superintendent for Defence SA in their contract with Rolls Royce for design, supply and installation of the shiplift and transfer system.

A number of measures are being taken to minimise the environmental impact of the project including the rescue of flora species considered of



conservation interest, the relocation of shingle back lizards, monitoring of dolphin activity, the use of storm water control measures, extensive waste separation on site and initiatives to recycle concrete, steel and timber.

The CUF is designed to support multiple projects and will no doubt attract extensive shipbuilding and repair opportunities to South Australia.

With JV partner Built Environs, McConnell Dowell is working with key local, national and international suppliers and contractors to deliver the CUF project which is on target for 2010 completion.

With almost 50 years experience in engineering, construction and building company, McConnell Dowell is known for its ability to engineer creative solutions for its clients' infrastructure projects in the key market sectors of building, mining, oil & gas, petrochemical, power, transport, water and public infrastructure.

McConnell Dowell has business units in building, civil, electrical, marine, mechanical, pipeline, tunnelling and underground infrastructure and operates throughout Australia, Asia, New Zealand, the Pacific and the Middle East.

Some recent and current Australian Projects include the Pilbara Infrastructure Port, WA, Bogong Hydro Scheme, Victoria, Dampier to Bunbury Gas Pipeline, WA, North Melbourne Station, Victoria, Adelaide Desalination Plant & Transfer Pipeline, SA, South East Queensland Water Pipeline, QLD, Sydney Desalination Pipeline, NSW.

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MARITIME BARGE AHEAD WITH CUF WORK

Adelaide-based marine specialist contractor, Maritime Constructions, has more than a construction interest in its work on the Techport Common User Facility (CUF) as it also plans to use the completed facility to launch its next generation multi-purpose vessel in 2011.

Maritime Constructions has been involved in various projects for CUF ranging from providing a simple boilermaker to undertaking the dredging of 84,000m³ of clay in the Ship-Lift and berthing box of the Main Wharf and the installation of 860 (3,600m²) anchor sheet piles during the construction of the ship-lift and main wharf retaining walls.

Minor projects included the dredging of silt to uncover an old concrete slipway and provision of a dive platform and heavy lift barge to remove this slipway. Maritime Constructions is also providing two tugs for moving two hopper barges involved with the excavator dredging.

The construction of the ship lift and main wharf required both land based excavation and sea based dredging through different geological layers of clayey soil. Strict environmental controls due to contamination specified that the different layers of clay were to be dredged and stored separately using different dredging methods.



Maritime Constructions was contracted to dredge the top layers of fill, silt and St Kilda clay up to a depth of 5.5m LAT, within the Ship Lift and Main Wharf areas, using a cutter suction dredge. The 5.5m cut-off level represented the bottom of the St Kilda clay geological layer which was to be pumped into a settling pond.

The MDBE JV was to then dredge the clay layers below this level using a barge mounted excavator. This way the spoil from the two sets of dredging activities could be kept separate.

To complete such complex projects, Maritime Constructions owns a large fleet of floating plant, including multi-purpose vessels, barges with heavy lift and piling capabilities, landing craft, tugs, cutter-suction dredges, workboats and other specialized floating plant with the newest addition being their 1,000T flat top barge 'Aquane' equipped with a 150t pin jib crane.

The company's cutter suction dredge "Ngurunderi", a 21m monohull with a dredging depth of 20m, capable of moving 300m³ of material per hour, was used extensively in the CUF dredging operation.

The delivery pipeline snaked its way from the site to a 100,000m³ settling pond 1.7Km away. The dredge on-board pump as well as an in-line booster pump, located about half way along the delivery pipeline route was used to pump dredge spoil such long distances.

As the dredge spoil settled in the settling pond, clean seawater collected in the overflow pond and two return water pumps and pipelines were installed to return the water back to the Port River.

The dredge is equipped with on board computers and accurate GPS systems that were pre-loaded with a dredge plan based on Hydrographic surveys of the area to allow the operator to control the depth, width and angle of cut to ensure the areas were dredged to the design profile.

One of the main issues faced was underwater debris such as old timber sections, concrete blocks, reinforcing bars and rocks and the company had to re-design the suction mouth of the cutter-head on a number of occasions to avoid blockages and to ensure blockages occurred at the suction mouth rather than further along the delivery pipeline.

Water quality monitoring tests were conducted throughout the dredging process to meet strict EPA guidelines.

Maritime Constructions is involved with marine infrastructure works such as jetty and wharf construction, dredging, offshore installations and marine asset management and maintenance services and has a fully equipped workshop for design, construction and maintenance of its floating plant.

In addition to this major infrastructure project at Techport, Maritime Constructions' other milestone projects include installation of an underwater 1.6Km long intake pipeline and 0.7Km long outfall pipeline for the Trial Desalination Plant in Adelaide, construction of a new 125m long fishing Trawler Wharf at Portland, Victoria and construction of a 240m long steel/concrete recreational jetty at Rapid Bay, South Australia.



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A MOST UNCOMMON SOLUTION FROM LUCAS

Lucas Earthmovers showed great initiative in utilising a most uncommon solution on the Common User Facility project at Techport. GPS machine guidance was used to maintain excavation parameters and guide the operators whilst digging under the water.

Lucas was contracted to carry out the Bulk Earthworks, Ship Lift Excavation and Dredging on the site with the scope of works involving excavating the ship lift for piling, rock revetments, establishing land based storage, stockpiling facility and road networks and dredging.

Lucas is well regarded for their depth of resources and for this project they used a 140 tonne EX1200 Excavator with a long reach boom which has a digging depth of 23m. A clam shell was attached to facilitate digging beyond the 23m and GPS technology installed to control digging depth and position.

The project posed multiple challenges even for this company with 40 years experience as a specialist in all facets of civil construction, contract mining, quarrying and crushing, civil engineering and waste management.

The ship lift excavation was started dry with geotechnical assessment was carried out as the site was adjacent to the river and up to 18m below sea level. Floating pumps were used to keep the excavation dry, a 26 metre longreach employed and boom mounted cameras installed for operator

vision. the excavation was flooded to equalise the water pressure and stabilise the piles, the excavation was then undertaken as wet land base, the long reach was then moved onto a floating barge where it then excavated material that was then transferred onto a hopper barge.

Lucas Earthmovers has more than 200 highly qualified personnel and the largest plant and equipment fleet in South Australia. Their services include infrastructure, road works, commercial and industrial site works, bulk earth works, plant hire, landfill operations, site remediation and rehabilitation and they also work extensively with environmental and waste management industries.

The company's recent projects include the Millswood Belair Rail Upgrade, Iluka Jacinth Ambrosia Mineral Sands Mine, Southern Waste Landfill Site Upgrades, the Cape Jaffa Marina Development, Oz Minerals Prominent Hill and the Termite Resources Highway Underpass.

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GRAZER'S THE WAY FOR TECHPORT

With significant time and cost savings and environmental benefits to be realised, McConnell Dowell and Built Environs have adopted the state-of-the-art Grazer software package to produce the Operation and Maintenance Manuals (O&MMs) on the Common User Facility project at Techport.

O&MMs are a specified requirement for any major construction, but they are usually left to the end of a project and require time to create, often causing delays in closing off a project and require massive amounts of paper and create significant carbon emissions (CO2e) which may effect the environmental status of the project.

The Grazer software package does not just produce O&MM's on DVD, individual P.C or a Network. This unique system creates an interactive graphical architecture of the project which can be utilised by relevant parties throughout the building phase to access information on installation and defect recording, then used during the 12 month warranty period in conjunction with the facility operators.

Grazer uses the construction drawings to attach all forms of documentation to an asset. The Common User Facility project was very complex so Grazer became a valuable tool to assist in the compilation and accuracy of the handover documentation that will be used for this facility over the next 30 years! Grazer will also provide an accurate asset list and

Essential Services Provisional Maintenance Plans thus providing the facility owner with a complete and up to date asset management system.

Grazer Pty Ltd is an Australian-owned specialised software company, which provides consultancy services to accompany its software package to allow efficient asset management and maintenance for any business.

Due to the foresight of companies including ElectraNet, Australand, Bestec, Lincoln Scott, Bassetts, Comcorp Architects, Hansen Yuncken, Built Environs, Cromwell and Sustainable Built Environments (SBE) going 'the Grazer way' is becoming one of the fastest growing trends in the Australian construction industry.

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HILLE MOVES TECHPORT



Hille Earthmovers (HEM) has a solid reputation for undertaking difficult projects in unique and unusual operational environments but the Common User Facility project at Techport Australia, is probably the company's most significant in terms of the importance of the project itself.

When completed the Common User Facility will consist of a 213m long wharf with dredged access to Port River shipping channel, runway and dry berth and the largest shiplift in Australia and will play a key role in building the Air Warfare Destroyers.

Hille Earthmovers were involved in a number of areas on this key infrastructure project. The company cut, filled and compacted platforms for the buildings, which involved working in confined and difficult conditions around existing building structures.

Hille worked on the bulk earthworks and the contouring of the site, back fill rocks with dozer in preparation for sheet piling of the sea wall, the dredging bund and other ancillary works.

HEM specialises in bulk earthworks of various types and applications, to cut fill and compact to client's specifications and have proven their capability to provide their own mobilisation and demobilisation of plant

and equipment and extensive resources, logistics and at various times, the provision of their own self-reliant construction camps to support their operations.

HEM has an extensive fleet of Caterpillar earthmoving equipment which includes elevating and twin powered open bowl push pull scrapers of various sizes along with Dozers, Compactors, Graders, articulated and 6 Wheel Drive Rigid Water Trucks and Tri Axle Semi Water Tankers.

Established in 1952 by Basil Hille, HEM remains a family owned and operated business providing services to many parts of Australia including isolated operational environments for Civil & Mining companies in South Australia, Northern Territory, New South Wales and Queensland.

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HUGE HYDRAULIC HAMMERS



Utilising some of the largest hydraulic impact hammers ever introduced and used in Australia, Pilequip Australia is playing a significant role in the development of the Common User Facility at Techport Australia in South Australia.

Pilequip supplied specialised piling and foundation equipment for this project, a world-class common user shipbuilding facility which includes a wharf, runway, dry berth, transfer system and shiplift.

The work involved a combi-wall steel tube piles with sheetpiles linked which required high accuracy in placement of piles. For accuracy and control, a combination of vibratory hammers and impact hammers mounted in flying leaders were utilised.

To meet the requirements of port upgrades created by the recent resources boom in Australia, Pilequip has sourced and supplied specialised pile driving equipment, including 2 x Junttan HHK 18/20 hydraulic impact hammers, 1 x Junttan HHK 7/9 hydraulic impact hammer & 2 x ICE 44-50 vibratory hammers to drive this type of project to success. The Junttan hammers in particular were used extensively and effectively on the Common User Facility, further enhancing Pilequip's impressive reputation in the building and construction industry throughout Australia and the Pacific region.

Established in 1988, Pilequip Australia is a 100% Australian owned company staffed by professional engineers and qualified trades people experienced in the techniques, operation, repair and maintenance of the specialised equipment provided by the company.

The company provides a range of services including sourcing new or used equipment, tools and accessories; commissioning new & used equipment for customers and training of the customer's operating and maintenance personnel; technical support for end users regarding applications and operation of equipment; equipment service, repair and overhaul both in the field and workshop; field service and maintenance support for rental fleet of hammers and piling machines and spare parts supply ex stock or from local or overseas sources.

In addition to the Techport project which is due for completion on 2010, Pilequip is also working on many other significant projects including Dalrymple Bay Coal Terminal, the Gateway Bridge Duplication Project, Cape Lambert Expansion, Abott Point Upgrade, Ballina Bypass and Cooperook to Heron Creek duplication, to name a few.

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CONCRETE ANYTHING BUT COMMON



As a specialist in large structure projects, Victoria-based Freeway Concrete Constructions was contracted by the McConnell Dowell-Built Environs joint venture to complete the concrete and formwork on the Common User Facility project at Techport in South Australia.

To complete the 20,000 m³ of concrete and 7,000 m² of formwork, Freeway employed 10 formworkers and 12 concreters and utilised their extensive fleet of heavy duty equipment.

The scope of the work involved formwork and concrete to 1.2m thick on the extra heavy duty slab for the 300m x 55m runway and dryberth and the shiplift, the formwork and concrete to the 350m long Wharf Capping Beam and the formwork, concrete and reo to Service Duct Access Chambers and Pits.

Freeway also completed the 400mm thick Heavy Duty Culvert Lids, which were built in the prefab yard prior to site installation. Additional work also included the light and CCTV pole foundations as well as a range of building slabs, walls and stairs.

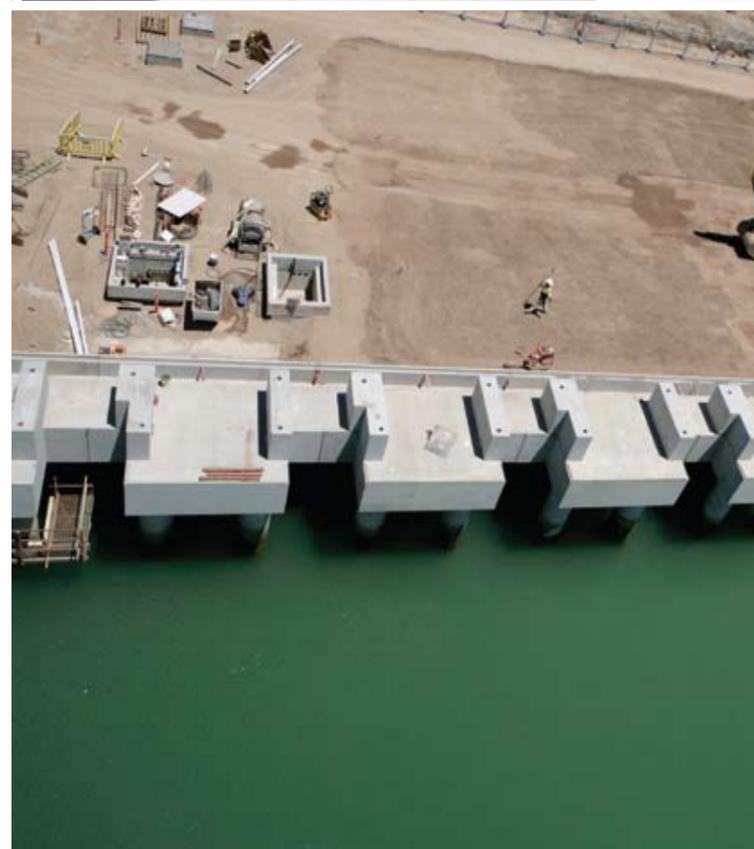
Due to the temperature on the site and supply issues, Freeway carried out the concrete pours at night, commencing work at 11pm using two

concrete pumps working at 100 m³ per hour with 12 concreters. When the pours were finished, the area was covered with thermal insulation to stop shrinkage of the concrete.

Freeway is well regarded for their successful completion of large scale projects including work on the Kogan Creek Power Plant in Queensland, which included the Steam Turbine Foundation and involved 7,200 m² of formwork and 17,000 m³ of concrete with a continuous pour of 2300m³ in 27 hours.

Freeway Concrete Constructions commenced operations in May 1999 but the directors have over 25 years experience in construction industry. The company specialises in all forms of formwork, concrete and steel fixing including large structures, bridges, tanks, suspended slabs, floor slabs, pits, retaining walls, stairs, and general structure and has proven its capability for large volume concrete pours.

The company has completed projects throughout Australia including the Bakewell Underpass in Adelaide, the Meander Dam Project in Tasmania, the Melbourne Ports Authority Facility Upgrade in Victoria, the Carrum Water Purification Plant in Victoria and the Echuca Water Reclamation Plant in Victoria.



Freeway is also currently working on the City Green Alliance Project at Glenelg Water Treatment Plant.

The company has a highly experienced crew of staff and a fleet of well-maintained vehicles and equipment to tackle the largest projects.

FREWAY CONCRETE CONSTRUCTIONS

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CD EXPERIENCE ON SHOW AT CUF



CD Scaffolding's 20 years experience was invaluable when faced with the challenging conditions at the Common User Facility project at Techport in Osborne South Australia.

CD supplied all the scaffolding to the site including handrails, drop scaffolding, stair accesses and bridges, providing both labour and high quality equipment and materials to main contractor McConnell Dowell.

The project was well within their capabilities, however, they faced the unusual task of having to erect the drop scaffolding to the shiplift from barges and boats on the river. A task, which required innovative adaptation of their procedures.

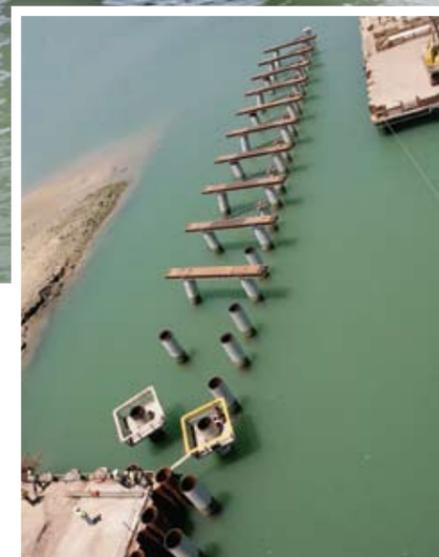
Based in South Australia, CD Scaffolding offer a comprehensive service to leading builders which includes the complete supply of quality equipment, hire and experienced personnel at highly competitive rates.

With their work on CUF completed, CD moved their attention to the adjacent site at Techport, where they are completing the project for Hansen Yunken.

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SPECIALIST FOUNDATION ENGINEERING SERVICES



Contractors are always looking for an edge – practical and cost effective solutions which will give them the winning edge. Foundations in particular are where project risks are high and opportunities for alternative smart designs are large.

Foundation QA provides specialist deep foundation engineering services to clients across the spectrum of industry – from marine and land-based contractors, to general and geotechnical consultants and the government sector.

A key feature of our approach is to combine long practical experience in the foundation industry with advanced computational tools and common-sense to develop designs which are right for the job – both on the desk and in the field. Foundation QA work with contractors at tender stage to develop concept designs which are cost-efficient, practical to construct, and inherently reliable and robust so that the solution can cope with the inevitable changes in ground conditions revealed during construction. We then work with the structural engineers using our extensive suite of external and in-house foundation software to deliver the detailed design.

Foundation QA also provides review, specification, proof engineering and expert witness services in piling and foundation matters, and is also engaged to trouble-shoot foundation problems.

Foundation QA is the Australasian agent for Pile Dynamics Inc. of USA and the only PDA testing company in Australia to hold Expert certification in PDA testing. A significant part of our business is to provide construction verification services using the **Pile Driving Analyzer** and the non-contact **Pile Driving Monitor** system (both shown above) which has been developed in-house. Our involvement in pile testing and monitoring provides constant and valuable feedback to our design and constructability assessment services.

On the CUF Project, Foundation QA provided all the pile verification services. All testing was undertaken remotely using a PDA connected via wireless broadband to our head office. This is both a cost-effective and convenient solutions for most projects, and such testing services are carried out both within and outside Australia.

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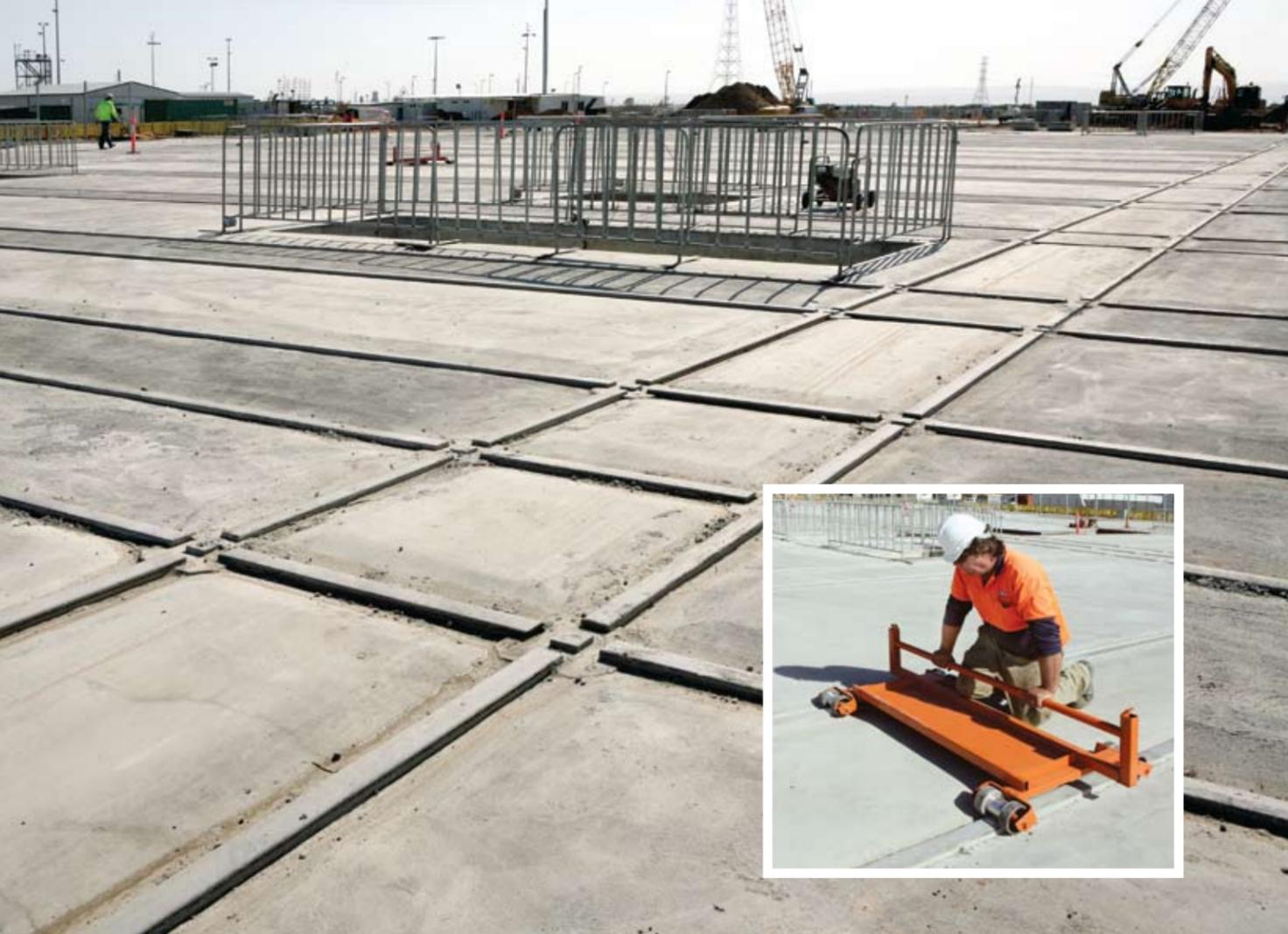
DID PILING



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17,000 PIECES, NO PUZZLE FOR COLEMAN

An unusual crane rail system has been installed in the Common User Facility (CUF) project at Techport. The system is designed to provide a dry berth runway, a runway to the shiplift and transfer rails to allow ship trolleys to move ships longitudinally on the runways and transfer ships between the two runways. The very tight construction tolerances over a large area provided a challenge for rail track contractor Coleman Rail.

Coleman Rail specialises in trackwork construction, renewal and maintenance of rail and light networks as well as the installation and maintenance of crane rail runways.

On the CUF project, Coleman was contracted by McConnell Dowell Built Environs JV to machine, fabricate and install the crossing blocks, paint treated crane rails and galvanized sole plates to a 2mm vertical and horizontal tolerance over the entire runway and transfer system. The rails were encased in a concrete topping slab.

The runway and transfer rail system included 5.20Km of A75 crane rail machined into over 1,600 pieces 1028 cast steel machined crossing blocks; 320T of fabricated steel sole plates; 16,000 rail clips and 20,000 anchor bolts. These components formed one big 'jigsaw puzzle'.

The project posed a number of unique challenges starting with the tracking and logistics management of 500 individual machined and

painted or galvanised elements together with specialist components sourced from overseas, then the piecing together of the jigsaw puzzle. The continuing movement of the base slab and thermal movement of the rail added to challenge of the required tolerances achieved.

In order to successfully complete this unique project, Coleman established a purpose designed rail cutting and machining bed, in its' Melbourne workshop, to fabricate the high manganese steel rail components. The rail sole plate and levelling system was redesigned to incorporate an innovative rail levelling and lining system that allowed the very tight tolerances to be achieved within the limited construction period.

With over 25 year's continuous involvement in the field, even 17,000 pieces is no puzzle for Coleman.

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WORKSAFE SCREEN TECHPORT

The construction industry widely acknowledges that alcohol and drug abuse is a serious issue both in society and on-site and is actively addressing it through the services of companies such as Worksafe SA.

Worksafe SA provides a range of drug and alcohol screening and education services and has been appointed to the Techport Common User Facility Project by joint venture partner McConnell Dowell.

With their brief covering the entire 6 hectare site, with over 200 workers and sub-contractors on site on any one day, Worksafe SA Managing Director, Tony Hehir says that while it will be a challenging project over the 3 year construction period but the benefits to many will be great.

"Our major objective is to create a deterrent and this is achieved by our random testing service where no one, not even the major contractors know what days we will be screening," Tony said.

Worksafe SA offers a range of independent services including assistance in the development of policy and procedures; alcohol and drug screening by breath, urine or saliva analysis; consultation with both management and employees in regard to alcohol and drug related matters and conducts drug and alcohol awareness sessions.

Testing is performed to AS 4308:2008 and AS 4760:2006 confirmatory tests conducted by a Nationally Accredited (NATA) Laboratory, Worksafe adheres strictly to chain of custody requirements and results are confidentially supplied to clients for their action.

At Techport, Worksafe is using Drugwipe 5, similar to that used by police, however, the testing is for 5 substances rather than the 3 tested by police units.

Mr Hehir says that employers who have implemented Worksafe services are reporting many benefits including decreases in absenteeism, accidents, downtime, turnover and theft as well as increases in productivity and overall improved morale.

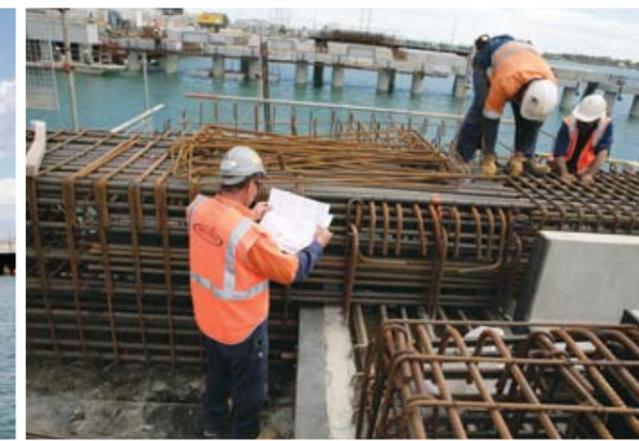
Worksafe SA personnel are experienced in all aspects of Drug and Alcohol screening and attend the site to conduct screening with minimum fuss and interruption to the work schedule.

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TECHPORT WELL ON THE RAILS



The Common User Facility at Techport is well on the rails with all the rails in the facility supplied by EMRAILS, Australia's leading rail stockist.

EMRAILS specialises in rail stocks and holds the largest and most comprehensive range of rails, ex-stock, available for immediate delivery Australia-wide.

The company stocks a full range of rails including Arcelor Mittal Standard, JIS Standard, RT Standard, and Din Standard Rails in a range of lengths.

Arcelor Mittal in Luxembourg manufactured the rails supplied for the Common User Facility project. The rail specification selected for this project was of the highest specification available.

Time was critical to meet the project's delivery schedules. The manufacturer was made aware of this project in the early stages, to enable them to plan their production to meet the projects needs.

EMRAILS also worked closely with the McConnell Dowell Built Environs Joint Venture, to ensure the rails would be available on site when required.

Shipping of the rails from Luxembourg was one of the other critical aspects. The production and shipping was done in two stages. There

were sufficient rails to start the project in the first shipment, then the balance of the rails were all dispatched in the second shipment.

EMRAILS prides itself on its excellent level of service in the stocking and distribution of rail to all customers across Australia. Delivery is within two weeks to Melbourne, Brisbane, Sydney, Newcastle, Port Kembla, Adelaide and within three weeks to Perth, Hobart, Darwin and specified regional towns.

EMRAILS was formed in 1992 and became a division of the OneSteel group 2001.



**Untie the knot!
One call is all it takes
to get back on the rails**



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Macweld Industries is a diverse engineering company with accreditation to AS/NZS ISO 9001:2000, which enables the company to provide excellence of service and product, absolute conformance to the customer specification and requirements and an effective continuous improvement program.

As structural fabricator on the Common User Facility (CUF) project at Techport Australia, this excellence was again exhibited as Macweld met the tight delivery timeframes and strict tolerances required on this key defence infrastructure project.

Macweld undertook the detail design, fabrication, transport, craning and installation of the 2 Shiplift Finger Pier temporary pile frames (total weight 65 tonne) at CUF as well as 30 crosshead panels (total weight 100 tonne).

The crosshead panels enabled McConnell Dowell Built Environs Joint Venture (MDBEJV) to track the 100 tonne crane out over the water to install the piles for the shiplift. The piling frames were cantilevered off of these crossheads and, with the use of piling gates for guiding the piles into position, the frames were used as the main working area platforms.

All work was completed inhouse by the highly experienced Macweld team. Experience which has continually and successfully completed projects in a diverse range of industries since the company's inception in 1962.

A privately-owned company, Macweld offers a range of services including Mild Steel fabrication, Stainless Steel fabrication, Structural and Mechanical Design (ProSteel and AutoCAD), Project Management, On-site Maintenance, Labour Hire, Shutdown management and coordination, Site installation and steelwork erection and 24 hr Crane Hire with lifting capacities up to 100T.

Macweld Industries other recent projects include the supply, fabrication, surface treatment and delivery of Launder access platforms, GU8 Steelwork, maintenance and duct supports for the Roxby Downs Tails Leach Project; the design, manufacture, surface treatment, delivery and installation of both structural steelwork and metal work packages for the Port Mall project; Afton House Re-development and Clayton Church Homes Retirement Village; and the supply, fabrication and delivery of 56 stainless steel tube screens and plate conveyor casings for an innovative waste water treatment plant in WA.

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BOFFA & RUSSO CREATE NEW DESIGN

As Head Electrical Contractor on the Common User Facility (CUF) project, Boffa and Russo Electrical developed new designs to suit the 'Australian first' design of the dry dock.

Boffa and Russo were involved in the installation and connection of all HV and LV services, the supply and installation of HV switch rooms and transformers and the supply and installation of all area lighting including the 30m, 15m and 8m light poles.

HV services on the project run in tunnelling underneath the dry dock, to supply power to various pits throughout the dry dock so that ships can receive shore power via a portable transformer, wherever they are located on the slab.

This is an Australian first in dry dock design and required a new design for the HV Couplers by New Macey and B&R. The new couplers are constructed from marine grade aluminium and are only a fraction of the weight of traditional HV couplers, with better weathering properties and are easier to handle. The portable 1KVA Substation was a joint design between CW-DC, PM Switchboards and B&R. These substations are located over the Dry Dock HV service pits and are connected to the HV couplers. The substations are then used to supply shore power to the ships on the slab.

The installation of the HV cables through the tunnel system presented a number of challenges for B&R in achieving the correct bending radius throughout the installation. B&R & Korvest (Ezy Strut) had to design and manufacture some very unique cable ladder sections, in order to keep the correct cable radius around all tunnel intersection and entry points into the dry dock pits. Special rollers, designed by B&R, were also required to install the cable into the duct work system.

One of the largest electrical contractors in South Australia, B&R has been involved in electrical infrastructure in many of the state's landmark projects for nearly 30 years. They operate in the full range of market sectors and the CUF project is another significant addition to their already impressive portfolio.

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HINDMARSH PLUMBING AWARDED FOR CUF

The Common User Facility (CUF) at Osborne SA was the first mechanical installation project of its size carried out by Hindmarsh Plumbing and the challenge paid off, earning the plumbing contractor the Plumbing Industry Association SA 2008 Safe Work SA Large Employer Award.

Hindmarsh Plumbing were engaged by the McConnell Dowell/Built Environs Joint Venture to enter into early contractor involvement on the CUF project to assist in the design phase with Connell Wagner and provide design buildability prior to issue of final documentation and work starting on site.

The \$6.5m project for Hindmarsh Plumbing comprised of seawater flow and return system and pumps, compressed air pipework and equipment, potable water reticulation, fire protection including tanks and pumps, sewer drainage (pumped and gravity) with sewer pump stations, welding gasses reticulation and meters and a ventilation system.

A 540 metre long tunnel system positioned under the dry berth area, facilitates the reticulation of the services around and under the dry berth area.

The services were also installed in the ground in large common service trenches. A process, which required close coordination with the electrical services and stormwater.

In the tunnel, services branch off the ring main pipes into service culverts where they terminate with valves and flanges to allow for future connection to facilitate services during the construction of a vessel.

A number of unique materials were used for the CUF project including GRE (Glass Reinforced Epoxy) and SAF Duplex stainless steel pipe and fittings. A team of Hindmarsh tradesmen trained for special accreditation in the installation of the GRE pipe and fittings for the seawater reticulation in order to successfully complete the project.

Part of the Sarah Group, a long-standing member of the South Australian building community, Hindmarsh Plumbing Services is the leading plumbing contractor in SA and is currently working on a number of keynote projects including the Adelaide Zoo Panda Enclosure, the ASC Shipyard Redevelopment, Aurora on Pirie, Lyell McEwin Hospital Stage 2 and HNA Stage 2.

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SPLASH IN THE PLAN

A delaiide-based Splash of Colour is making more than a splash in the construction industry with their impressive range and quality of print and design services to major commercial projects.

Following their excellent service on previous projects for McConnell Dowell, Splash of Colour was awarded the contract to provide plan printing to the Techport Common User Facility project.

The contract involves providing a fast turnaround, in some cases same day service, for large scale A1 and B1 plans. A service, which the company has streamlined through their web-based file upload programme where print PDF files can be sent directly from the architect or uploaded and requested from Project Centre or Aconex.

Splash of Colour uses the latest Digital Colour printers, High Volume and Engineering Copying / Plotting Equipment, which ensures consistent High Quality Production at the fastest speeds available to offer Building Industry Print Service to Builders, Contractors and Sub Contractors requiring copies of plans during the Tender and Construction stages.

Utilising state-of-the-art Xerox Digital Plan Printing and Scanning Equipment Splash also offers fast, cost effective Black and White plan printing from A4 through to A0 oversize.

As a division of Boileau Business Solutions and conveniently located in the same new head office building, Splash of Colour has access to Boileau's wider range of equipment and services from Fuji Xerox, NEC, Mitel and Telstra to complement their offerings.

Splash of Colour provides Plan Printing, Digital Colour Imaging, Production Copying, Large Format Colour Printing, Colour Poster Printing, Business Cards as well as design and desktop publishing and printing art onto canvas.

The company has recently acquired a large format solvent printer which enables them to produce outdoor banners, adhesive signage, motor vehicle signage and internal super graphics.

Splash manager, Melanie Boileau-Barry is also a qualified interior and graphic designer and designed the fitout of the company's new headquarters in Sir Donald Bradman Drive at Cowandilla.

Definitely more than a 'splash in the plan', more like a tsunami of services.

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INTERNATIONAL[®] COATS TECHPORT

As the leading supplier of high performance protective coatings in Australasia, International[®] Protective Coatings was contracted to supply the highly specialised coatings to infrastructure facilities at Techport in South Australia.

International[®] Protective Coatings forms part of Akzo Nobel which is the world's largest supplier of coatings, operating in 80 countries to serve the Marine, Protective and Yacht coatings markets.

The company is renowned for its innovative protective coatings including Interzone[®] 954, Interprime[®] 198 and Interchar[®] 963 which are used extensively to protect steel structures at new construction and maintenance in a wide range of aggressive environments and industries.

On the Techport infrastructure project, International[®] supplied the coatings for the round sheet piles and other steel components in the shiplift area as well as supplying primer and fireproofing coatings to ASC's administration building and workshops where the main components to the warfare destroyers will be built. The innovative new fireproofing coating, Interchar[®] 963 was used on the project. This product is used across a variety of infrastructure projects to reduce the risk of structural collapse under the extreme high temperatures of cellulosic fires.

International[®] Protective Coatings utilises the company's extensive global experience and presence to deliver innovative coating products to local markets with full technical support and service.

The company's two local representatives, Paul Haggerty and Michael Asimos, were available on site to ensure the project ran smoothly with on time deliveries so there was no delay to the coating application.

In addition to the Techport project, International[®] is currently supplying protective coatings to Iluka Eucla & Ouyen Mineral Sands, ABB Grain and AAMI Stadium in South Australia, Pluto LNG Jetty and Boddington Gold Mine in Western Australia, Dalrymple Bay; Abbott Point and Clermont Coal Mine in Queensland and NCIG and PWCS Coal Export Terminals in New South Wales.

International[®] Protective Coatings is dedicated to the promotion of environmentally conscious coatings and a major focus is the continuing development of water borne and high solids technology in the fireproofing market. With a current local and global product offer for all your coating requirements, International[®] is ready to protect your next project.

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