

# DANDENONG HOSPITAL MENTAL HEALTH FACILITY

## A WHOLISTIC APPROACH TO BUILDING MENTAL HEALTH

Construction of the new Dandenong Hospital Mental Health Facility has been a balancing act. Kane Constructions had to meet the stringent safety and security requirements of a mental health facility, while also delivering a result which has aesthetic qualities conducive to the recovery of equilibrium.

The project's first stage, a new 50 bed Adult Acute Mental Health Facility, had to be constructed on a tight twelve-month timeframe and delivered defect-free, in order to prevent the need for tradesmen to enter the patient environment.

Special construction methods and fittings were used to minimise the potential risks for clients in the facility. These included anti-ligature hinges, door hardware and tapware. Tamper proof fixings were also used throughout the facility, and all the light fittings and air conditioning registers installed throughout are also tamper-proof designs.

"There was a balance between making the facility safe for clients and avoiding an 'institutional feel' to the facility," said Kane Constructions project manager, Gus Geuna.

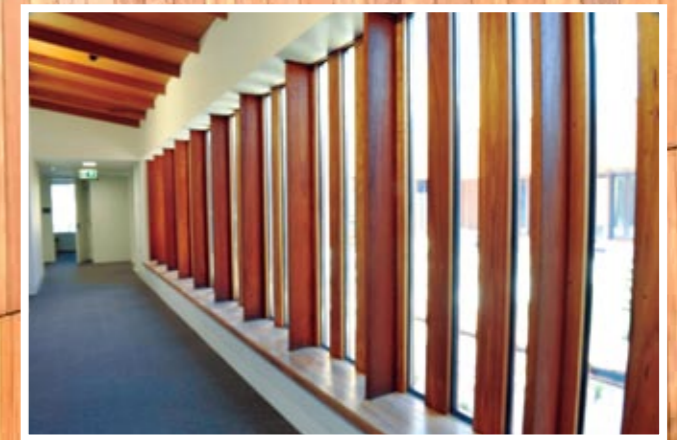
"There has been extensive use of AFS certified Blackbutt timber, fabric panelling and carpet internally, and synthetic grass, coloured concrete and advanced planting externally, which all contribute to giving the facility a very comfortable and homely feel to assist the users to recuperate."

"For the safety of both the clients and service staff an extensive network of catwalks has been constructed, which provides access to

all air conditioning equipment, cisterns and thermostatic mixing valves from above, rather than having tradesmen entering the patient spaces during servicing and maintenance visits."

The Kane Constructions Environmental Management System is certified to AS/NZS ISO 14001. The company is a member of the Green Building Council of Australia (GBCA), with a number of GBCA Accredited Professionals on staff, including Dandenong Hospital Mental Health Redevelopment project manager, Gus Geuna.

On this project, environmental sustainability initiatives included the use of double glazing and low e-glass throughout to minimise heat gain/loss through the glazing. Blinds are located in the interstitial space between the glazing panels, which both protects the blinds from damage, and removes the ligature risk typically associated with blinds in mental health facilities. An energy efficient in-slab heating systems will provide a very steady form of heating, and also a comfortable warmth underfoot for the clients.



**MAIN CONSTRUCTION COMPANY :** Kane Constructions  
**CLIENT :** Department of Human Services / Southern Health  
**COMPLETION :** September 2012  
**PROJECT END VALUE :** \$69 Million  
**ARCHITECT :** Bates Smart Irwin Alsop  
**STRUCTURAL ENGINEER :** Irwinconsult  
**QUANTITY SURVEYOR :** Davis Langdon

Since 1995, a number of international projects have been undertaken in China, Pakistan, Malaysia and the Pacific including Tonga, Western Samoa, the Solomon Islands and PNG.

Kane commenced operations in Melbourne in 1973 and currently employs 286 staff across offices located in Melbourne, Sydney and Brisbane.

The company operates across all sectors of the industry including health, defence, education, retail, residential, commercial and industrial.

Kane undertakes projects ranging in value from \$<1 million up to \$100 million utilising a variety of contract types such as lump sum, design & construction, construction management and managing contractor.

Current projects include the RACV Torquay Resort (\$95 million), Sunshine Hospital (\$56 million), Manningham Civic Precinct (\$32 million) and the 6-star Green Star Victoria University Construction Futures Project (\$35 million).

Kane has recently been awarded three contracts by the Department of Human Services to construct 500 affordable housing units with a total value of \$130 million.

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# TWENTY YEARS OF FIRST CLASS HVAC SERVICES

Two decades of excellence in implementing mechanical and air conditioning services gives Conte Mechanical and Electrical Services the skills to design and deliver brilliant solutions for projects like the Dandenong Hospital Mental Health Facility. Their team added extra value to the HVAC works for the facility, with leading edge energy efficient ideas ensuring maximum air quality and occupant comfort.

Conte's team of engineers took the original specifications for separate heat exchangers and fan coil units an extra step, by combining them into one compact heat recovery unit. The heat recovery from the exhaust air of the ensuite was originally designed with a separate heat exchanger and a roof mounted exhaust fan to operate one side of the heat exchanger while the recovered heated/cooled air from the heat exchanger passed through the inlet of a separate fan coil unit; thus pre-conditioning the air and saving energy costs. The downside to this system was the requirement for separate fan coil units, heat exchangers, exhaust fans and multiple dampers and controls.

"Our Engineers proposed, and had approved, a 'more efficient' way of doing the same thing by combining the heat exchange unit and the fan coil unit into one compact unit, doing the job of both separate systems. Less costs are involved obviously, and it is a more efficient system, with less controls required for the running of each unit," said Conte Services Spokesperson Adrian Conte.

"The bed room systems operate on full fresh air handling units with heat reclaim. The return air from the spaces is taken through a HEX where the energy (heat/cool) is transferred to the incoming fresh air being delivered to the space. This provides high indoor air quality and no air is returned or reused.

"The heat recovery units supplied by Aira were compact and a perfect fit for the limited ceiling space available. Being a Mental Health facility, all maintenance and service to equipment must be available without entering the occupied space. This was achieved with a maze of access walkways throughout the ceiling space to all equipment; which included all filter access, fans, heat recovery fans coil units, VAV boxes, heating coils, hydronic heat/cool floor manifolds, pipe reticulation, controls and switch boards."

The air conditioning, heating, ventilation and domestic hot water flow systems utilize the existing steam generator plant. By connecting these new systems to the plant room which serves the whole facility, there was no need to install new boilers. Conte also supplied and installed highly efficient hydronic floor slab heating and cooling for the primary source of air conditioning the patient's bedrooms. The hydronic pipe reticulation passes through heat exchangers connected to the heating and chilled water system. The system also has the benefit of producing less air movement within the spaces, an added benefit in terms of air quality and occupant comfort.

Before Conte's team of installers and experienced subcontractors commenced work on site, their team of engineers and draftsmen spent four months getting every detail right. This included sourcing the



most efficient equipment to meet all the aspects of the scope of works; calculation of fans and required air flow; liaising with the contractor and consultant team and ensuring all variations were approved; procuring all the equipment, units and controls; and an extensive shop drawing process as the design and specifications evolved.

Onsite work commenced in June 2010, and continued for seven months. Currently, Conte are in the process of engineering design, shop drawings and procurement for Stage 2 of the Mental Health Facility, and expect to be onsite installing systems for the three new buildings in September 2011.

In their twenty years of delivering results for projects, Conte has been committed to the highest standards of Occupational Health and Safety. As the access and work areas for installation for all the facility systems were in a maze of access walkways above the ceilings, Conte produced Safe Work Method Statements specific to the site.

"Our company has worked consistently to administer an OH&S System that is not only adhering to all required regulations but also specifically designed for the work and workers involved. We have never adopted the philosophy that we will put an OH&S Policy in place and sit it on a shelf to collect dust. Our management procedures and policies are constantly reviewed, adjusted and managed to keep up and comply with all changes to legislation. We are proud of what we have achieved and never shy away or ignore our responsibilities, and we expect our staff to adopt the same approach," said Adrian Conte.

Conte Mechanical & Electrical Services is a wholly Australian owned and operated company, established in 1991. Over the last 20 years, they have provided practical and innovative solutions for a wide range of built environments, including medical, pharmaceutical, performing arts, education and IT, retail and commercial property. The company's diverse range of services allows them to provide clients with the full spectrum of elements required to identify and meet specific needs. Other current projects include Manningham Civic Precinct, Austin Hospital, Latrobe University, Noble Park Pool, Collingwood Leisure Centre and Craigieburn Library.

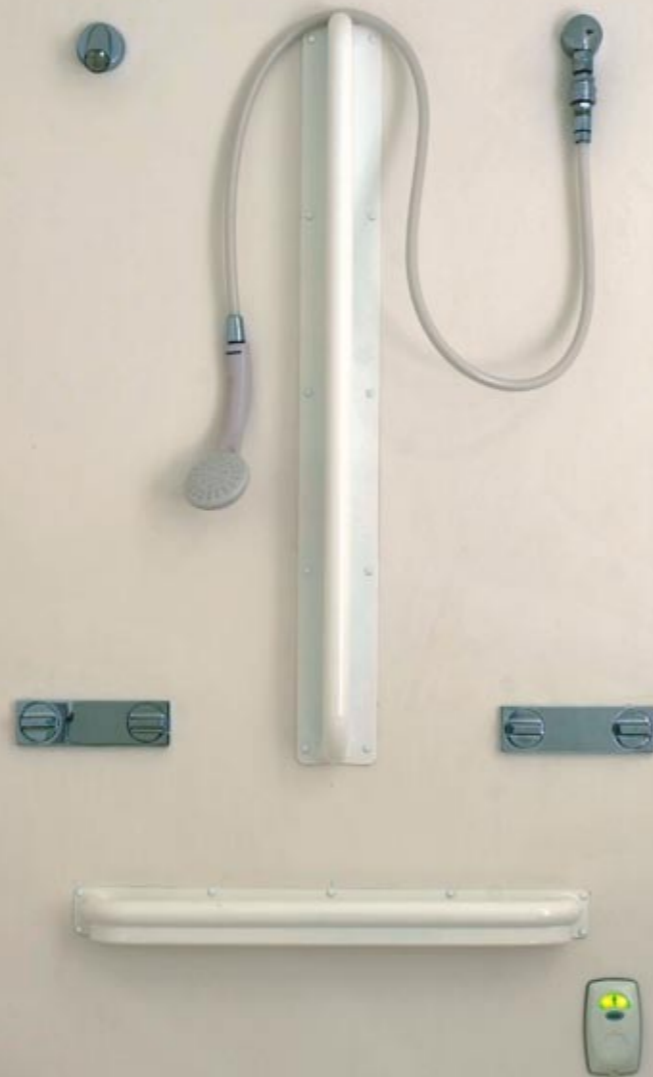
From design through to manufacture, installation and maintenance services, Conte bring experience and technical ability to every project they undertake, whether the mechanical services budget is \$10,000 or \$10 million. Their team provides professional tendering; innovative design and energy sustainable solutions; professionally qualified engineering; total project management ensuring delivery deadlines; drawings produced using cutting edge technology; and professional, qualified and experienced site personnel.

With their comprehensive construction industry experience, and dedication to quality results, Conte has earned an excellent reputation for providing innovative, efficient and reliable mechanical services and air conditioning systems.

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## REACH FOR SAFETY RAILS



Safety Rails Australia (SRA) design and manufacture bathroom equipment which not only prevents accidents, their products can also prevent intentional harm. SRA custom made all the grab rails for the new Mental Health Facility at Dandenong Hospital at their Campbellfield factory, using Type 304 Stainless steel with a powder coated finish to create a product which is an aesthetically pleasing and effective grab rail, and most importantly, offers no hanging point. The rails have been designed to AS1428.2011 and were put through A.S Weight loading tests to ensure they would meet the stringent safety requirements of the facility.

The grab rails have been installed by SRA subcontractors Harkaway Constructions throughout the new building constructed as stage one, and will also be installed by Harkaway throughout the three buildings of stage two. By the conclusion of stage two, SRA will have supplied over 100 of their safety rails to the facility. During the initial stages of the design and manufacture process, SRA worked closely with the project architects to achieve a satisfying outcome both for the health service and the end users.

The Anti-Ligature product range has been used on various mental health projects over the past four years, and can be used in any secure environment where self-harm is a risk. Other projects SRA are currently working on include North Park Hospital in

Melbourne; Pine Rivers in Queensland; and Warners Bay Hospital in New South Wales.

SRA has twenty years of experience in designing, manufacturing and supplying specialist bathroom products ranging from standard sanitary hardware through to specialist disability bathroom products for both public sector and private sector projects Australia-wide. The company's design talents in-house and the highly skilled tradesmen in the company factory enable SRA to custom make superb quality, highly practical products for a broad range of settings and specific needs.

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## DELIVERING EXACT AND ESSENTIAL DATA

There are few survey tasks more sensitive than gathering data in a working hospital setting while meeting the strict time frames of a major commercial construction project like the Dandenong Hospital Mental Health facility. It is not unfamiliar territory for SOS Surveying, who have provided their high quality, cost-effective and efficient surveying services to many recent major Victorian Health Care projects.

SOS Surveying was involved throughout the whole project from the early stages gathering survey data for design purposes, established survey control, through to site set out and as-constructed surveys. Field survey data was collected, and survey plans drafted and issued in digital format, these included Feature and Level Surveys plan, and as-built plans. PDF and digital plans from the architect and engineer were incorporated into these, and Quality Assurance data was collected to ensure the highest standards of service to the clients.

SOS Surveying use state of the art survey instrumentation, including fully robotic total stations and the latest AutoCAD software. For this project, the tools included Leica DNA Digital Level, Trimble S6 Robotic Total Station, Leica TS15 Robotic Total Station, Terramodel Software and Trimble R8 GNSS GPS.

Other recent health care projects have included Cancer Centre (Parkville), Northpark Private Hospital Re-development (Bundoora)

and the Monash Hospital (Clayton). SOS Surveying are currently providing their highly accurate services for the next stage of the Dandenong Hospital Mental Health Facility, also the Northpark Private Hospital Re-development and Monash Hospital, and also Melbourne Star Apartment, Sunday Apartments and Regional Rail Link.

SOS Surveying is an efficient and affordable solution for any major project's surveying needs. They can provide services throughout the whole project, including surveys prior to design for planning and architectural design, earthworks, road set-out, piling, construction set-out, as-built survey, asset recording, title subdivision and certification. The company directors have extensive experience on some of the world's largest construction and mining projects both in Australia and the Middle East, and have a solid team of well trained and experienced staff, all dedicated to providing the highest quality results.

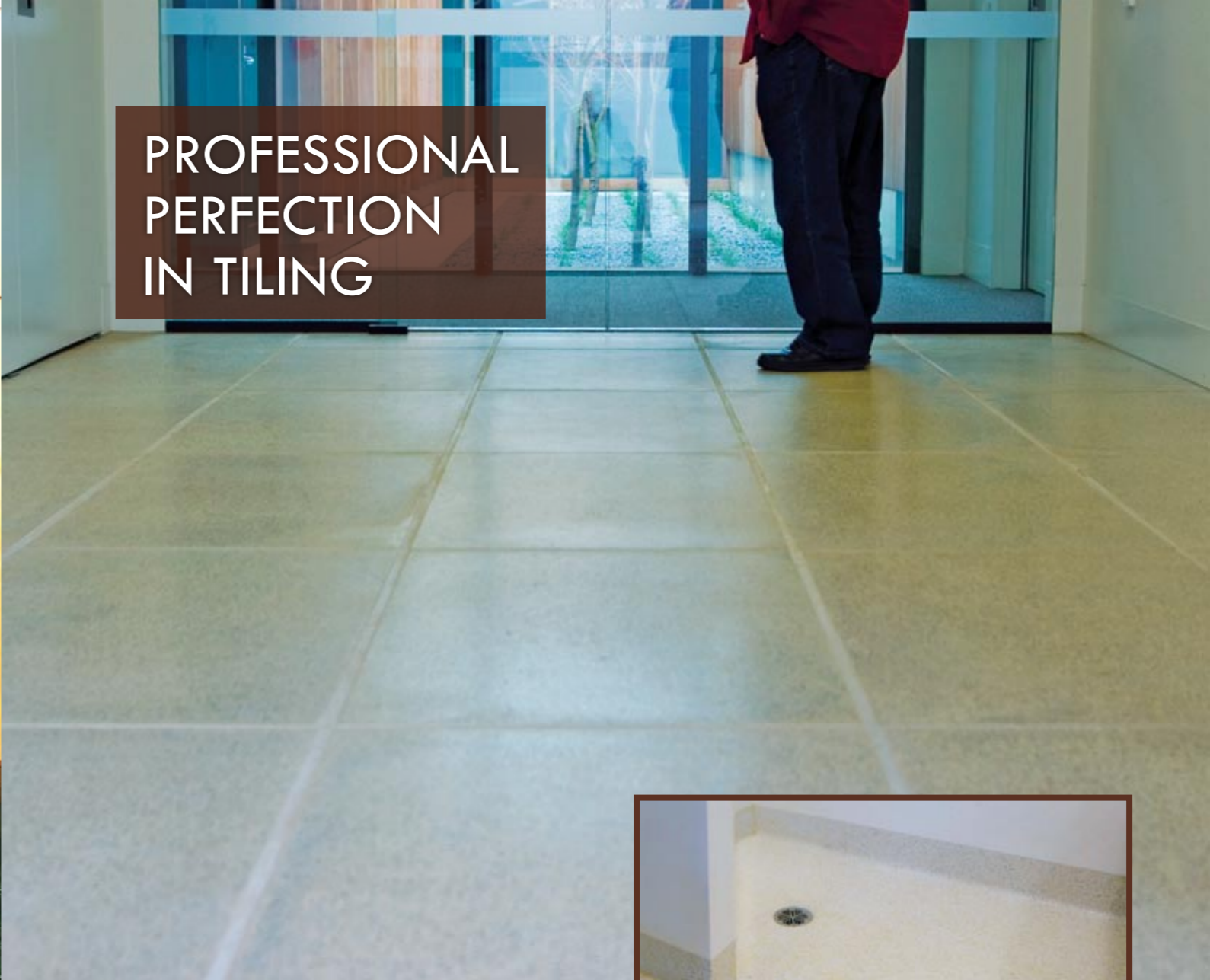
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Dandenong Hospital Mental Health Facility, VIC

## PROFESSIONAL PERFECTION IN TILING



As a facility for the care and treatment of some of the most vulnerable people in the Victorian community, the fit out of the Dandenong Hospital Mental Health Facility needed to be of the highest quality. BN Tiling provided the tiling and waterproofing for the facility's wet areas, including catering areas, and the ensuites of all the patient accommodation.

Their diploma qualified tilers brought high professional standards to the task, ensuring that all tiling work was completed in a way that both ensured resident and worker safety, and delivered an aesthetically pleasing result in keeping with the overall design goal of creating an environment conducive to promoting the sense of wellbeing.

The challenges of this job included a tight timeframe, with completion dates dictated by the need to have the facility operational and caring for patients. BN Tiling take pride in ensuring all of their jobs are completed on time, and within budget, and the Mental Health Facility tiling was duly completed to program requirements and to the required standard.

All of BN Tiling's work is fully guaranteed, and the company aims to produce the best quality of work possible, from the choice of tiles through to the fixatives and skill used to apply them. Their crews have provided superior tiling for projects across the commercial, industrial and domestic sectors.



Their capabilities include ceramic tiling, stone tiling, waterproofing, floor preparation, caulking and sealing. Based in Melbourne, since 2006 BN Tiling has been servicing customers throughout the Melbourne metropolitan area and regional Victoria.

Other noteworthy jobs recently completed have included Crown Nobu, Novotel St Kilda, 595 Collins Street and Rock Pool Bar for Isis Projects; ANZ 55 Collins Street, Australia Post, Esso House and Air International for Eveready Partitions; and 740 Ballarat Road for Anderson Construction.

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