LOOKS SIMPLE -BUT IT WASN'T

ver 1.5 million working hours went into the construction of Ver 1.5 million working notes were the \$485 million Southern Queensland Correctional Precinct (SQCP) Stage 1, near Gatton. The project, managed by the Department of Public Works on behalf of Corrective Services, offered numerous challenges for Baulderstone, with the green field site being miles away from anywhere, and the strict design and construction requirements unique to a secure facility.

"A prison itself to look at really is quite simple, a group of painted Project H, in the SQCP project, is a multi-purpose sports and assembly block-work buildings with no detailed finishes obvious on the outside. It's what lies inside the block work that makes constructing the confines of a prison not so simple – the services. Installation of the vital services located within the walls of the prison required close coordination between all trades during the structural stage of construction as the building is going up. Naturally this was one of the biggest challenges for the construction team as there was no room for error," explained Baulderstone Project Manager, Ingo Niemeier.

"All trades had to understand the specific design requirements, which meant the 600 plus people working on site at any one time had to pay strict attention to detail. The services are as complex as a hospital, but unlike a hospital, a prison is obviously a highly secure facility. To get the tradespeople into this particular mindset was a challenge in itself

As part of the early works period throughout late 2008, clearing and An estimated 4500 apprentice hours were used to construct the building constructed. Baulderstone also constructed a canteen facility and hired

a catering company to provide onsite meals for workers. By January 2009 the installation of in-ground trunk services commenced, with the first footings constructed in March 2009.

Baulderstone had a team of 57 working at the SQCP, including foremen, environmental staff, engineers, administration and project management. In addition to this, over 45 subcontractors were employed on the project, many of them drawing labour from the surrounding local area.

With up to 600 workers on site per day during the project's construction peak, the SQCP has been a training ground for a number of employees, with a dedicated building known as 'Project H' constructed entirely by apprentices and trainees.

hall that was constructed entirely by apprentices and trainees. The idea was to select an appropriate building from the project plan and give the apprentices involved responsibility for its completion.

Each trade carried out works using apprentices and trainees supervised by a qualified tradesperson. The scheme taught participants coordination and management skills and provided them with the ability to hold their own weekly trade coordination meetings, undertaking short-range programmes and minuting their meetings. They also formed their own safety committee from within the group, who inspected and documented safety actions throughout the works of Project H.

The Project H initiative also gives apprentices, who usually focus exclusively on their own core trade, the opportunity to gain experience across all the trades required to make a building, exposing them to the bigger picture.

for the participants and industry far outweigh the cost and time As there is no Green Star ratings tool for prisons, Baulderstone applied implications involved.

per cent, which includes apprentices and up-skilling of workers to certificate facility including timed showers. Low VOC paints and epoxies were used, levels. We exceeded 150,000 hours of training on this project which included both apprentices and up-skilling, and had a dedicated Training Coordinator working on the project. Early on we engaged with Boys Town, to give some of their young people an opportunity to learn skills and gain something of a track record with employment. We had twelve Boys Town youth come through, including Indigenous young people, with eight of them gaining jobs or paid traineeships afterwards," Ingo said.

"The SQCP has been exciting for everyone involved in the project. We've been working on Stage One for almost three years now and it's given Baulderstone the opportunity to make a real difference in the Community."

Baulderstone are immensely proud of the work they do within to keep the end-users in check. community groups and as part of the company's long term commitment to corporate social responsibility, Baulderstone worked hard to recognise Early on in the project the project team investigated the possibility to and support the local community during their time in Gatton.

team raised \$170,000 for various charities over the life of the project, putting green for the local golf course."

the security company and the local sewerage transporter were both local contractors. In addition to this, local job creation and increased business activity in the local area during construction are shining

SOUTHERN QUEENSLAND CORRECTIONAL PRECINCT



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AUSTRALIAN NATIONAL CONSTRUCTION REVIEW

their own best practice environmental standards to the project. The green initiatives at the SQCP include the construction of two 25ML dams for "Government funded projects have a minimum training requirement of 10 irrigation, rainwater harvesting and water-saving measures throughout the and solar hot water installed for some areas of the prison.

> As there is no public sewerage system to connect to, a Waste Water Treatment plant was constructed, which will deliver recycled water for fire protection, cooling towers, laundry, and toilet flushing. The toilet flushing is a vacuum system which uses only 1.7L per flush, and the gas fired hot water doubles as a heating source via a heat exchanger, delivering heating to inmates during the cooler months. The double block walls themselves have good thermal qualities, which have been boosted with the use of foil insulation in the cavity.

Quite aside from inmate-proof walls, floors, ceilings, windows, doors and furnishings, the SQCP also has a state of the art security system

utilise an alternative electronic security system rather than use the same system as in all the other correctional centres in Queensland. After a "We are very proud of our fundraising effort on this project. Our ____ lengthy investigation period and tender process, an alternative electronic security system was selected. A lot of effort went into the checks and and also provided in kind help to the Gatton Boys Brigade, and built a balances for this system, with one of our engineers going to Adelaide every two weeks for a year to work with the subcontractor for the security system. It was great to see the support of all the stakeholders "Local industry participation was also an important part of this project; _____ and the new security system is probably the element about the project we are most proud of," said Ingo.

> "After completion late this year, Queensland Corrective Services will bring their team to site to carry out the necessary training required to

> > **MAIN CONSTRUCTION COMPANY : Baulderstone CLIENT : Queensland Corrective Services PROJECT MANAGER : Department of Public Works** COMPLETION : Stage 1, June 2011 SURVEYOR : Eso **TOTAL DEVELOPMENT COST : \$485 Million**

BAULDERSTONE Level 3 / 44 Musk Avenue Kelvin Grove QLD 4059

t. 07 3835 0555 f. 07 3832 0269 www.baulderstone.com.au

QLD PROJECT FEATURE SOUTHERN QUEENSLAND CORRECTIONAL PRECINCT 149



INNOVATIVE AND SECURE ELECTRICAL SOLUTIONS



Stowe supplied all the conduits; installed the pits; did the electrical high voltage switch gear, transformers, distribution switchboards, lighting and power panels and points. As this is a secure facility with challenging residents, all the light fittings, power panels and points had to be a specialised vandal-proofed design with security screws. The need for security to be maintained even in event of main grid power outages was solved by the installation of a dual system with fully integrated backup 11KV generators and the construction of an independent High Voltage network for the entire site.

Stowe's project team commenced on site in late 2008, and completed their extensive works, including testing and certification in April 2011. intensive undertaking, with 500 pits for the conduits for electrical, Communications and security systems installed.

was required," said Stowe Australia's Brisbane Manager, Bruce Hooper. "We installed a private High Voltage power supply network, just for boundary of the site. "The project has dual power supplies at 11,000 volts, and there is always backup power. This voltage is reticulated throughout the facility, and there are step down transformers for each

power facility buildings and three 1500kVa transformers on the main prison building. The backup diesel generators are also 11,000 volts located in the X8 central power facility building, and these are always

"We installed a network control system which originates in the central energy site, and reticulates over the communications fibre network. This is a very complicated system, our team of engineers and subcontractor specialist spent many hours writing programs and doing functional PLCs and other systems. "There was a massive amount of coordination involved in this project, and when you are generating power at 11,000 volts, safety is also a very big priority. "We have done installations for other prisons, but not one with a private high voltage network system like this. This is also the first one we have installed with electrical control network systems over a fibre optic backbone."

The level of detail involved in this installation included the need to the fibre optic, which carries all the site's data, security and electrical systems. Stowe needed to install a vast number of media converters from fibre to copper systems to the relays for load shedding or bringing power back onto the system.

As part of the security system, which is a threefold design of non-essential, essential and critical elements, Stowe installed a UPS system for the critical security needs which can hold power in this

Undertaking all these different facets of their works involved a team of up to 110 Stowe electricians and labourers at the peak on site, backed by electrical engineering experts at the Stowe office.

Stowe Australia have always been innovators in the electrical trade, starting a century ago when they replaced Sydney's gaslights with electrical street lighting, they also installed one of the first electrical generating plants at The Corso in Manly.

Today Stowe are leaders in the field of electrical systems design and installation, working across all major construction sectors, including Defence projects, utilising the latest sustainable, energy-efficient technologies. Stowe have just completed works on the new AFL Stadium major project need. at Carrara on the Gold Coast, which features a complete solar panel system designed and installed by Stowe as part of the stadium electrical systems.

Other recent projects include 275 George Street Brisbane, built by WATPAC for Charter Hall. This Five Green Star As Built project won Stowe the Queensland National Electrical Contractors Award in 2010. In 2009, Stowe won the national NECA Award for their work on Skilled Stadium at Robina.

Stowe have recently expanded into the mining and industrial sector, and are currently completing electrical systems for the upgrade of Sunstate Cement, and the first stage of a new coal mine at Canbey Downs in South West Queensland.

Virgin Blue had cause to be extremely glad they chose Stowe as their electrical contractor. After completing the extremely time-limited

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electrical fitout for the new 800-staff Virgin Blue base in Brisbane, the announcement of impending flooding came. Stowe swung into action, taking an inventory of all the electrical fitout, put plans in place, and after the subsequent inundation were swiftly on site disconnecting and repairing the main switchboard and all other affected electrical infrastructure. Virgin Blue Brisbane were back in operation just days after the flood peak.

As Australia's leading privately owned electrical and communications contracting organisation with 1,400 direct employees, and operational centres in Brisbane, Mackay, the Gold Coast and Sunshine Coast, as well as Sydney, regional New South Wales, the ACT and Victoria, Stowe Australia have the capabilities to provide electrical solutions for any

STOWE AUSTRALIA (BRISBANE)

23 Hi-Tech Court 8 Mile Plains QLD 4113 t. 07 3423 6777 f. 07 3423 6799 e. brisbane@stoweaustralia.com.au

HEAD OFFICE (SYDNEY)

t. 02 9848 2111 f. 02 9898 0322 e. stoweaust@stoweaustralia.com.au www.stoweaustralia.com.au

BARGARA'S SKILLS HOLD WATER ACROSS QUEENSLAND

B argara Concrete Tanks are built to last, with a unique joint free construction which gives them a guaranteed effective life of at least half a century. Baulderstone contracted Bargara to cast four tanks in-situ for the Women's Correctional Facility project: two 400KL potable water tanks and two 1.3ML tanks for fire fighting reserve and waste water treatment.

What makes Bargara's tanks special is the formwork, designed and engineered by the company, comprised of curved steel panels, in a range of sizes depending on the design capacity of the resulting tank. The formwork has a large pour capacity, capable of handling single pours up to 120m3, and a unique fast bolt together design which provides a rapid construction process on site, and results in a tank with no joints between the walls and floor or in smaller sizes, within the walls. This means elimination of maintenance for joint sealants.

The WCF tanks are all above ground constructions which were built using 2.5 X 4m panels to produce tanks 25m in diameter. The four All Bargara tanks are built to Australian standards, and inspected and councils they have as repeat clients include Clifton Shire, Cambooya certified by a qualified engineer prior to commissioning. Sizes range from 200,000L to 4ML, with steel reinforced concrete floors, wall and roof. Their green credentials are excellent, with the formwork re-used multiple times and regularly maintained, and the actual tank lifespan longer than the design life of many major projects.

operations providing tanks for domestic use, before expanding into meeting the needs of commercial projects and the local government sector. In recent years, they have constructed tanks for a range of sites including mining projects, industrial projects, commercial projects and statutory authorities from Weipa in the far north-west to Texas, on the Queensland border. Major construction companies they have worked with include Baulderstone, BMD Constructions and John Holland, for whom they recently constructed the fire reserve tank for the Abbotts Point Coal Terminal.

The biggest endorsement of their product is the fact around 99 per cent of their business comes from constructing tanks for local Government town water supplies, in both set up and augmentation projects. Local





Shire, Gympie Regional Council, Bundaberg Regional Council, Wide Bay Water (Hervey Bay), Mirani Shire, Mackay Regional Council, Whitsunday Shire, Cairns Regional Council and Banana Shire.

Recently Bargara have been on site at the MHR Helicopter Base at RAAF Townsville, constructing two 2.5ML concrete cast in-situ Bargara Tanks have been in their trade for 22 years, and began emergency fire reserve tanks. The timeframes for this job have, as at Gatton, been extended by the extraordinary amounts of rain the Far North Queensland region has experienced.

> BARGARA CONCRETE TANKS contact: Kevin Nicholls t. 0409 498 748 e. bctanks@bigpond.com



S ecurity facilities at the new Women's Correctional Centre in South East Queensland need to incorporate the best design and manufacture possible. That is the core of CellCon's mission fabricating, delivering and installing superior products that keep inmates where they belong.

CellCon Pty Ltd was founded by Martin Green in 2006, as a credible alternative to existing suppliers in the secure facilities market. The company's team of Project managers, Designers, Boilermakers and Installers all have extensive experience in all facets of detention installation, and an extremely professional approach to their business.

Growth in the Australian population, coupled with recognition that existing facilities are unable to meet the need for prisoner accommodation into the future, have led to significant investment by Governments in Police, Prison, Justice and other secure facilities such as the Women's Correctional Centre (WCC). CellCon has both the skills and the productive capacity to service these major projects.

For Baulderstone's WCC project, CellCon supplied and installed frames, doors and other associated hardware. The client's design specifications were for a functional product which could perform long-term under the fairly rigorous conditions of the facility, withstanding all manner of punishment. At the same time, the products also needed to have a high quality finish, in keeping with the clean, modern look of the facility. CellCon's successful combination of security, function and aesthetic in the finished product has earned them respect within the industry.

While this project offered a relatively minor role for CellCon, the company were recently successful in a submission to partner with a major construction company in New South Wales to provide all secure frames, doors and windows at the Cessnock Correctional Centre redevelopment. This has seen significant expansion investment in the business, including relocation to a factory with greater fabrication capacity, and an increase in staffing to in excess of 30 employees.

"This is great news for local employment and businesses. We are committed to the continued growth of CellCon and already looking to other major Australian and overseas projects" said Mr Green.

CellCon is now the exclusive agents in Australia for Norix Furniture (www.norix.com), manufacturers of resilient and purpose made furniture for detention and health care facilities, Derby Industries (www.derbyindustries.com) manufacturers of mattresses with patented welded seams and "rip stop" features, blankets and specialised products and Airteq Locks (www.airteqsystems.com), manufacturers of high security detention locking systems. Links to all these web sites can be found at www.cellcon.com.au.

CellCon actively sources products and ideas from overseas markets as part of ongoing innovation in their field, and will be introducing several new products onto the Australian market in 2011.

CELLCON PTY LTD	
t.	07 3375 5455
f.	07 3375 4999
e.	martin@cellcon.com.au
www.cellcon.com.au	

M inimising the harm detained persons, violent offenders and those suffering dangerous mental illnesses can

do to themselves, or those around them is no easy matter. The padding used in the secure spaces for these persons is of critical importance, because when it fails to prevent harm, the results can have serious consequences.

Gold Medal Safety Padding has been used for Seclusion Rooms in the United States for the past 35 years and is the preferred product in all new US facilities. It was introduced to Australia in 1996 by Martin Green and trialled initially in Queensland Police cells.

Previous materials had not performed to the necessary extent, as was seen in Queensland when there was a fatal incident in a police cell that had not long been installed with a previously approved product. Subsequently a Government enquiry was held to determine what needed to change.

Gold Medal Safety Padding ticked all the boxes: the material is resistant to damage, easy to repair and maintain, offers higher fire resistance than comparable products and, above all, protects people from harm exceptionally well. The Government was so impressed with the product's qualities, Gold Medal Safety Padding has been specified by name as the nominated material for seclusion rooms, violent offender cells and observation rooms in Police cells, prisons, mental health facilities and detention centres across Australia.

A SOFT SOLUTION FOR A HARD PROBLEM

In keeping with

the Government specifications,

Baulderstone has used Gold Medal Safety Padding

throughout the new Women's Correctional Facility at Gatton for all rooms and cells where safety of both the inmates and the staff is critical.

"Gold Medal Safety Padding found working with Baulderstone on this project to be extremely easy. We really appreciated the cooperative approach their team has to working with project partners such as ourselves," said Martin Green.

World-wide, Gold Medal Safety Padding has become the specified product for seclusion rooms in countries as far away as Ireland, France, Israel, Abu Dhabi, Sultanate of Oman, Singapore, Malaysia, American Samoa and New Zealand.

When protection of patients, prisoners or detained persons is paramount, Gold Medal Safety Padding is the product to specify - and it comes with the highest endorsements from security-aware Governments around the world.

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PG SYSTEMS SAVE TIME AND SPACE

• one are the days when inmate property was kept in a labelled box in a prison store room until they got released. With space at a premium, and ever-growing numbers of prisoners, keeping track of personal property efficiently requires clever solutions. PG Systems Australia is the Australian sales agent for White Conveyors, who have developed the unique Total Inmate Property Storage (TIP) System. A custom-designed TIP system has been installed at the new correctional centre at the Southern Queensland Correctional Precinct, to ensure smooth management of the wide variety of personal property from clothes to jewellery, which inmates must surrender on entry to be held in secure storage until the date of their release.

The Total Inmate Property Storage system (TIP) is a highly spaceefficient alternative to aisles, racks and storage units, with conveyors which can be either floor mounted or suspended from the ceiling holding the bags which contain each individual prisoner's property. An automated control system allows the staff member on duty to operate the system without having to leave the inmate contact point, as the automated selection equipment finds and delivers the precise property bag which is required.

TIP Systems can be designed for a wide range of requirements, from heavy duty to light lifting. Designer and manufacturer White Conveyor has been in the business since 1946, and these decades of experience

have given the company an extensive knowledge base to work from in knowing how to provide a product which will meet the needs of a wide range of clients. Across the USA, the TIP system has been used extensively in correctional facilities as it delivers budget-conscious results for the prison sector.

White Conveyors began their operations to meet the needs of the dry cleaning and laundry industries, and have now evolved a range of conveyor, storage and sorting systems which includes monorail goods transport and handling systems for retail and warehousing; sophisticated garment management systems for health care facilities and major hospitality establishments; and automated dry cleaning systems.

PG Systems Australia provide custom-designed White Conveyors Systems for dry cleaning, hotels and casinos, hospitals, retail and specialty projects, all engineered to deliver high standards of performance, reliability and longevity.

PG SYSTEMS AUSTRALIA

Unit 3 42 Smith Street Capalaba QLD 4157 t. 07 32456868 www.white-conveyors.com

MAKING A CLEAR AND SECURE VIEW

n manufacturing and supplying the aluminium windows and doors for the Women's Correctional Facility (WCF), NGA Commercial Glazing had to make absolutely sure residents can see out, but not get out. NGA's installation crew had to use a special non-pick sealant and ensure a completely gap-free fit on all the windows throughout over twenty buildings.

NGA also manufactured and installed doors for the general circulation areas, guard areas and non-secure accommodation, including some automatic doors in the visitor and administration centres; and ventilation louvers. Working with a sister company, they also manufactured and installed sunshading.

This was a lengthy and labour intensive project for the company, with up to fifty staff at work in their 2,000m2 manufacturing facility from September 2009 and up to a dozen on site undertaking installation throughout the spring and summer of 2010/11. A fast-response was achieved when the need arose, despite the challenge of a two hour travel time from NGA's facility at Bethania, between Brisbane and the Gold Coast.

NGA's extensive supplier network includes the leading glazing and aluminium fabrication suppliers in the industry, giving them the ability to deliver products meeting the specific needs of this security-conscious project and the challenging architecture involved. Glass types used included Float, Safety and Security glasses at the WCF. All products were required to have the highest quality finish, and meet the applicable Australian Standards.



Other current major projects include fabricating the curtain wall for a 20 storey building on Albert Street in Brisbane for Hutchinsons, using high performance glass manufactured in the USA; manufacturing and installing all windows, external doors and louvres for the Salacia Waters project near Runaway Bay; and manufacturing and installing windows, external doors and architectural ventilation louvres for Baulderstone's Robina Hospital project, which features the extensive use of low-e double glazed high performance glass.

In business since 1997, NGA's capabilities are extensive, with CNC machinery and digital shop drawing technology providing unlimited abilities to design and manufacture shop front, high-rise, curtain wall and residential door and window styles. They have worked on projects throughout Queensland, Northern New South Wales and Sydney, including hospitals, major residential developments, Defence projects, corporate headquarters, retail developments, universities, and local government projects.

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WHEN IDENTIFICATION IS CRUCIAL - CALL ID WAREHOUSE

n a place like the Women's Correctional Facility at Gatton, it is crucial Australian Shipping & Transport Innovation in Security Award 2009 for for security to keep track of 'who's who in the zoo'. Australia's leading their IDW-implemented PassagePoint Visitor Management solution. expert supplier of security identification systems, ID Warehouse, was called in to provide the facility with a unique Visitor Management System. Other organisations with high-level security and identification needs

ID Warehouse (IDW) offers clients a comprehensive product portfolio including identification card production systems, electronic visitor management and access control cards. They also provide ID card printer consumables for all printer brands and the widest range of identification security accessories in the market.

Three IDW staff worked on the project, including design and procurement, and the installation of the custom-designed PassagePoint Visitor Management System on site was undertaken over a week.

IDW employs 35 staff, and services a wide range of clients nationally, across both the private enterprise and government sectors. Since commencing operations in 1994, IDW have pioneered the latest methods and directions within the security identification industry, and have been instrumental in setting the standards for the field.

ID Warehouse is a member of ASIAL and ASIS, the leading associations in the security industry, and have been recognised for the excellence of their security identification solutions with various industry awards, including the ASIAL Best New Product Award. They were also instrumental in assisting Sydney Ports Corporation with winning the





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which have been assisted by IDW include the SES, QANTAS, Commonwealth Bank, AMP, St George Bank, Westpac, Sydney Airport, the Australian tax Office, and ANZ Stadium.

"ID Warehouse provides unrivalled customer service by truly understanding our customers' unique identification needs. With a passion for providing high quality, innovative products, and an in-depth understanding of end-use applications, IDW is the trusted identification expert," said IDW spokesman, John Ascoli.

"We take pride in our ability to administer and execute large and small projects with the highest levels of expertise and professionalism. ID Warehouse uses its fully resourced infrastructure to provide a 100%secure identification solutions, adhering to strict quality standards. Our reputation in the industry has been gained through our customerservice focus and to ability deliver expert advice and high quality products that meet client needs and deadlines."

ID WAREHOUSE 5/16 Lexington Drive Bella Vista NSW 2153 t. 1300 301 748

f. 1300 301 749 e. sales@idwarehouse.com.au www.idwarehouse.com.au