

Hansen Yuncken (South Australia) were awarded the design and construct contract for \$108 million Osborne shipyard upgrade project by ASC Shipbuilding in March 2007. Hansen Yuncken (SA) is responsible for development construction, while working in alliance with ASC to manage the overall construction program. Located adjacent to Techport Australia's Common User Facility, the upgraded Osborne shipyard will be used by ASC in its role as shipbuilder in the Air Warfare Destroyer (AWD) Program. The redevelopment of the Osborne site is a long term investment by ASC to establish a state of the art shipbuilding facility for future contracts.

Hansen Yuncken is one of Australia's largest privately owned construction companies. They operate nationally with offices in Victoria, New South Wales, South Australia, Tasmania and Queensland. The company directly employs over 600 staff, and has an annual turnover exceeding \$800 million. Since its inception in 1918, Hansen Yuncken has completed over 4000 projects.

## STATE OF THE ART SHIPBUILDING FACILITY

On-site work at Osborne commenced in February 2008 with the demolition of an outdated amenities building and a more traditional soil-turning performed to symbolise the beginning of the project. For ASC, the development is its largest infrastructure program since the establishment of the Collins Class submarine facility back in 1987.

The upgrade of the 17 hectare site includes rejuvenation of some existing facilities; two large new structures for state-of-the-art AWD production facilities; a new three storey office building for 400 employees; and a new two storey building for wharf support activities with office space and workshops for up to 75 people.

A substantial expansion of site infrastructure is also involved. Provision of new and upgraded site-wide services infrastructure will include sewer, stormwater, pavements, car parking, electrical, communications and security systems, industrial and other gas distribution systems,

plus cite civil and pavement construction to support shipbuilding activities.

The new industrial and support buildings and structures will include a Pre Outfit Workshop, incorporating multi level support tower containing services, offices, amenities and storage areas, with a total area of approximately 3,800m<sup>2</sup>, an Electrical Workshop of approximately 1,000m<sup>2</sup>, and a security support building.

Extensive site works will see new paved open spaces for the circulation of ship modules on transporters, vehicles and personnel and hard standing for ship assemblies such as modules and unassembled raw materials. New car parking for the shipyard workforce and visitors is being provided. Additional associated works will include landscaping and perimeter security fencing, all designed and delivered as part of the overall contract.

Hansen Yuncken project manager, Fred Arias, said that considerable attention had been given to design aesthetics to help lessen the visual impact of what could otherwise have been seen as just a group of big

industrial sheds. "Some clever design cues have been incorporated," he said. "The external framework of the larger of the two office buildings actually gives the impression of a large ship under construction."

Careful attention has been given to the environmental impact of the new facilities, as well as the ever-strict regulatory controls that apply to noise and occupational health and safety.

Working collaboratively, a team environment is encouraged on every Hansen Yuncken project, so that the strengths of the whole project team can identify opportunities and proactively manage risk. This process creates a clearly defined path to achieve project objectives. The aim and focus is on satisfying clients through positive relationships, open communication and clear understanding of client objectives.

Hansen Yuncken seeks to provide value and innovation across all aspects of a project. The company offers a wide range of services to ensure that clients achieve the best outcomes for their project delivery and facility operation. "Building Value" is an intrinsic part of the culture at Hansen Yuncken.



# ASC SHIPYARD

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## ACOR MEAN HEAVY DUTY

This large Shipyard Infrastructure Development Project at Osborne, South Australia, includes new and refurbished offices, industrial workshops, warehouses and specialist facilities. When completed, the works will enable the production of the AWD for the Department of Defence.

ACOR Consultants designed special heavy duty pavements, civil works, hydraulic and fire services and waste management for the ASC Shipyard project at Osborne, Adelaide.

This ship assembly and manufacturing project presented many design and construction challenges. The site involved heavy duty pavements and in ground services founded on poor and variable subgrades, with long term differential settlements. This required innovative civil design solutions to ensure that the pavements can withstand the heavy dynamic and static loads associated with shipbuilding.

The ACOR team worked collaboratively with Hansen Yuncken and ASC, providing cost effective solutions that balance ESD initiative, and value engineered designs within a whole of life approach.

The ACOR team has extensive industrial project experience including airfield, large industrial subdivisions, workshops, warehouses and specialised developments for Department of Defence.

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### ABOUT US

ACOR Consultants is a leading consulting engineering firm, delivering significant projects throughout Australia. We provide planning, engineering and design and construction management services; in Civil, Structural, Hydraulic and Fire, Electrical, Environmental and ESD disciplines.

As part of our ongoing commitment to our clients nationally, we have recently expanded the ACOR Group Portfolio to include convenient office locations and a diverse team of specialist consultants across Australia.

- Bringing together an enthusiastic and creative team of professionals dedicated to excellence in solution design and service.
- Innovative and quality performance through committed teamwork.
- Determining your needs to deliver optimum solutions for unique, complex, and multi-disciplined projects.
- Setting benchmarks for innovative, sustainable and cost effective consulting engineering services of the highest quality to “make the difference”.
- Over 100 personnel across Australia delivering civil, structural, building services, hydraulics, fire protection, electrical, aquatic, heritage, building diagnostics, environmental and ESD services and solutions.
- Masterplanning and designing large infrastructure, Educational, Aged Care, Health Care, Laboratories, Industrial, Research Facilities, Residential, Defence Facilities and Site Remediation projects.
- Coordinating services for each project using specifically designed management systems, ensuring a smooth running “buildable” project resulting in valuable time and cost savings.
- Seamless documentation of trade packages, from services within a building, through to infrastructure reticulation and final connections.
- Building positive and successful partnerships with clients.

## INDUSTRIAL DESIGN

Hassell provided master planning, architecture, landscape, planning and graphic design services as part of a team lead by Hansen Yuncken Pty Ltd for the redevelopment of the existing ASC ship building facility at Mersey Road, Osborne in South Australia.

The design brief called for large, durable and generally utilitarian industrial-type buildings – essentially “sheds”. The challenge for Hassell was how to inject these sheds with personality. The solution was to use similar materials, finishes and arrangements of fixtures throughout the spaces to give a sense of unified continuity, and to add character by emblazoning the interiors with bespoke designed graphics that convey the complex ship building process. These bold graphics are centred on the core of the building, meeting rooms and toilet blocks, with the rest of the building being enhanced with more subtle imagery of ships, identification numbers and panelling.

Hassell has a long and successful history as a designer of industrial premises for firms like International Harvester Co and CSR Timbrock, as well as major defence force contractors and all branches of the armed forces. The ASC project continues this tradition.

Founded in Australia in 1938, Hassell is a single, privately owned international network of design studios. Each has the flexibility and autonomy to service local clients and offers the advantages of access to

an integrated culture, combined resources and collective experience. As a multidisciplinary design practice, Hassell is structured around the key disciplines of architecture, interior design, landscape architecture and planning, with integrated sustainability and urban design capabilities. Hassell combines learning and experience from all disciplines to inform its design work.

Each project begins with no preconceptions nor commitments to a particular style or outcome. This individual approach develops thoughtful, informed design solutions through collaboration, investigation and communication as part of the interdisciplinary process. The aim is to create exciting, uplifting and well-ordered places while respecting the sustainability of our environment.

Hassell’s projects recognise the strengths of the past and anticipate the demands of the future, enhancing the experiences of the people who encounter them.

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## WEARABLE WASHROOMS

For many decades in Australia, Hufcor - and subsidiary company, Kyissa - have been setting industry benchmarks for operable partitions, glass walls and washroom cubicle systems. They provide high quality cubicle systems for office buildings, factories, restaurants and cafes, shopping centres, sports and entertainment venues, cinemas, schools and universities, hospitals and all kinds of public facilities. For the Australian Submarine Corporation Shipyard project they designed, manufactured, delivered and installed some 165 shower and toilet cubicles and installed them in more than a dozen locations in several buildings across the site.

Duane Burns, Hufcor's South Australian state sales manager, said that the importance of a quality toilet and shower fit out can often be under-rated. "People quickly form an opinion about your business when visiting your washrooms," he said. "What does it say about you if your washroom cubicles are flimsy and battered? Our systems make a positive impression with their quality, style and durability." The high quality designs, fittings and manufacturing methods give a professional finish. More than 20 variations are offered, allowing customised design

to suit décor preferences and blend with other aspects of a building's environment. "When work at the ASC shipyards is in full swing, it's a three shifts a day, 24 hour operation. The washrooms get a lot of traffic and use from a large number of people," said Duane, "so it's also important that the components and structure are strong, stable and durable as well as good looking."

For the toilet and shower cubicle wall modules, 18mm Laminex Compact Laminate (LCL) board was used. LCL is a made of multiple layers of paper and resin, compressed under high pressure and temperature. It is impervious to water, and highly resistant to acid, solvents and cleaning products, making it ideal for industrial and high use areas. "It is almost indestructible," said Duane. Its resistance to chemicals like thinners and solvents also mean that graffiti can be removed easily and quickly, with little chance of damage to the LCL surface.

For the ASC project a black LCL board was specified. At the manufacturing, packing, shipping and on-site assembly stages, care had

to be taken with cuts, edges and joins to give a blemish-free finish to the Satin Black surfaces. "We would not normally recommend using dark colours for a heavy use area," said Duane. "Dark colours require higher levels of cleaning. Still, I think the finished job at ASC is a great demonstration of the care our team takes with EVERY job to make sure that the designer's get exactly what they specify."

The components for all 165 cubicles were manufactured and accurately cut to shape and size at Hufcor's Tullamarine, Victoria, site, flat packed for delivery to the ASC site where they were assembled. The measure, manufacture, delivery and installation time line and site access time windows were tight.

On-site measuring for each panel had to wait until the plumbers' first fix and other trades' work was complete. Only after an accurate on-site measure up could work in the factory start to cut and shape each panel to exact size. Scheduling had to be spot on to fit in with other trades at each location in each building.

Hufcor consultants focus on enhancing the client's spaces, offering up a wealth of creative ideas and visions that inspire. "Our reputation for quality and reliable products, clever designs and an insistence on excellent service is the reason why architects, engineers and contractors routinely insist on Hufcor partitions for their building projects," said Duane.

For designers, Hufcor and Kyissa CAD drawings and product specifications can be viewed on line at [www.hufcor.com.au](http://www.hufcor.com.au). It takes about 30 seconds to give your contact details and gain log in access.

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## CAPACITY, EXPERTISE AND RESOURCES

The electrical and data cabling installation sub-contract at ASC shipyard presented some significant project management challenges for Watters Electrical Australia.

The scope of the sub-contract covered both the general site and specific refurbishments and new installations in several buildings. As well as general electric and lighting services, Watters supplied and installed integrated voice and data cabling, and electrical services for smoke and fire detection systems and alarms. A stand-by diesel generator system was also supplied, with an uninterruptable power supply to selected buildings.

Watters Electrical project manager for the ASC job, Mark Taylor, said that the very short deadline and several last minute changes to the scope of works made Watters' depth of experience and project management skills vitally important in getting things done to specification, on budget and on time.

"It was no job for inexperienced amateurs," said Mark. "Getting the logistics right is everything on a job like this, where you have other contractors installing other services, all working in the same spaces at the same time."

Watters Electrical has the capacity, expertise and resources to manage and coordinate all types of electrical work, and its service division plays an integral part in the overall package. All offices have fully equipped service vans on the road. They offer breakdown and routine electrical maintenance services, ranging from a periodic walk through to smaller electrical projects.

Particular attention is paid to, the environmental impact of products promoted and offering energy-saving solutions.

"It's all about putting the client first," said Mark. "We pride ourselves on working with minimal disruption to all. We aim to be 'proactive' rather than 'reactive' service providers, and try as far as possible to anticipate our clients' needs."

Other Watters services include thermal managing, energy management, exit and emergency testing, data cabling, and testing and tagging

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Dexion Adelaide designed, produced and installed Freetrack Compactus storage systems, custom-designed personal lockers and change-room benches for the ASC shipyard project at Osborne.

The company has been involved in research and development of office storage systems for more than 20 years, and is the developer/owner of the Freetrack range of Compactus tracking systems. Freetrack revolutionised the Compactus storage market in Australia and New Zealand when it introduced a low profile, lightweight, aluminium track and runner system on which the shelving cabinets are mounted. By moving away from pre-fabricated bases, the system allows for customised lengths, shorter lead times and also spreads the load weights on floors, making the use of Compactus systems possible in high-rise buildings with reduced floor point loads.

In 2003, the company introduced a ground-breaking mechanical upgrade, called *Mekdrive*, to the Freetrack compactus range. *Mekdrive* provides mechanical operation for heavy compactus cabinets, without the use of an axle, and reduced costs dramatically when compared to other mechanical systems available on the market at that time.

As the Freetrack *Mekdrive* System specified for the ASC project is modular and designed to clip together in-situ, without floor fixing, the

delivery and installation of quite large compactus systems for the ASC project was trouble-free.

A non-standard, black satin semi-gloss finish was specified and manufactured to order for the project, so that the storage systems would be sympathetic to other design elements in the office surroundings. The specially-designed personal lockers were also finished in black satin semi-gloss, with alternating contrasting coloured doors to add visual interest. Matching, sealed hardwood slat benches were also supplied, to compliment the personal lockers aesthetically, and provide durability for daily use.

Dexion's contribution to the ASC project was, as usual, completed on time and on budget.

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