

# FUTURE HEALTH WITH FLEXIBLE SPACES

Improving rural and remote community health services is a key objective for federal and state governments, with the Port Macquarie Base Hospital Expansion project part of this initiative.

MAIN CONSTRUCTION COMPANY : Watpac  
CONSTRUCTION VALUE : \$65 Million  
COMPLETION DATE : Mid 2014  
ARCHITECT : Hassell  
STRUCTURAL AND CIVIL ENGINEER : Enstruct  
MECHANICAL ENGINEER: Umow Lai



Jointly funded by the Australian and NSW Governments, the expansion of the existing hospital represents a strategic capital investment in health infrastructure, and provides a contemporary health care facility future-proofed for the regions' forecast growth.

Health Infrastructure Chief Executive Sam Sangster, commented the PMBH Expansion is in alignment with national infrastructure priorities for public hospitals in rural areas, and supports health gains already made in this region through implementation of the first NSW Rural Health Plan. "The \$110-million Port Macquarie Base Hospital expansion will provide the Port Macquarie-

Hastings community with an expanded range of quality health services, increased capacity in priority areas and new ways in which services are delivered to best meet the changing and unique health care needs of the community".

"The design and planning of large hospital expansions is always a delicate task with a number of competing demands. We need to make maximum use of the available space and tie in and relate to existing building, while still minimising the impact on existing hospital operations during construction. The design also has to take into consideration and allow for growth, and potential changes in service demands", Sam Sangster commented. The expansion project brings clinical priorities

to the fore, and includes an extra 70 overnight acute in-patient beds, a larger emergency department, improved medical and surgical inpatient services, additional surgical theatres with state of the art equipment, cardiac services, and other support services.

The new four-storey clinical service building is located at the western end of the site, and therefore permitted minimal disturbance to the main hospital. In total, there will be an additional 12,000m<sup>2</sup> of clinical floor space to the existing hospital footprint, currently at 18,000m<sup>2</sup>. Level one includes a 24-bed critical care unit and cardiac service area, a new bulk store at 270m<sup>2</sup>, staff support areas, and 'cold shell' spaces allowing for unspecified future needs to be accommodated for.

Levels two and three offer new emergency areas, seven operating theatres and a number of flexible spaces that can be catered for needs as they evolve, with the mechanical plant on level four.

Healthier buildings can assist in the health of patients, and to such an end, the PMBH sustainable building objectives were in alignment to the best outcome for a large buildings sustainable operation. "The priority for all health projects is to maximise the return for clinical health benefits and provide built form outcomes that are energy and water smart. Hospitals are used 24 hours a day 7 days a week, and efficient operation is a basic premise of Health Infrastructure's design guidelines," Sam Sangster commented. Health

Infrastructure has managed the delivery of the project, including project planning, design, construction and facility commissioning.

With a project of this scale, Health Infrastructure were aware of the huge need for transparent and ongoing communication between all parties to ensure the hospital's day to day operations are not impacted.

"This collaboration has been reflected in all stages of the projects planning including the early delivery of additional car parks at the eastern end of the site in order to free up the western end for construction; daily coordination of works at the interface between the existing hospital and the new

build, and in the detailed planning required to commission and handover the new building."

With completion of construction expected in mid 2014, the PMBH will soon be offering the region top quality health services in an equally healthy building. Following construction completion there will be an eight week commissioning period before the hospital is fully operational.

**For more information contact Health Infrastructure, Level 6, 77 Pacific Highway, North Sydney, NSW 2060, phone 02 9978 5402, fax 02 8904 1377, email [info@hinfra.health.nsw.gov.au](mailto:info@hinfra.health.nsw.gov.au), website [www.hinfra.health.nsw.gov.au](http://www.hinfra.health.nsw.gov.au)**

## A TOTALLY CONCRETE SOLUTION

Contributing to new development in their local region, Total Precast Systems P/L have been able to demonstrate a level of expertise and commitment to getting a project done right with the new Port Macquarie Base Hospital Expansion Project.

Involved in all the pre-cast concrete elements, specifically the structural façade, Total Precast Systems have played a key role in finalizing design briefs and skillfully managing the installation of the 230 façade panels.

The Port Macquarie Base Hospital Expansion Project is a jointly funded Health Services Infrastructure investment with both Federal and State governments providing in total over \$100 million.

With the work now nearing completion, Total Precast Systems role extended for a period of around 11 months, a slightly longer than expected time frame however can often be the case for a complex project and inclement weather.

The pre-cast panels wrap across the buildings elevations, while the design brief also included the fabrication of three aboriginal art panels that form part of the entry to the ambulance bay. Following a design brief from the architects, these large art panels demonstrate furthermore Total Precast Systems skills in concrete.

One of the challenges for Total Precast Systems on this project was the installation. With the panels being of an immense height, it took a team of dedicated professionals to detail up the connections for the installation, and to carry it out safely.

The company's director Andrew Lawson commented, 'It was a particularly complex design, which will look amazing when it's complete. The challenge on this project wasn't in the fabrication, but the panels were quite difficult to install.

"The difficulty was because of the size, and the height, and the nature of stacking three

panels on top of each other with an elevation of up to 20 odd metres is quite complex.'

The design of the fire stairs is a distinctive element to the hospitals construction, and it involved a separate installation system. As Andrew comments, 'The fire stairs are quite unique. Most installations with panels can be done from the inside of the building, but these fire stairs had to be done from external elevated work platforms.'

A company that specializes in customized structural and architectural pre-cast concrete elements, Total Precast Systems offers their services for a range of commercial and industrial building projects. In operation for only two years, Total Precast Systems has managed to fulfill a large number of briefs both in the Northern Rivers region and across the Eastern states.

They can provide a complete and integrated service, from finalizing design briefs, marking up of shop drawings, through to the manufacture, transport and installation of pre-cast concrete elements.

The companies staff numbers around 20, with all staff having years of experience prior to the formation of the company. Total Precast Systems are able to fabricate and install the whole range of precast concrete items, both external and internal elements.

There are a number of new projects in the pipeline for this company, focusing on the Northern NSW and into Queensland states. One large project includes a twenty eight storey high rise building on the gold coast, which will again be pre-cast façade panels. In fact, that job numbers at over 500 panels for fabrication and installation. Another project closer to home job is the Armidale Court House.

*For more information contact Total Precast Systems P/L, 30 Seelems Road, Coraki NSW 2471, phone 0415 833 401, email andrew.tps@kilcon.net.au*



# MAKING SPACE FOR INCREASED PATIENT MOBILITY AND SAFE PATIENT HANDLING

For over 60 years, ArjoHuntleigh (Getinge Group), a medical technology company centered on mobility solutions, has assisted architects, nursing staff and experts on safe patient handling in their efforts to formulate guidelines for the construction and refurbishing of health care facilities. The company's CEO Harald Stock outlines "We are acutely aware that a care facility is not only a place where efficient treatment and care is delivered, but that it may also be a location where patients and residents must be able to feel at home. It is also the place where caregivers are exposed to potential hazardous lifting, transferring and repositioning workloads."

ArjoHuntleigh recently worked alongside NSW Health Infrastructure and Mid North Coast Local Health District (MNCLHD) to assist in the facility design and supply of mobility medical equipment for the Port Macquarie Base Hospital Expansion Project. Medical equipment related to mobility was supplied in separate contracts to both the builders and to Health Infrastructure for the hospital expansion. Health Infrastructure contracted ArjoHuntleigh for the wide range supply of patient handling equipment including mobility lifters, slings; bathing and hygiene equipment, including a hydrotherapy bath in pediatrics; 73 medical beds namely 'the Enterprise 5000X One-Touch', two bariatric beds, over-bed tables; therapeutic support systems along with support frames and other general accessories. The builder's contract included the supply and install of 28 overhead ceiling tracks for the intensive care unit Maxi Sky 2, a recent product innovation. The supply of equipment is only one piece of working collaboratively with facilities.

"We worked with MNCLHD to come up with a solution that is going to move the facility forward to meet future requirements, and reduce their risk of manual handling, providing care staff the equipment to assist with ongoing over bed transfers and hygiene products. It is a holistic approach with the objective of providing the best care, and a focus on optimizing safe patient handling – both in-bed and out-of-bed", stated Paul Currey, NSW Business Development Project Manager at ArjoHuntleigh. ArjoHuntleigh's aim is to provide optimised care, which prioritises the quality of life while promoting

the highest achievable level of independence and mobility. At the same time, these goals must be achieved without compromising the caregivers' health.

Working from the early design architectural phase, ArjoHuntleigh's team consult and guide the design of the functional space, enabling best location of equipment and greatest mobility in the spaces for patient and carer. ArjoHuntleigh's Positive Eight™ philosophy and Architects Planners Guide (4th edition, 2014) are patent, information rich resources for development and redevelopment projects. Sufficient space, proper aids and the correct working techniques are the three decisive prerequisites that must be in place to stimulate patient's mobility and the key to the entire process of care. The principle is most easily demonstrated with two circles of the Positive Eight™ philosophy, which depict a set of eight steps to assist facilities in achieving a higher quality of care, as shown in the picture.

Post-installation, ArjoHuntleigh commits to ongoing support, providing training and education to staff and the facility, and preventative maintenance and service to ensure equipment is kept in the optimal operating condition. "The key to success is installing state-of-the-art equipment matched to the facilities requirements, while also making it easy to use by care staff, to drive compliance achieving the best patient outcomes, and a flow on effect to reduce manual handling injuries. The medical beds in conjunction with pressure area care mattresses are an exceptionally good platform for pressure injury reduction and also general comfort while the patient is in bed", commented Paul Currey.

ArjoHuntleigh have also worked recently on the following developments in NSW including the RPA Lifehouse at Camperdown, Rehabilitation Centre in Sydney, Mona Vale Hospital, Moruya Sub-Acute, Tamworth Base Hospital, along with a number of group homes and aged care across Australia including the major development Fiona Stanley Hospital Perth, Western Australia. Patients and healthcare facilities have different problems, different backgrounds, and different expectations for the future; ArjoHuntleigh aims to work closely to overcome the challenges of

the future, and reducing the incidence of preventable illnesses.

ArjoHuntleigh is a part of the Getinge Group, a leading global provider of equipment and systems that contribute to quality enhancement and cost efficiency within healthcare and life sciences. They operate under the three brands of ArjoHuntleigh, Getinge and Maquet. ArjoHuntleigh focuses on patient transfer aids, bathing and hygiene solutions, VTE Prevention, medical beds, therapeutic surfaces, bariatric and diagnostics. They also provide strategic advice for care facilities, rental offerings, technical service and equipment and clinical assessments.

## ARJOHUNTLEIGH GETINGE GROUP

For more information ArjoHuntleigh Australia – Getinge Group, phone 1800 072 040, email [projectsau@arjohuntleigh.com](mailto:projectsau@arjohuntleigh.com), website [www.arjohuntleigh.com.au](http://www.arjohuntleigh.com.au), or request a copy of the ArjoHuntleigh Architects Guidebook.





NORTH COAST COMMERCIAL  
**DOORS**

## OPENING DOORS FOR HEALTH

Entrances and exits are moments in architecture that have both practical requirements but similarly an opportunity for dramatic and aesthetic interests. Specialists in commercial door design and installation, North Coast Commercial Doors have clocked up a number of years of experience in arriving at site and consulting on bespoke needs of client and project, then fabricating the required items for a what is generally a well satisfied client.

This company's history with Port Macquarie Base Hospital dates back to the installation of the original doors over twenty years ago.

A testament to their commitment to projects and service to clients, North Coast Commercial Doors have remained as both the maintenance contractor, but furthermore for this project, have worked with Facilities Management to co-design a new anti-deflection metal doorframe. This design is now being fabricated and likely to be used at a number of other hospitals in the NSW north-west region. For Port Macquarie Hospital, North Coast Commercial Doors manufactured and installed over 500 doors ranging from fire- doors, solid-core, bi-fold, doors with

vision panel inserts along with all hardware and acoustic sealing. The enthusiasm of North Coast Commercial Doors staff to share knowledge of possibilities and best ideas due to their years of experience is what sets this company apart and keeps clients returning.

North Coast Commercial Doors have been in business for 13 years as a manufacturer and over 28 years as an installation company. They currently employ around 17 staff members, and with their workshop at Wauchope, they have a range of state of the art equipment that facilitates high capacity work loads.

Current projects cover the north west NSW region, including Tamworth Hospital, Les Christian Nursing Home, and Coffs Harbour Justice Precinct as well as fire-service inspection contract with Mid North Coast Health.

*For more information contact North Coast Commercial Doors, 10 Production Drive, Wauchope NSW 2446, phone 02 6585 3332, fax 02 6585 3302, email sales@ncdoors.com.au, website www.ncdoors.com.au*



## ELITE ENGINEERING

The integration of the old and the new is a junction that can offer particular challenges in a design sense and also for technical procedures. For the Port Macquarie Base Hospital upgrade, Wood & Grieve Engineers were contracted as the electrical, ICT and vertical transportation consultants, and through the use of BIM were able to efficiently handle the range of challenges that occur in upgrade projects.

The scope of work for Wood & Grieve Engineers covered significant infrastructure works including the undergrounding of an existing 33KV overhead power line and provision of a new substation, main switchboard, standby generator and uninterruptible power supply. Fully documented in Revit, the project was detailed to a precision that could reveal any clash detection and issues of co-ordination between services old and new, and was particularly beneficial in designing services in areas that have limited ceiling void spaces.

A key component then of this job was the integration of the electrical and ICT systems installed in the new building with the existing systems elsewhere on site. A digital integration was required in all operating

rooms throughout the hospital, while integrated IP-based telephony, CCTV and intercom systems were installed in the new building.

These digital challenges were met by working closely with the suppliers of both the new and existing systems. Furthermore, WGE worked in close consultation with the local health department to ensure their operational requirements were met within budgetary restraints.

Wood & Grieve Engineers specialise in a number of engineering disciplines, including Acoustic, Civil, Electrical, Mechanical, Structural to name a few. Their experience crosses commercial and education through to industrial sectors and urban development, with over 400 employees placed in offices across Australia. Current other hospital projects from WGE Sydney office include Parkes and Forbes Hospitals, Dubbo Base Hospital, Royal Prince Alfred Hospital, and Hospital for Specialist Surgery, Sydney.

*For more information contact Wood & Grieve Engineers, L6, Building B, 207 Pacific Highway, St Leonards, New South Wales, 2065, phone 02 8484 7000, website www.wge.com.au*



## MAQUET BRINGS STATE-OF-THE-ART MEDICAL EQUIPMENT TO PORT MACQUARIE

State-of-the-art medical equipment and technologies are facets to a new build like Port Macquarie Base Hospital that offer benefits for both staff and patients. The team bringing their expertise to the new hospital for the Northern Rivers regions is MAQUET, a company that has been providing solutions to clinical care in Australia for over 15 years, and internationally for over 175 years.

With headquarters in Germany, MAQUET are a global company that design and manufacture a wide range of medical equipment, including operating lights, pendants, operating tables and theatre room machinery. For the Port Macquarie Base Hospital, MAQUET worked in consultation with key clinical personnel regarding a range of design decisions, ranging from orientation of the theatres, layout of equipment and choices of pendant light and monitor configuration. Integration of the equipment along with post-installation support is all part of MAQUET's service.

Close client consultation is an avenue of delivery that MAQUET pursue with vigour. On this project, MAQUET and clinical staff

remained in constant contact throughout the 18 months of its delivery, ensuring the end product was exactly suited to the clients requirements. As Project Manager Baden Leo comments, "MAQUET have a vast range of products compared to our competitors with what we can offer. We like to pride ourselves on being a solution-provider as well as a complete turn-key solution medical company that can offer a one-stop shop. And that's not only on a local level but also globally, because we have the backing of our relevant factories as well as our head office based in Germany."

The next major projects for MAQUET include Wollongong Hospital, along with installation of theatres and equipment in Hornsby Hospital and in hospitals in Rockhampton and Lismore.

For more information contact MAQUET Australia Pty Ltd, Australia Head Office, Level 2, 4 Talavera Road, Macquarie Park NSW 2113, Customer Service number 1800 605 824, fax 07 3339 3910, email sales.au@maquet.com, website www.maquet.com



## COST SAVING CLADDING SOLUTIONS

Specialising in external cladding, Stane Industries continues to evolve as a leading sub-contractor for façade construction on a range of commercial and industrial building projects. Now with a history of over 20 years, this Sydney based company has a number of high-end clients that testify to professionalism and dedication in their delivery of top quality work.

For the Port Macquarie Base Hospital, Stane Industries were contracted to design, fabricate and install the external skin of the building, comprised of pre-fabricated façade trusses and 4mm composite panels. Employing around 20 people in the company as a whole, around five employees were part of this project designing and fabricating the items in their workshop in Sydney.

A unique aspect to this build was a full installation without scaffolding. With the size of the panel modules being at 2.7 x 7.2 metres long, Stane Industries set themselves a challenge of completing an installation with larger panels but requiring no scaffolding and less units. With



building challenges successfully achieved, it was also a win for the builders budget. The most important aspect to this challenge however was involvement of all parties at the early stage of design.

As Project Manager Claus Maarschalk states, "I do think that in these kind of scenarios we can offer a builder good cost savings and faster installation if they get us involved early in the design stage. If they leave it to later, then its harder for us to give them cost-savings - they might have already put full scaffolding up, which is a huge cost. If we are involved in the earlier stages, then we can offer better buildability for the construction requirements."

Most recent other external cladding from Stane Industries includes The Chris O'Brien Lifehouse at RPA, Wagga Wagga Hospital, and Charles Perkins Hospital.

For more information contact Stane Industries (Aust), Unit 3, 13-15 Governor Macquarie Drive, Chipping Norton NSW 2170, phone 02 9723 6673, email projects@stane.com.au, website www.stane.com.au



Port Macquarie Base Hospital, NSW



## STRUCTURAL STEEL SPECIALISTS

For the Port Macquarie Base Hospital Expansion project, the use of steel for both structure and creating architectural features is integral to the new face of the hospital building. Tackling this large scale project is Belmore Engineering, the structural steel specialists who completed the fabrication and finishes of all steel members, defining the hospital as a landmark building for the region.

With the amount of material coming to around 200 tonnes, Belmore Engineering fabricated steel items ranging from block wall stiffener posts through to architecturally featured awnings and stairs. Hot dipped galvanised steel was utilised throughout for structural members, while the entry canopies and stairways required a 3 coat finished paint system that was applied in house, and off site. Unique to this project was the fabrication of larger format RHS, including members of a size up to 450 x 250mm.

Belmore Engineering has been in operation since 2000, and has specialised in structural steel fabrication and erection since 2004. With employees numbering around 45, they have established themselves as leading structural steel fabricators with their focus on handling large

scale projects across Australia, in industries such as retail, health and mining. This is facilitated by their 4000 square metre workshop at Tamworth, as well as their professionalism in keeping up to date with new technologies and equipment.

One of Belmore Engineering's biggest investments in technology has been the Voortman CNC Plasma Beamline machine. Providing Belmore Engineering with a competitive edge, this piece of machinery uses a full 8 axis movement to allow operations on all four sides of a steel member.

Currently, Belmore Engineering are structural steel fabricators for numerous large scale projects for clients including Mainbrace, Richard Crookes Constructions, Hansen Yuncken, ABI Group and Watpac.

For more information contact Belmore Engineering, 47 Showground Road, Tamworth, NSW 2340, phone 02 6765 9311, email [info@belmoreengineering.com.au](mailto:info@belmoreengineering.com.au), website [www.belmoreengineering.com.au](http://www.belmoreengineering.com.au)

