

ANOTHER BAULDERSTONE SA SUCCESS STORY

Edinburgh Defence Precinct is undergoing a \$623.68 million transformation, including the construction of the Hardened and Networked Army Facilities Project (HINA), which has seen the 7th Battalion Royal Australian Regiment (7RAR) relocate from Darwin to Adelaide, forming a battalion group which includes combat engineers, medium artillery and logisticians.

The project was managed by Sinclair Knight Merz and construction contracts were let to Baulderstone Pty Ltd, Abigroup Ltd and Leed Engineering. GHID was awarded the design services consultancy contracts to fully design and document the works, supported by an Edinburgh Design team comprising Aurecon (formerly Connell Wagner Pty Ltd) (engineering), Woodhead International (architecture), Rider Levett Bucknall (quantity surveying) and Aquenta (formerly Currie & Brown) (quantity surveying).

Four packages of works were defined, with Baulderstone awarded the contracts for Package 1 and Package 2. There were approximately 65 buildings to construct, including a headquarters and office facilities; working accommodation; a theatre and model area with amphitheatres for operational planning; commercial facilities including tenancies for the base post office, Frontline cafeteria and store, barber and community centre; facilities including a Weapons Test Simulation System facility and a Night Training Facility; a combined mess serving both Army and Air Force; social areas for officers and enlisted personnel; and a new physical fitness centre comprising swimming pool, two basketball courts, three squash courts and a cardio/weights/spin room. These two packages also included site preparation, demolition of nominated buildings, remediation works, infrastructure services and construction of pavements, car parks and landscaping.

The project team developed a draft Green Star rating tool for application to the numerous industrial buildings as no tool was available at the time. Each building was self assessed to achieve Defence's objective for the equivalence of a 4 Star performance.

The site wide approach to sustainability included an emphasis on pedestrian/cycle use, maximum re-use of demolition material and the implementation of a major storm water capture, treatment and distribution system for site irrigation and toilet flushing. The storm water system is also linked to the Salisbury Aquifer Grand Recharge system.

"From the outset of the project, Defence strove to communicate widely and early with all potential stakeholders, both internal and external to Defence. Communications Plans were prepared and followed to ensure a high level of ongoing communication. The project team also developed a project strategy and actively sought buy-in to this as new project team members joined the team (as each new contract was awarded)," said a Defence Spokesperson.

"The project strategy provided for robust administration of the contracts but also sought to achieve a strong collaborative project team approach with open and honest communications between all parties. This was very successfully achieved on this project and was a major contributing factor to achieving the very tight program while also producing high quality facilities within budget."

For Baulderstone, achieving nine separate delivery dates, maintaining concurrent works programs at multiple fronts across a vast site and managing a workforce which peaked at around 900 workers was a logistically

demanding task. Their team of up to 60 direct employees began work on site in November 2008.

"We had a very strategic plan for how to split the work to meet the program timeframes," said Baulderstone Project Director, Vince Hatch.

"There was a very tight timeframe with a critical end date for the major stages. By October 2010 we had all the working accommodation facilities completed to allow Department of Defence to undertake their final security accreditation and ICT in order to be ready for the troops coming down from Darwin at the beginning of 2011."

A massive amount of civil works were undertaken including cut and fill, extensive areas of heavy duty pavement for Armoured Personnel Carriers and extensive amounts of light duty pavement and parking areas to construct.

Landscaping was another vast and time-consuming task, with tree planting, preservation and enhancement of existing bushland and creation of irrigated and non-irrigated grassed areas.

A site-wide upgrade of engineering services was also completed, including a totally new high voltage electrical distribution system across the entire site, a full upgrade of the communications system and upgrades to water and fire services.

Baulderstone's team brought innovation to the project, particularly in the design and construction of the new medical centre. The site master planned for the medical centre had previously been a fuel dump, and hydrocarbon contamination was identified in the soil. The medical centre design had therefore initially planned for extensive under floor ventilation systems to remove hydrocarbon emissions. By redesigning the underfloor services, and constructing a clay cap over the contaminated area, Baulderstone were able to remove the need for these systems, improving the energy efficiency of

the facility and reducing both up-front costs for mechanical services and long-term maintenance requirements.

All of the works had to take into account the security and safety requirements of a working military base. Baulderstone worked closely with the base personnel to ensure the construction activities and military activities did not impact on one another.

"There are two things we are especially proud of with this project. We had an exceptional safety performance, which was driven by good support from the client and robust systems through the site safety plans, and with inductions, and this was driven through to the subcontractors. In over 3.3 million man hours worked on site, there were only two minor LITs," said Vince.

"The other source of pride for us, is the exceptionally tight construction program had to be met, and we took it on board to act in a collaborative manner with the client, the client's agents and the consultant, and we handed over every stage on the contracted date.

"We had a well documented plan for handover, completion and commissioning, and took a lot of time with Defence and the Defence stakeholders including the Defence ICT providers and the maintenance contractors, engaging with them throughout construction to enable a seamless handover. "On this project, we really raised the bar in terms of our performance."

Commanding Officer of 7 RAR, Lieutenant Colonel Mick Garraway said the facilities at Edinburgh are really important for the Army. "The Adelaide facilities enable Army to establish a battalion group down in southern Australia, away from the restrictions they normally have in the wet season in the Northern Territory. Most of the soldiers are from the eastern states, or even SA, so it also allows them to travel home to family on leave periods much more easily," he said. "These are first-class facilities and by far the best Army Barracks in the world".

HARDENED & NETWORKED ARMY

MAIN CONSTRUCTION COMPANY : Baulderstone
DEVELOPER : Department of Defence
PROJECT END VALUE : \$623.68 Million
COMPLETION : End 2011
CONSULTANT TEAM : GHID, Woodhead and Aurecon

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CREATING THE FUTURE FOR DEFENCE AT EDINBURGH, SA

The 'Edinburgh Design Team' has set a new benchmark for integrated design excellence following the successful delivery of the Hardened and Networked Army (HNA) project. The AUD600 million project had complex technical and logistical challenges associated with a campus-style site, with more than 60 buildings, a wide array of building types, complex building services, high Environmentally Sustainable Design (ESD) standards, significant site infrastructure and tight timeframes for design and construction.

The Edinburgh Design Team comprised people from GHD, Woodhead, Aurecon, Rider Levett Bucknall, Aquenta and Oxygen, working side by side in a dedicated project office. This integrated 'best for project' approach

streamlined the design process, saved time, provided consistency of detailing and design approach across the project, and improved design coordination. A successful full time, site-based, project team was established to support the client and the constructor during the construction phase.

Every discipline related to the design and delivery of a major facility project was involved in the project, with the diverse range of facility types offering an exceptionally wide range of technical challenges. The team structure identified a cross project design leader for architecture, interior design, landscape architecture and in each engineering discipline including Civil, Structural, Electrical, Mechanical, Fire, Hydraulic, Communications, Security, High voltage electrical and Acoustic. The design leaders from each discipline team worked collaboratively to identify the practices and principles to be applied to meet the statutory and Defence standards specified in the project brief.

The successful results reflect a high order of design leadership and design capability, with a number of building

typologies developed to reflect the different functional zones of the site whilst providing an overall unity to the campus of buildings.

The project design phase was remarkably completed in only 15 months from award, in keeping with an overall challenging delivery program which required a substantial proportion of the works be completed by October 2010 to enable the relocation of Army units from Darwin in January 2011. The development of such a substantial design program (over 5,000 drawings and associated specifications) in such an abbreviated period required a highly coordinated approach to design management.

The project was designed to comply with Defence's Green Buildings Policy, which seeks to achieve the equivalent of a Green Buildings Council of Australia (GBCA) 4 Greenstar rating for office accommodation. Due to the extensive number of industrial workshop, storage and technical buildings, for which there was no existing GBCA rating tool, the project team developed a draft rating tool for industrial buildings which has been since submitted to GBCA as the basis for a future rating tool.

A whole of project approach to sustainable design was taken, which extended beyond individual facility design to consider features of the campus environment, for example, emphasis was directed to pedestrian and cycle movement within the site to minimize reliance on vehicle transport. The project team, in collaboration with Defence's Infrastructure and Asset Development Branch, identified water and energy conservation and indoor environmental quality as the primary drivers for success of the project. Particular emphasis was placed on enabling developing technologies and ensuring future opportunities for sustainable systems and technologies could be considered for adoption as they become available.

Aspects of the whole of site approach to water efficiency include stormwater collection, treatment and re-use. A 5.7 ML membrane lined storage basin was filled with demolished brickwork from existing buildings and covered with geofabric and earth fill. Captured water is treated to Class A standard and reticulated around the site for toilet flushing and landscape irrigation.

Internal 33kV site HV reticulation with step down infrastructure was provided under Defence's contract to effect a redundant supply arrangement to support maintenance of site operations. The Central Emergency Power Supply system was upgraded and incorporated a load management system to enable load shedding of non essential facilities.

There has been extensive use of steel fibre reinforced pavements to accommodated heavy military vehicles (including tracked vehicles), which has been deemed the most sustainable option based on a whole of life assessment of alternative pavement types.

Due to the large, flat site and the level of existing sewer mains adjacent to the site, an innovative low pressure suction sewer system was identified as the preferred option from an all of life perspective. Due to the innovative nature of this approach, SA Water Corporation was engaged into the design process to ensure their acceptance of the final solution.

Specialist Defence training facilities including a Weapons Target and Training System (WTTTS) and a night-vision training facility (Ninnox). These required specific communications, security and environmental control systems to be developed and installed, to meet the strict performance requirements of the operating systems within each facility.

As the site is an operational air base, careful phasing of the works was required to maintain operational capability. The extensive redevelopment of electrical and communications site infrastructure required close engagement with site managers and operational units to ensure the maintenance of all site functions.

The project was designed to enable the mounting of four concurrent head contracts with the main contracts (Head Contract 1 and 2) having a number of completion stages to facilitate Defence takeover and progressive mobilisation of units.

Emphasis was applied to consistent construction methods with as much off-site fabrication as possible to streamline the project delivery phase. There has been extensive use of precast concrete and panelised aluminium cladding to minimise whole of life maintenance costs.

The project had an exceptional safety record with only 2 lost time injuries from 3.4 million hours worked across the 4 contracts.

"The project has been recognised as an exemplar within the Defence estate having been delivered to a high quality, on time and below budget," said GHD Manager of Property and Buildings, David Pincock.

"The scope and diversity of the HNA Project identifies it as one of Australia's significant infrastructure projects over the last ten years. In the Defence sector, it is the largest design consultancy that has ever been awarded for a buildings and infrastructure project.

"The Department of Defence has recognised the resulting design and construction as the new benchmark for the Defence estate and accords the project status as a benchmark of Australian integrated design practice."



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DEDICATED TO ABSOLUTE ACCURACY

Before, during and after every construction activity on stages 1 and 2 of the Hardened and Networked Army project, SKS Survey teams were in action, providing survey activities, set out and control. This task was both enormous and complex, but extremely satisfying.

SKS maintained a field office on site for over two and a half years, with up to twelve staff working on providing set out, monitoring, verifying structural elements, data acquisition as well as collating all the information and updating Defence drawings, detailing all civil and built works, all services including drainage, electrical, communication cabling. Initially, SKS were engaged by Baulderstone to establish major control for the project and subsequently engaged by the subcontractors to carry out their survey requirement pertaining to their trade. The survey teams were equipped with both Trimble RTK GPS units, Trimble Robotic Units and Precise Digital Levels.

"The challenge was to both control and manage the enormity of the project. There were 85 buildings with the various stage of works included surveying earthworks, building pads, checking holding down bolts, monitoring concrete pours, checking steel erection, setting out services to buildings, roadworks, large drainage works, stormwater drains and car parks," said SKS Survey Manager, Kim Charlton.

"Another major aspect was the networking of all the different types of cable from High Voltage through to communications. We were given a Defence CAD drawing of the existing services and our teams had to locate and identify where there would be interference between the existing and new services. When services were placed by a contractor, we had to locate them and add this information to the

Defence drawing. This progress was carried out on a fortnightly basis and formed the basis of a safe digging reference for future works."

SKS had to maintain extremely strict confidentiality on this project, and meet stringent security requirements, as their work took them not only over almost every inch of the RAAF facility, but also onto DSTO and other Defence areas.

SKS are now working on Edinburgh RAAF Base Stage 2 Project. Other current and recent projects include the Seaford Rail Extension, the Sturt Highway (Gawler-Nurioopta), the Port Wakefield Batteries project and redevelopment to the Adelaide Convention Centre. SKS are experts in machine guidance and volume calculations, sediment monitoring skills currently in use on Defence land at Outer Harbour. Company Principals, Kim Charlton and Scott Bacchus have many decades of combined experience in the field, and provide a high quality licensed & engineering survey service for infrastructure designers, developers, architects, builders, engineers and construction companies.

SKS teams have also surveyed numerous roads, freeways, expressways, railways, pipelines, subdivisions, wind farms, switchyards, tunnels, bridges and industrial projects in both South Australia & Victoria. With 22 staff, SKS are able and ready to undertake projects nationally.

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AIRPORT DOORS DELIVERS EXCELLENCE FOR HNA

The Hardened and Networked Army (HNA) project offered Airport Doors their largest and most challenging commission to date. Working with the design team from the project's earliest stages, Airport Doors introduced new techniques and processes to the manufacturing operations to meet the requirements of this leading edge facility.

Airport Doors manufactured and installed 116 Fold-Up doors, approximately 100 Steel Roller Shutters, 20 Aluminium Roller Shutters, 9 Fire Shutters and 17 Aluminium Roller Grilles, all of which had to meet Defence's exacting specifications and ongoing performance requirements.

The sheer size of the project, with around 30 buildings spread over a square kilometre site, and often simultaneous building fronts opening, meant a specific installation team was dedicated to the project in order to meet program deadlines. With worksites up to 800 metres apart, a telescopic forklift was used to enable flexibility in the rough, and often muddy, terrain.

Airport Doors has been supplying the building industry with quality doors since 1958, and is widely recognised for its unparalleled excellence in the design and manufacture of commercial, industrial and residential doors. The company specialises in counterweight doors, roller shutters and grilles, sectional doors, roller doors and custom made doors. Constant innovation in both products and manufacturing processes puts Airport Doors at the forefront of door technology.

With branches throughout Australia, 170 staff and two large manufacturing plants in Melbourne and Brisbane, Airport Doors has

the capacity to meet the needs of multiple major projects across all sectors of the construction industry. Other current major projects include supplying Aluminium Roller Shutters to the Campbell Barracks in Swanbourne; supplying Roller Doors and Fold-Up Doors for the HUET underwater helicopter training facility; supplying fully glazed Fold-Up Doors for Perth City Square; and supplying a range of products for the Christmas Creek iron ore mine in Western Australia.

Airport Doors have also recently supplied Amberley RAAF Base; AAMI Rectangular Stadium; Binningup Desalination Plant; and Matrix manufacturing plant, for which the company designed and manufactured custom-made high speed Vertical Lift doors.

With over 50 years experience, a reputation for superior workmanship, and engineers and sales staff dedicated to delivering client-focused results, Airport Doors takes pride in its ability to meet the requirements of even the most highly specific or unusual design briefs.

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TIMBER BLIGHTERS STARVE AT HNA

There's a certain pest that will struggle to get past the security at the new facilities at the Hardened and Networked Army (HNA) project – the subterranean termite. Termimesh South Australia were contracted to supply their award-winning Termimesh termite control system to every building of stages 1 and 2. This amounted to two years virtually fulltime on-site, installing the termite control package for approximately 54 buildings. In total, more than 12km of stainless steel mesh has been installed, and over 1,000 service penetrations through concrete substrates protected.

“Logistical coordination and communication would be the biggest challenges faced when taking on a project of this type. Due to the size of this project it meant ensuring labour and materials were designated purely for this project,” explained Termimesh South Australian Sales Manager, Mr Tracey Hendy.

“As a functioning base all staff had to attend quarterly Air Side Awareness training as well as annually renewing their access passes for each individual stage. With multiple buildings being constructed at any given time and these buildings being tendered to more than one concrete company, our supervisor and his team of technicians would be dealing with numerous supervisors, trades and administration staff. As a functioning base, it meant being aware of security protocols and safe work methods given the geographical size and construction size of this project. It was imperative that all work be scheduled and completed in a timely manner as a delay on one building could have serious ramifications on other buildings and the following trades.”

“Being a physical barrier and not being reliant on chemical components, Termimesh System was a natural choice for this project. The durability of the ultra marine grade stainless steel barrier and the fact that it is

not reliant on costly annual inspections is a definite advantage. Projects of this type due to their security protocols do not readily allow for ongoing maintenance and inspections from third parties.”

Invented in Australia, and tested by the CSIRO, Kyoto University and the US Department of Agriculture, Termimesh System is absolutely effective against every species of termite. By cutting them off from both food supply and potential habitat, it literally builds them out, rather than using toxic chemicals to poison them.

Termimesh's brilliant product and over 20 years' experience in tailoring installations to meet specific project needs, backed by a market leading warranty, CodeMark certification and strict quality standards to ISO 9001, has not only generated business Australia-wide through a network of independent franchises, but has also garnered a share of the market in Asia, France and the USA.

Other recent South Australian projects include Noarlunga GP Plus super clinic; Helping Hand Aged Care, Northgate; Riverside Retirement Village, Goolwa; M2 Building, Mawson Lakes Campus and St Joseph's School Refurb, Port Lincoln. Termimesh is the preferred option amongst leading architects and builders wherever effective, long lasting and non chemical termite protection is a requirement – which really is any commercial building.

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HNA OPENS NEW DOORS FOR WOODPEND

Experience and trade skills were key for Woodpend Hardware's successful supply and install of the door packages for the Hardened and Networked Army project. With a construction project involving 32 buildings under simultaneous construction over a vast site, project management logistics were a major challenge.

Woodpend supplied and installed Pressed Metal Door Frames; Metal Clad Exterior and Plant room Doors; commercial timber doors SCEC and Fire Rated; all commercial Door Hardware; Fire Rated and Acoustic Seals; Stainless Steel wet area sundry items; and a High Security Restricted Master Key system which they designed themselves. Specifications included all timber doors having FSC and Green Star certification; all doors and door hardware SCEC Endorsed to “Secure” Level Rating; Acoustics to specific RW rating to doors and seals; and Fire Rated Certification to both doors, Hardware and seals.

“Woodpend was able to assist with redesign/upgrade of the construction documents to the specification for doors and hardware in conjunction with the project architect GHD and project builder Baulderstone,” said Woodpend Project Manager, Damian Ryan.

“There were design issues with door applications which had to be resolved on site when installing product. Our team were on site for 18 months, and we currently still have a small team on site working with Baulderstone, and completing additional works for The Defence Department. Through the 18 month period on site we had 22 on site from project/site managers to carpenters and five personnel in head office managing the project administration and procurement.

“The HNA gave us the opportunity to be able to work on a project at this scale in South Australia and to be partnership with Baulderstone

on a well orchestrated construction program. Our company has been able to develop further with skills and management tasks, strengthening our service and expertise into Project Management.”

Woodpend's skills and 25 years of experience give them the ability to meet the needs of an extremely broad variety of design briefs for doorway systems, from high security environments to high-end residential and recreational projects. The company is Code of Conduct compliant, SCEC Endorsed supply and install, and has a Fire Rated Door Manufacturing License. Recent restructuring of the company enables Woodpend to undertake hardware supply right up to full package project management contracts, and having 35 staff ensures that multiple major projects can easily be serviced.

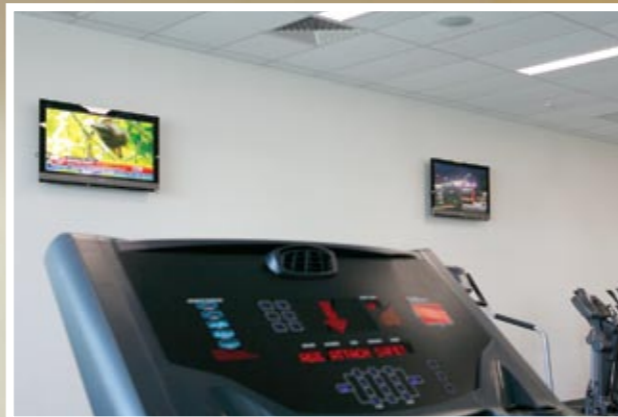
Other recent work includes supply and install of all doorway systems for the GP Super Clinic Marion built by Candetti Constructions; the State Aquatic Swimming Centre, also Candetti Constructions; SAPOL New Headquarters for Built Environs/ISIS; Queen Elizabeth Hospital Redevelopment Stage 2 & 3 for Hansen Yuncken; Dunstan Playhouse Refurbishment Stage 1,2 & 3 for Mossop Constructions; Hilton Hotel Refurbishments for Mossop Constructions; Uni SA M2 Building Mawson Lakes for Hansen Yuncken; and Wave & Edge Buildings King William St for Hansen Yuncken.

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LEADING EDGE AV SYSTEMS FOR OUR LEADING EDGE ARMY

With access to state of the art audio-visual technology, Pro AV Solutions ensured that the 1,800 troops stationed at the Hardened and Networked Army (HNA) base have the very best in sound and vision technology throughout their health, sporting and dining facilities.

The Health Facility installation consisted of vision and entertainment systems for the waiting rooms, offices, dining and patient accommodation areas, plus integrated projection and audio presentation systems for clinical meeting rooms and a secure video conferencing facility.

The multi use sporting facility encompasses gymnasium, swimming pool, basketball courts, offices and amenities. This site boasts a multi tiered AMX control system which allows for simultaneous independent and centralised control of the audio and visual services within the vastly varying environments. This solution incorporates a range of sophisticated audio visual technologies including products from Sony, Turbosound, Lab Gruppen, MediaMatrix, Renkus-Heinz and AKG.

The combined mess facility incorporates flexible Audio Visual solutions which can accommodate the diversity of uses of the social complex. An entertainment and recreation hub has been created, throughout which the AMX Control system manages the Projection, LCD Displays, Matrix Switching and Audio technologies across the different areas such as bars, lounges, dining, meeting and family rooms, and outdoor entertainment areas.

Pro AV Solutions system designs focussed on performance, reliability and scalability, whilst maintaining an intuitive and user friendly interface. Pro AV Solutions highly skilled team of Installation and Engineering staff were integral in commissioning and fine tuning the audio visual systems to their optimal performance. All critical components were pre-tested to ensure they met the high performance, low maintenance requirements of Defence.

“The key to meeting Defence deadlines was the ability of our onsite installation teams to coordinate well with other trades in a rolling construction environment. Faced with unseasonal rains affecting the site early in the project, and the Japanese earthquake disrupting equipment continuity from our suppliers late in the project, our experience in project management still ensured our client was delivered a first class solution on time and in budget,” explained Pro AV Solutions AV Systems Specialist, Dariusz Krol.

“It is great to be involved with another landmark project for the Department of Defence, and we look forward to contributing our experience and innovation to their future audio visual and technology needs.”

Pro AV Solutions is an independently owned and operated South Australian company, which specializes in Audio Visual System Design and Integration; Digital Signage Solutions; Videoconferencing and Video & Audio Production equipment. In business since 1987, Pro AV Solutions are the premier Audio Visual Integrator in South Australia – both in terms of size and quality of works performed.

Pro AV Solutions have recently completed major Audio Visual works for SafeWork SA's new Keswick Facility, where the project focus was creating a user friendly work environment for the health and wellbeing of their staff. Current projects include interactive presentation solutions for BDO Australia's new training centre, which combines control, automation, projection and interactive whiteboard technologies for an innovative engaging experience. A major upgrade to the lighting for Network 10 Adelaide's News Studio and comprehensive Audio Visual solutions for the Mossop Group's new Hindmarsh headquarters.

TAKING PROJECTS FROM SLAB TO FABULOUS

Tackling time pressures, resolving design challenges and supplying and installing specialist materials made the Hardened and Networked Army (HNA) Medical Centre a worthy challenge for Adelaide Partitions & Ceilings Pty Ltd (APC). They installed Cemental Sheeting to the Medical centre walls, acoustic suspended ceilings, and undertook the Fire Rating and Sound Proofing, with all work backed by the company's ISO 9001 Quality Assured Certification.

This project was not an entirely simple one. The Medical Centre required a large amount of 12mm cement sheet for the internal linings, and this heavy material meant extra OH&S measures needed to be developed. These included regular tool box meetings and safety meetings, and keeping two APC site safety supervisors onsite throughout.

Included in the walls package was the supply and installation of X-Ray Glass in the X-Ray area, sourced from one of APC's regular specialist suppliers, and the fitting of 4mm double lead sheeting behind the Gyprock in the X-Ray area. Due to a design issue, these lead linings had to be hand cut with snips on site by APC's tradesmen in order to fit the frame.

The Fire Rating works included separating certain areas into compartments, undertaking above ceiling works and working on seals for services through the walls. APC have undertaken an extensive amount of health facilities Fire Rating works, and brought that experience to the HNA site.

APC had a total of 39 tradesmen and apprentices at work on the HNA project for close to eight months, committing such a large workforce in order to meet the critical timeframe for works. The result was successful completion on time, and within budget.

“There was a big push towards the end, so we added extra labour to ensure we kept up to program,” said APC Director, Pat Glancey, who has over 40 years experience in the industry.

“Our company can do steel stud and plasterboard erection, suspended ceilings, architecturally designed ceilings, render and external cladding, walls and partitions, acoustic and thermal insulation, and aluminium shop fronts – with either on site fabrication, or offsite fabrication. Our staff of 74 includes fixers, flushers and carpenters. Basically, give us a slab, and we can do the rest.”

APC is DTEI Category 2 Certified, which allows the company to tender for large contracts like their \$1.6 million job at the HNA project. Other recent work includes St Hilarions Aged Care Facility for Romaldi Constructions; Quest Apartments at Mawson for Badge; Defence Science and Technology Organisation (DSTO) for Hindmarsh; Playford Nursing Home for Kennett Builders; and The Pines Aged Care Facility for Weir Constructions, which won a National MBA Award. APC are currently working on a number of projects including RAAF Edinburgh Redevelopment Stage 2, Australian Submarine Corporation Outfit Support Towers, Victor Harbour TAFE, Queen Elizabeth Hospital- Mental Health Facility and Rehabilitation Centre, Helping Hand Northgate and Tanunda Lutheran Aged Care Facility.

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QUALITY MASONRY ON TIME & ON BUDGET

For over 30 years, Colangelo Group has provided top quality construction services. The company's team recently brought their talents to the Hardened and Networked Army Project, constructing approximately 10,000m² of polished concrete block walls for the Health Facility, Gymnasium, F1 Combined Messes, Corporate Facilities and Sporting Facilities.

The Boral polished blocks Colangelo's team of up to a dozen masons used offered a definite speed advantage, allowing the overall program to advance at a cracking pace.

"The blocks also make craneage and hoisting simpler than it is for precast concrete," said Colangelo Group Director, Rob Colangelo.

Colangelo Group are a fully Code Compliant privately owned South Australian company, and Quality Endorsed to ISO 9001. Constructing

masonry for the C17 Army Building for Candetti Constructions ensured they knew the drill for Defence projects, and the company also recently worked on the Five Green Star Burnside Shopping Centre for Multiplex.

"We also do our own construction and developments, and recently completed a project of 38 apartments in the city, using block rather than precast," said Rob Colangelo.

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FLAWLESS WORK FROM EDINBURGH TO THE NEVER-NEVER

Outback locations and vast sites are familiar territory for Greg Meyer Paving. The Darwin-based paving contractors has been responsible for paving works at some of the nation's most iconic remote sites - the new Sunrise Carpark at Uluru, Seven Spirits in Arnhem Land and walkways in Kakadu at Nouralang and Ubirr Rock. Greg Meyer's team have also paved huge areas for Defence projects, including 120,000m² of paving at the Hardened and Networked Army Project.

Their team of seven men used three paving machines to lay 220mm x 220mm x 8mm ADBRI Anchorlock interlocking concrete tiles, each weighing 8kg. Working in stages over a twelve month timeframe, the job was completed with a perfect safety record, with between 700m² and 1000m² per day laid. The company also brought two bobcats to the project with screens for screening the bedding sand.

Greg Meyer's Code Compliant team have also laid almost a million square metres of paving at Robertson Barracks Darwin, completed works at Mount Bundy Army Training Facility, Tindal RAAF Base, Bradshaw Training Base at Timber Creek, Alice Springs Airport and Darwin Airport. Self-sufficiency is key to their success, with the crew providing their own power, water, and transportation to wherever their skills are required.

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COMMERCIAL LANDSCAPING ON A GRAND SCALE

With over 40 years in the trade, Wilson & Co Landscaping brought a sound combination of skill, experience, plant and manpower to the HNA project. Up to fifty staff worked on the HNA 1 & 2 project over two years completing all the irrigation, instant turf, grassing and planting of trees & shrubs etc.

The irrigation system was designed and constructed for grey water and involved the installation of 230 solenoids, 165km of in line drip irrigation, 5 ACC time clocks, and a Hunter decoder system for the operation of the above. This was a challenge for both installation and design by our Hydraulic Engineer.

Wilson & Co Landscaping undertakes a diverse range of landscaping and irrigation projects across Adelaide, and also worked in Darwin for many years. With our Project Managers, Site Managers and staff our qualifications include horticulturalists and ticketed plant operators for

machinery including front end loaders, skid steer loaders, mini excavator, tippers and tray top trucks. "Having worked with the builder on many projects, their confidence in us came from our previous performance. We worked alongside the builder to achieve the best result possible and had to meet challenging targets, keeping in mind that there are always changes and variations occurring. This is the largest job we have ever undertaken in a short period of time," said Managing Director, John Wilson.

Some of the company's other recent projects include landscaping and irrigation to Australian Submarine Corporation; River Torrens Linear Park redevelopment; Lyell McEwin Hospital stages 1 & 3, and our award winning projects - North Terrace Redevelopment, Adelaide Airport and Newport Quays landscaping & irrigation.

WILSON & CO LANDSCAPING Pty Ltd

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