

# AUSTRALIAN SYNCHROTRON

**MAIN CONSTRUCTION COMPANY :** Kane Constructions  
**CLIENT :** Australian Synchrotron  
**PROJECT END VALUE :** \$30 Million  
**COMPLETION :** May 2012  
**ARCHITECTS :** Bates Smart/Architectus  
**STRUCTURAL ENGINEER :** Winward Structures/Irwin Consult  
**BUILDING SURVEYOR :** McKenzie Group

## TOTALLY IN SYNC

Kane Constructions was successful in its fixed, lump sum tender for the role of head contractor for the Australian Synchrotron building project. This was thanks to its proven track record of safety, and its ability to deliver on time without compromising on quality - values that have enabled the company to keep this varied Australian Synchrotron project to schedule.

The Australian Synchrotron is a synchrotron radiation facility, comprising a main building housing the synchrotron: a machine

about the size of the Melbourne Cricket Ground. It is used by scientists to create highly intense light beams (ranging from infrared to hard X-rays), which are then used to perform experiments in areas as diverse as microbiology, nanotechnology and micro technology.

Key onsite infrastructure additions and improvements to the main building were required and thanks to a Federal Budget award, using the Education Investment Fund, they have now been able to proceed. The main consultant teams consisted of Bates Smart Architects, Winward Structures and Umow Lai on the National Centre for Synchrotron Science Building, with Architectus, Irwinconsult and Aecom working on the balance with the exception of Kadar and Bradley who worked with Tim Gibney and Associates also on the UPS Building extension.

There are five buildings in all, each with a unique structure to match their separate purposes.

- The modular office extension pod is connected to the main synchrotron building. It has a hollow core precast base structure, with columns and beams to the first floor, and steel structure above.
- The two-storey National Centre for Synchrotron Science building will house a 400-seat auditorium, seminar rooms, exhibition space, office space, cafeteria and underground parking. Pre-cast walls make up the structural facade, with concrete floors to all levels. The steel roof structure spans between internal columns, and externally light weight steelwork fixed to precast carries

an architectural Rodecca facade. Internal light walls illuminated by rows of continuous skylights surround and auditorium and gallery space. Using state of the art reflective film both on wall linings and skylights, the inner acrylic light wall is a strong feature of the building. The main floor space consists of polished concrete creating a durable but effective result.

- A two-storey user accommodation building with 50 self-contained rooms, communal kitchens, lounges, laundry and reception has precast concrete wall frames to the ground and first-level with a structural steel roof over.
- The laboratory building has four laboratories, an open plan office area, meeting rooms, mechanical workshop and stockroom. It also has a links to the main synchrotron building on both ground and mezzanine levels.
- An extension to the existing low voltage UPS switch room was completed using simple precast structural walls and steel roof framing. Specific tolerances were required to be followed during concrete placement, as well as electrical earthing to cater for equipment being installed to this area.

“This has been an exciting concept to work on,” says Ben Barrett, of Kane Constructions, “the variety of structures and the speed with which the project has evolved has made it an interesting project. Our client is very happy with the results!”

Kane was responsible for engaging and managing all sub-contractors for the works. Kane staff pride themselves in their attention to detail, quality control measures and a commitment to motivate all subcontractors right to the end. One method of achieving this, is to timetable fortnightly

meetings between the clients, consultants and contractors. This ensures the bigger picture items are maintained on track, as well as dealing with the day-to-day issues that inevitably arise.

Kane Constructions is a privately owned commercial construction company operating in all sectors of the industry. With a turnover of \$500m+ and over 285 full-time employees, it operates throughout the east coast of Australia and overseas from offices in Melbourne, Sydney and Brisbane.

Since commencing operations over 35 years ago, Kane Constructions has successfully delivered over 1500 projects covering a wide variety of styles, sizes and locations. Current projects include :

- The \$95 million RACV Torquay Resort due for completion in early 2013
- Design and construct of the \$32 million Simonds Stadium Southern Stand – home of the Geelong Football Club
- Preferred contractor for the design and construct a \$50 million 5-star Greenstar office building in Springfield, Queensland
- Restoration and refurbishment of the historical Burton Street Tabernacle in Paddington, Sydney

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# SETTING THE STANDARD IN CONCRETE AND FORMWORK



In 1996 Paul Bassford started up Solcrete as a one-person operation: with over 22 years' extensive experience in the concreting industry, he was well placed to make a big success of this company. Fifteen years on, he has done exactly that, and the company has gone from strength to strength, growing into one of the leading concreting companies in Melbourne. It now employs no fewer than ninety-five staff including estimators, quantity surveyors, contract administrators, office support, formwork carpenters, concreters, dogman, riggers, steelfixers and skilled labourers.

The company offers a range of skills, techniques and experience that is second to none and its current medium size ensures that every customer is guaranteed highly personalised and individual attention and service.

Solcrete's success has been due mostly to their attention to detail and high quality of workmanship as well as their utmost commitment to overall customer satisfaction.

The National Centre for Synchrotron Science (NCSS) project was awarded because of their strong reputation and integrity throughout the building industry to deliver top quality work on schedule and without fault.

The specific work done at the Australian Synchrotron site was carried out across all five buildings including:

- Concrete placement to 2mm tolerances
- Detail excavation and set out of footings
- Conventional suspended slabs along with Bondeck suspended slabs
- High quality burnish finishes
- Supply and placement of reinforcement.

Each building is different in style and construction and involved considerable expertise, organisation and interaction with the other contractors.

"The project was extremely demanding, but at the same time rewarding to work on. We achieved all aspects of construction within the nominated time frame set out for us, while maintaining the highest degree of onsite safety." Said Neven Kinda, Solcrete's foreman on this project.

Solcrete is committed to ensuring the safety and good health of their workforce and offers its employees training not only in OH&S but in all aspects of the construction industry, whether that be advanced plan reading courses or regular after-hour lectures hosted by industry experts for employees who want to know more about concrete technology.

Solcrete is currently working on numerous other projects such as:

- 1142 Nepean Highway, Highett, Victoria with Valeo Construction. This project consists of three multi-storey apartment blocks. Solcrete's work started in June 2011 and the scope of works consists of concreting and formwork.
- Camberwell Library - City of Boroondara, Victoria with Abigroup Contractors Pty Ltd. Solcrete will be starting work in mid-July 2011 supplying and placing concrete, formwork and reinforcement to three buildings – the main building, the plaza building and the car park. With exposed concrete soffits to the underside of the concrete in the carpark areas
- Doveton Primary School, Victoria with SJ Higgins Pty Ltd. A new school complex consisting of 5 buildings with suspended slabs, requiring a high quality of finish as they all have exposed concrete soffits for form 1 finish.
- 800 Elgar Road, Doncaster, Victoria with ABD Group. A combination of apartments and townhouses, the scope of works that Solcrete will be completing is concreting, formwork and supply of reinforcement.
- Department of Human Services, Altona, Victoria with Kane Construction. This project is a three- storey building consisting

of 69 residential units and an accompanying sub-station. Solcrete's workload included the supply and installation of concrete, formwork and reinforcement.

- Camberwell Grammar School, Canterbury, Victoria with McCorkell Construction. Three- storey school addition with suspended slabs and Insitu load bearing concrete feature walls. Solcrete is undertaking the complete structure package.

As demonstrated by the variety of projects Solcrete are involved in, their work ranges from the standard ground slab installations through to more complex multi-storey developments and everything in between. Whatever the scale, Solcrete can ably provide the expertise and skills required to fulfil all of the concreting needs for any commercial or industrial development.

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## LIGHTING THE WAY FORWARD

The Signcraft Group story began in the 1970s. Sam King had been working in the signage industry for several years and had noticed a consistent lack of service from the established signage players across Australia. As a result, he set about moulding his own company, which would consistently supply and install quality signage tied in with a strong client focus.

Sam's business principle, "performing a common task uncommonly well", has been the foundation stone for The Signcraft Group's significant success to date.

The Signcraft Group now enjoys the status of being Australia's largest sign company and specialises in corporate signage and signage rollouts, holding heavyweight clients such as Woolworths, Commonwealth Bank, Telstra, National Australia Bank, Masters Home Improvements and Specsavers.

The two-storey National Centre for Synchrotron Science building will house a 400-seat auditorium, which requires four acrylic light walls (two walls being 8m x 16m and two walls at 8m x 35m) that allows for magnification of both natural and artificial light sources thus minimising the necessity for extensive lighting equipment.

This novel concept is currently at prototype approval stage. These walls will provide a glow illumination using minimal lighting, effectively magnifying

the light source, be it natural or artificial. The light walls themselves have a clear clean light and are made up of an application of a specialised radiant film and an optical lighting film encapsulated between sheets of clear acrylic panelling.

The Signcraft Group provided comprehensive assistance with regard to the design and manufacturing processes throughout the tender stages and again in negotiations prior to the award of contract. They were judged the most suitable contractor demonstrating the ability to transform the architect's vision into a manufacturable product along with their comprehensive in-house resources.

Additionally, The Signcraft Group has the national and international geographical coverage to provide a professional and complete solution from initial design to manufacture and installation for any signage requirements whether large or small, standard or innovative.

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