



1916-2006 NILSEN 90 YEARS

# NILSEN

*review*

ISSUE 16, NOVEMBER 2006



NILSEN EXCELLENCE



## From the Managing Director



When putting pen to paper for this edition of the Nilsen Review, the first thought that struck me was how incredibly quickly time passes; it has been 18 months since the last issue.

Those 18 months have seen a continuation of our investment in training, both technical and non-technical, with partners such as MBS and AIM. We have expanded TEGG from one state to four (and, very shortly, five) – see opposite page. We believe these ongoing commitments will create greater value to all our stakeholders, customers, employees, suppliers and partners.

We have also been making significant changes to our brand image, with more consistent logos and as of October our name, with the removal of the word "Electric". This change better reflects our current business, since the work we do for our clients is far broader today than just electrical.

We are continuing to encourage our business to solve customer issues by being innovative in the products and services we offer; TEGG and our Nilsen Voltage Indicators are just two examples.

As always, there are many articles throughout the Review that give an insight into the cross section of projects we have been involved in recently, as well as the diversity of customers and locations.

I extend my thanks to all who have given us the opportunity to continue showcasing our skills across the country. We appreciate your custom and look forward to the opportunity to work with you in the future.

Last, but by no means least, I would like to acknowledge the support of two stakeholder groups: the employees of the Nilsen Group, and the company's shareholders. As with any fourth generation company of 90 plus years, the ownership, interests and passions do not always align. The support of employees and shareholders helped Nilsen realise another change: consolidation of ownership to one single point. Thanks particularly go to Oliver John Nilsen for his support of this transition.

Enjoy the rest of the Review, and I would welcome any feedback you may have regarding any of the articles that follow.

**Mark Nilsen**  
MANAGING DIRECTOR

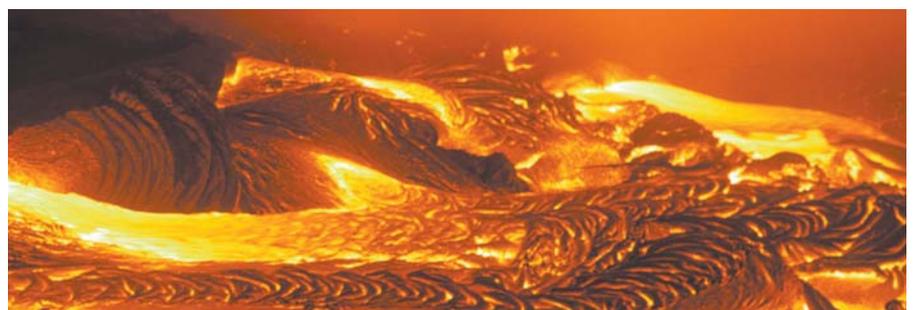
## Keeping ahead of the glass

A meltdown in one of the electroboost kilns at ACI Industries' South Australian glass smelter was cause for alarm as the molten liquid – bubbling at several thousand degrees Celsius – broke through barriers and cascaded across the floor of the facility.

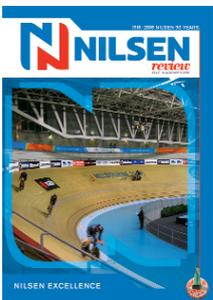
Electrical damage from such an event is considerable, with cabling, controls, instrumentation, switchboards, control boxes and anything else in the liquid's path facing certain destruction. Emergency response crews were quick to contain the damage but, with a full cleanup requiring a month-long cool down and at least three months to resume operations, it was essential that the system be brought back online before the contents of the kiln had cooled and solidified.

Nilsen's South Australian operation quickly organised an emergency response, with up to 24 employees working two shifts for nearly two weeks to rebuild the electrical infrastructure and get the plant back online so it could resume operations before the melted glass cooled.

Pulling off this recovery effort required strong teamwork and quick action on the part of the responding Nilsen staff. Because it is in ACI's interest to rewire and fire up the kiln again as fast as they can, Nilsen's suppliers had to get together quickly and instantly acquire the materials they needed. Staff had to rely on drawings produced from previous wiring jobs, and worked around the clock to help get the site operational again in time.



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Our website will always  
be a work in progress.  
Check it out at  
[www.nilsen.com.au](http://www.nilsen.com.au).



Cover Photo: David Braue  
[www.braue.com](http://www.braue.com)

# Gold-standard asset management



It's the world's most respected standard for asset maintenance, and we

are proud to point out that Nilsen is the only company in Australia capable of providing fully certified TEGG staff and services.

If you're not up to date on TEGG, here's the lowdown: founded in 1992 by TEGG Corporation in the United States, TEGG mandates standard methodologies for preventative asset maintenance. Keeping our TEGG certification means that our

technicians have to undergo regular, intensive training in the US to ensure they are up to date with the latest maintenance and asset management techniques.

The addition of TEGG Service to Nilsen's range of services has been a major step forward, allowing us to provide the industry's only asset management certification that is guaranteed. This means peace of mind for us and for our customers, who can choose Nilsen's TEGG services knowing they are getting world's best practice.

TEGG has been so well received in the Australian market that Nilsen Victoria received the company's Rookie of the Year award after our TEGG experts helped Nilsen deliver the best sales results of any TEGG franchise, anywhere in the world.

That's a strong validation of Nilsen's commitment to TEGG and a guarantee that TEGG-certified technicians should see more warm receptions from customers as they continue to spread the word about this important capability across Australia.

## Nilsen's new look

Nine decades after it was founded, Nilsen continues to grow and expand due to the success of our enthusiastic and highly skilled people. This has driven strong success across our divisions, and helped turn Nilsen into one of Australia's strongest brands in its industry.

To reflect our strong position, Nilsen is undergoing a major branding exercise that will extend to every aspect of the business. Working in consultation with managers, employees and designers across the country, we are building a consistent image for our vehicles, offices and correspondence that will convey the strengths of Nilsen past, and the promise of Nilsen future.



## Our latest bright sparks

**To ensure we're keeping up with customer requirements, Nilsen is constantly bringing fresh talent into our team.**

Twice a year, our ongoing apprenticeship program expands the team with several young individuals who are seeking to become qualified electricians. In July, Nilsen Victoria welcomed four apprentices.

In South Australia and Western Australia, Nilsen also welcomed apprentices into the Engineering Services and Switchboards parts of the business. All will be working hard alongside Nilsen experts to expand their skills, and we wish them the best of luck in their chosen careers.



*Nilsen's newest Victorian apprentices (Left to Right): Lyndon Cunningham, Aaron Gatt, Matthew Miceli, and Rob Vocale.*



*Switchboards S.A. (Fabrication) apprentices: Andrew Rae and Adam Waddingham.*



*Engineering Services S.A. apprentices: Adrian Loffler, Justin D'Andrea and Tim Watkins.*



*Switchboards S.A.(Electrical) apprentices: Daniel Dobrucki, Arek Trella, Sebastian Majchrzak, Daniel Muser and Matthew Lockie. Missing – Peter Redding & Dinko Cirjak.*



*W.A. apprentices: Switchboards – Kane Hornsey, Lee Peters, Dylan Parry, Elliot Swanson, Chris Spencer and Cory Domican. Commercial – Josh Hobbs. Contracting – Matt Marchall.*

## Success for Nilsen safety innovations

*Switchboard installations by Nilsen and other providers are now getting even safer, thanks to a Nilsen-designed product that is becoming increasingly popular with customers in a range of industries.*

The Nilsen Voltage Indicators (NVIs) are small three-phase indicators for switchboards and motor control centres that use a cluster of LEDs to show whether or not the connection is powered.

The units, which were recently released as a second-generation round product that's even easier to install, allow technicians to tell at a glance whether power is running through the connection.

As with the traffic indicators that have become popular in recent years, using a number of LEDs ensures that even the failure of several lights won't give potentially life-threatening false negatives. The long-life bulbs give the product an expected lifespan of 22 years, and they also offer a high degree of safety because there are no exposed terminals on the unit.

The NVIs operate between 48V and 600V AC, and can be retrofitted into existing switchboards and control centres. More than 4000 of the devices have already been installed at sites owned by companies like Rio Tinto and BHP Billiton, and growing interest from both



Nilsen customers and other switchboard manufacturers promises continued success for this latest Nilsen innovation.

# Awards

*Naturally, we're proud of our people and the services they deliver, and we think they're the best in the industry by far. It's especially nice, however, to know that other people feel the same way.*

*Over the past year, Nilsen staff across the country have been acknowledged with a number of prestigious awards that confirm the innovative, effective solutions we are delivering.*

*Congratulations to all the winners, and keep up the good work!*

## Advancing synchrotron science – and installation

It has been heralded as one of Australia's most important scientific research facilities, and when the Australian Synchrotron opens next year it will provide a significant step forward for research in areas ranging from medical research to nanotechnology.

Behind the synchrotron, naturally, is an extremely complex array of machinery linked with equally complex electrical infrastructure. Nilsen was proud to be the primary contractor for this part of the Synchrotron's construction, and even prouder when the work of the 30-strong team was acknowledged with an Award of Excellence from the National Electrical and Communications Association in July. Judges called the work "a total first class installation".

Nilsen's work on the Synchrotron included installation of nearly 500km of cabling, including high-voltage coax serving all manner of sensitive instrumentation. An assortment of engineers and physicists from around the world, consulting on the

Synchrotron's construction, heralded Nilsen's rapid, high-quality work as an outstanding example of a major, complex and multi-disciplinary high-tech installation.

The success of Nilsen's work at such an iconic property, and its recognition by NECA, is a testament to Nilsen's ability to manage even exceedingly complex jobs, smoothly and efficiently. Congratulations to all who were involved, and good luck to the team when it competes in the NECA National Awards this month, in Sydney. For the full story, see our writeup later in this issue.



## A super TEGG salesperson



The introduction of TEGG Service to Australia is big news for Nilsen, and Derek Sweeney has been working hard to make sure our customers know all about it.

He's been working so hard, in fact, that he was recognised by TEGG Corporation in the US with the 2006 award for International Rookie Salesperson of the Year. This prestigious award reflects Derek's strong commitment to building his knowledge about TEGG, which has been built up through a number of trips for training at TEGG's Pittsburgh, US headquarters.

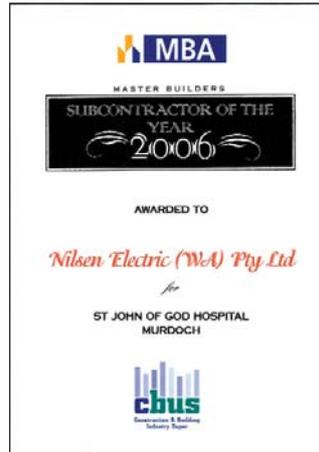
"The interest in TEGG is fantastic, and the uptake is great," says Derek. "It's far above and beyond what is currently being done in the market, and I'm looking forward to adding value for customers in other parts of the country as we expand it nationally. And while I picked up the sales award, it has been a good team effort."

## A strong showing in the west

Nilsen's Western Australian operations turned in a great performance at the Master Builders' Association of WA awards, winning two project-related awards, as well as the award for Subcontractor of the Year.

Subcontractor of the Year was awarded for Nilsen's work at the St John of God Hospital project in Murdoch. Commissioned by BGC Construction along with Electrical Technology Consultants, Nilsen was involved in the design, installation and commissioning of electrical services for the project. This included nurse and emergency call, staff assist and duress alarm systems, and communications, security and fire protection systems.

The high quality of the Nilsen team's work is reflected in the prestigious award, but Nilsen WA wasn't putting all its eggs in one basket. The team also won the MBA Excellence in Construction Award for its work at the Perth Convention & Exhibition



Centre, and an MBA Excellence Award for its work at St John of God Hospital.

This last award found Nilsen competing against itself, after it was also nominated for its work on the Bunbury Council & Civic Chambers. That's a great result, and all involved are to be commended for their consistently high-quality work.

## Quick response

It was hardly the way any organisation would want to ring in the Christmas holidays, but Mercy Hospital in Melbourne was back up and running quickly thanks to the quick response and quick thinking of a team of Nilsen engineers.

The dramas began when the hospital's 1960s-era main switchboard blew up on Christmas Day 2004. The ensuing fire closed the hospital, but the determined effort of 15 Nilsen staffers, working across three shifts for ten days, had the site back up and running in record time.

Nilsen's success with the project was recognised with a win in the Commercial – Small Project category of the NECA Awards, which recognised the "exceptional effort" involved in quickly rebuilding the hospital switchboard and returning the facility to operational status. Congratulations to everyone that helped deliver such an outstanding result for an important Victorian institution.

## Award-winning safety



Safety has always been the primary concern at Nilsen, but just how well we've built our safety culture became clear after Nilsen won the Occupational Health & Safety category of the NECA Victoria 2006 awards.

The awards commended Nilsen's documented OHS Management System, a constantly evolving body of knowledge that provides constantly improving health and safety management practices across Nilsen operations. These practices include maintenance of a full-time OH&S manager; corporate OH&S safety committee; business OH&S consultative committee; comprehensive manuals, procedures and reporting systems; and monthly OH&S communication to all employees.

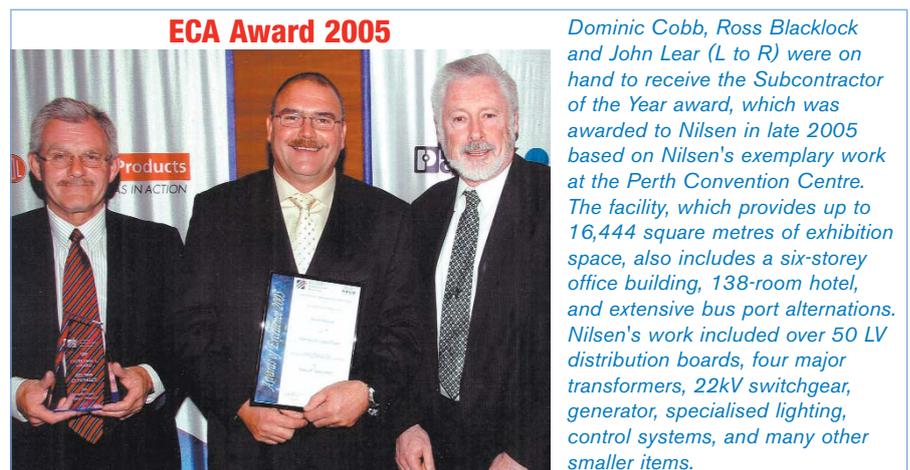
Most recently, our efforts to build an even stronger safety culture resulted in Nilsen's OH&S Leadership Program, a

holistic approach to safety that continually measures performance and has reduced LTIs by 76 percent since it was introduced in 2001. Our WorkSafe premiums have reduced, lost time for our

stakeholders has reduced, and we have commenced enabling our people's leadership abilities.

Nilsen, the judges noted, "has demonstrated a strong commitment to health and safety with a very professional documented OHS Management System, which has been underpinned by good consultation with staff throughout the organisation. This has led to the development of a practical approach to health and safety management within the company."

Having a formal and comprehensive OH&S policy helps Nilsen deliver better results for our customers, a safer working environment for our partners, and most importantly, a safer working environment for our employees. Congratulations to everyone who has worked hard to ensure every Nilsen employee enjoys the safest working environment we can deliver.



### ECA Award 2005

*Dominic Cobb, Ross Blacklock and John Lear (L to R) were on hand to receive the Subcontractor of the Year award, which was awarded to Nilsen in late 2005 based on Nilsen's exemplary work at the Perth Convention Centre. The facility, which provides up to 16,444 square metres of exhibition space, also includes a six-storey office building, 138-room hotel, and extensive bus port alterations. Nilsen's work included over 50 LV distribution boards, four major transformers, 22kV switchgear, generator, specialised lighting, control systems, and many other smaller items.*

# Nilsen Nationwide

## Helping Coles Myer keep its cool



*Coles Myer's new cold storage facilities are a pivotal part of the company's long-term expansion plans.*

In a significant new strategy, Australia's largest retailer is creating a network of massive national distribution centres (NDCs) that will store dry and frozen goods at waypoints to facilitate distribution of products across the country.

Key to this network will be a series of massive temperature-controlled facilities that will allow Coles Myer to store slow-moving stock in a central location.

It's a major component of Coles Myer's long-term growth strategy and, as might be expected, everything about the facilities is supersized. The \$100 million Victorian facility, in Somerton, measures 74,700 square metres, while a \$113 million facility at the M7 Business Hub in Eastern Creek, NSW will measure 75,230 square metres, and a \$125 million facility in Edinburgh Park, SA will be equally large.

Managed by Qanstruct, the Edinburgh Park facility, for example, includes around 100 loading docks, rail links, and segregated storage facilities including a -24°C freezer, 2°C cold storage facility, and temperature controlled warehouse for carton goods.

Nilsen has won the tender to supply electrical services to the Adelaide and Somerton facilities, which are in various

stages of completion, and is bidding for the work at the Eastern Creek site.

This total infrastructure solution includes substation work to link high-voltage gear with transformers, switchboard design and construction, generators, distribution boards, and light and power throughout

the buildings. There is also emergency and exit lighting, a c-Bus lighting control system, comprehensive communications system with redundant backup, lightning protection and related works.

Similar work is being done at the Coles Myer Somerton facility, which is larger in



*Nilsen's engagement includes a full range of electrical equipment ranging from high-voltage gear and transformers to switchboards, generators, distribution boards, emergency lighting, c-Bus lighting control, communications, lightning protection and more.*



size but doesn't have the same cold storage requirements. That 12-month engagement has been a challenge for its tight delivery timeframe and – in a vast, expansive warehouse three times the size of the MCG – cable pulls of up to 400 metres through underground conduits.

Those pulls bring power to a broad range of facilities ranging from the high-bay lighting, general warehouse power and office areas to external locations such as the gatehouse and carparks. A team of around 40 Nilsen staff has worked diligently to complete the large-footprint

project, which includes a Nilsen designed and built main switchroom, as well as three generators and extensive low-voltage reticulation. The communications part of the project also included 31 communications cabinets; 10.6km of multimode fibre; 7.2km of 25/50-pair copper cable; and 71km of 4 CAT 6 cable.

Each of the state projects is being handled separately, but Nilsen's success in several states has provided a deep base of resources for the individual teams to call upon. Staff in Victoria and South Australia have been communicating with their

counterparts in other states, and Nilsen workers from NSW have been involved with the South Australian project to hone their skills should Nilsen's bid for the Eastern Creek work be successful.

The free flow of information and knowledge adds considerably to the project team's pool of available resources. Faults identified in one site can be quickly dealt with in another, and future contract wins will strengthen this information exchange network even more, reinforcing the value of Nilsen's consistent, nationwide presence.



*The \$125 million facility at Edinburgh Park, SA and \$100 million facility in Somerton, Victoria are each around 75,000 square metres in size.*

# High-tech

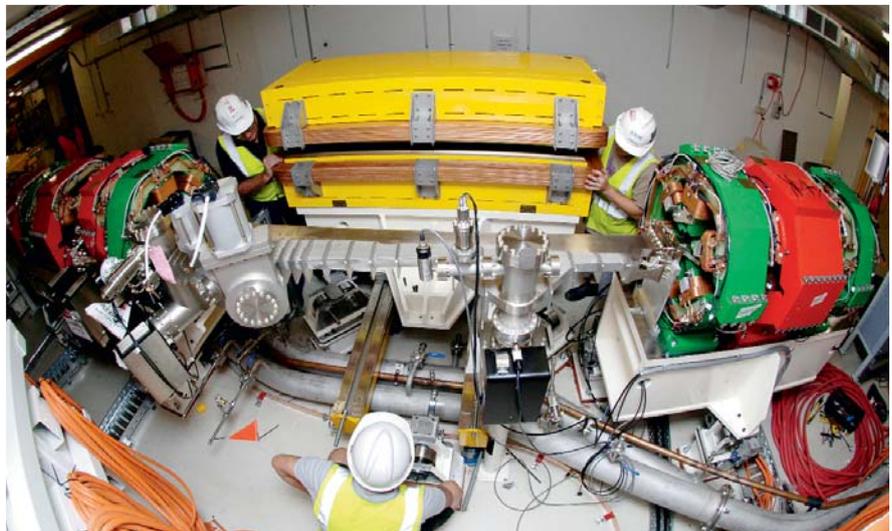
## Advancing Australian science

Five years in the making, the Australian Synchrotron – in Melbourne's south-east suburbs – is the most significant scientific research facility to be opened in the country for decades.

Around 116 metres in diameter, the circular facility will allow scientists to use intense, narrow beams of light a million times brighter than the sun to study the structure and behaviour of the atoms and molecules that make up matter. This will support a range of research in areas as diverse as physical and chemical and biosciences; nanoscience; agriculture; minerals, oil and gas; advanced materials development; forensics and more.

As a medium-energy 3.0 GeV (Giga electron-volt) facility, the Australian Synchrotron will be well positioned against other regional facilities such as those in Singapore (0.7 GeV), Thailand (1 GeV), and Taiwan (1.5 GeV).

Serving as the prime electrical services contractor to the synchrotron project, Nilsen has worked closely in conjunction with government and commercial authorities since it moved onsite in late 2004. And, as the last few stray jobs were being completed in the third quarter of 2006, the Australian Synchrotron project is being hailed as an unqualified success for the Nilsen team, which averaged around 30 people and peaked at around 45.

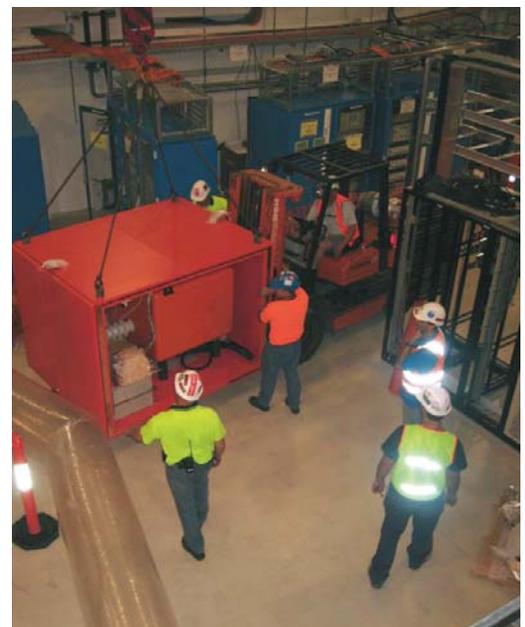


Nilsen's work on the project received an Award of Excellence in the Industrial category of the National Electrical and Communications Association in July, with judges hailing it as "a total first class installation" and international observers offering positive appraisals of the quality of Nilsen's workmanship.

The high-profile nature of the site – which will give more than 1200 scientists access to a world-class synchrotron without having to venture overseas - gave Nilsen engineers the opportunity to share industry knowledge with peers in other countries, growing the overall skills base within Nilsen.

As suggested by the three-year construction schedule, getting a synchrotron to work requires a large range of complex machinery, all of which was connected in some way by Nilsen engineers.

Nearly 400 high-voltage coaxial cables, for example, had to be terminated and tested to 10,000 volts. Almost 500km of cabling was installed, including almost two dozen different types of coaxial cable each requiring a different type of connector. Around 10km of cable tray and duct work snake through the 100 metre-wide facility, which included a range of instrumentation.

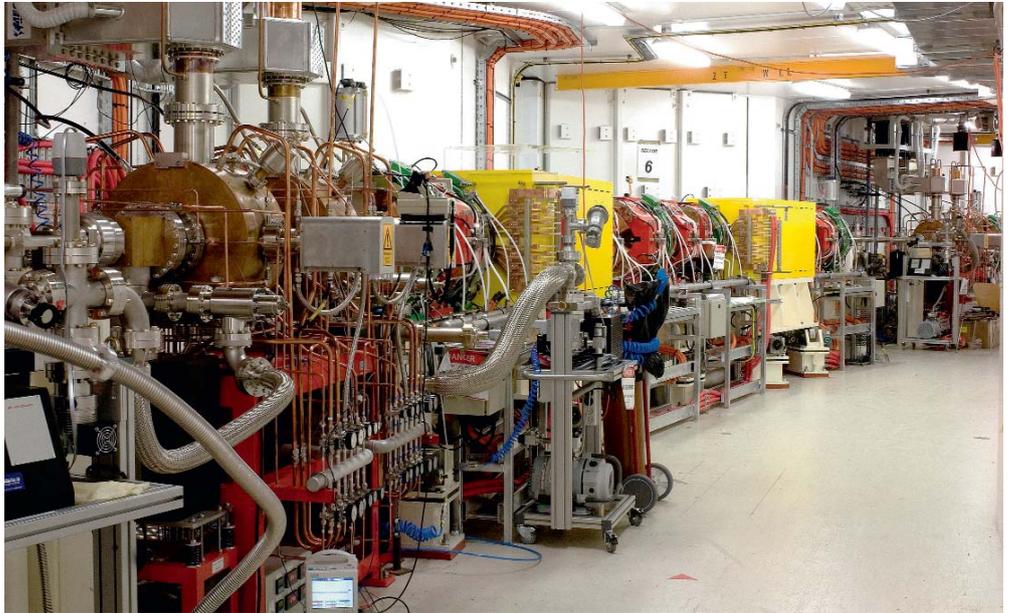


# installations

## *in the Garden State*

Because of the high-energy nature of the synchrotron, Nilsen engineers underwent GERT-1 (General Employee Radiation Training Level 1) supported by a Personnel Safety System (SAGE) package. In addition, ten Nilsen staff completed advanced GERT-2 training to ensure their safety in the highest energy areas of the synchrotron complex.

The major part of Nilsen's engagement was electrical services works, including the design, manufacture, supply, installation, testing and maintenance of HV conduits, mains cabling, main switchboard, generator, submains cabling, distribution boards, subcircuit cabling, UPS, fire detection, security, MATV, lightning



protection, high bay light fittings, and other key systems. Nilsen also handled communications cabling, signal cabling,

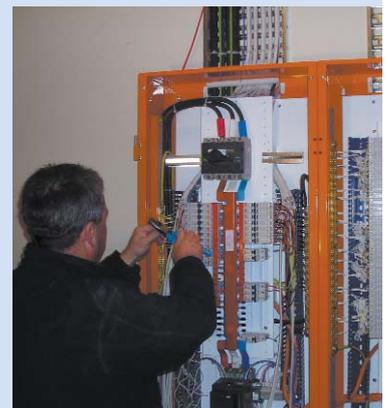
storage ring magnet works, the SAGE package, injection system works, and front end cable works.

## Driving a new kind of luxury

Melbourne is well known for its luxury hotels and well-appointed facilities, but the opening of the RACV City Club was notable for its sheer size and scope.

The 17-storey building, located at 501 Bourke Street, includes 112 rooms, a three-storey 460-space car park, a variety of restaurants and bars, a fitness centre, a 25-metre six-lane indoor swimming pool, a day spa, business centre, and conference facilities. In addition, several higher floors of the building are leased as general office space.

Nilsen won the electrical services contract for construction of the facility, which had Nilsen engineers crawling through tennis courts, the swimming pool and other interesting spaces to wire its many facilities. The team designed and installed five primary switchboards as well as a full complement of lighting, lighting control, generators, and managed other installations including security and related systems.



# High-tech



## Painting skills on display

Even a standard electrical fitout can become demanding when it takes place in an environment requiring special skills and training. Throw in a short 12-week timeframe and the need to comply with a stack of local regulatory requirements, and it's easy to see why Nilsen's 20-strong team found a recent installation at the Cabot's manufacturing plant a welcome challenge.

The work accompanied extensions to the manufacturing plant of paint maker Cabot's (a subsidiary of chemical giant Orica), involving three sections of the plant contained within a brand-new building. Cabot's installed its equipment, and Nilsen was brought in to manage the

electrical services around the installation. The scope of the engagement included power, control, equipment and instrumentation wiring, as well as switchboard design and construction and related services.

In an environment filled with potentially explosive paint fumes, special care must be taken to ensure electrical systems don't throw any potentially problematic sparks. This required documented compliance with a range of local legislations, which were already well understood by a number of Nilsen staff. It also required the sourcing and implementation of specialised equipment

such as explosion-proof gear.

As a broad engagement for Nilsen, the Cabot's installation provided the team with the opportunity to co-ordinate work between the various parts of the project. This led to sharing of expertise in particular areas - one of the benefits of being part of such a multi-disciplinary team. The need to follow strict regulatory guidelines, for example, required experts in that area to convey Nilsen's requirements to the rest of the team. In each case, specially skilled engineers took the reins and directed the training so the project could be completed as quickly and successfully as possible.



## More than a Band-Aid approach

It's one thing to run electrical infrastructure through a completely new building, but another thing altogether to manage an upgrade to a busy facility that must remain serviceable throughout the life of the project. When Dandenong Hospital moved to redevelop a central wing of its buildings, Nilsen's role as primary electrical services provider forced it to do just that.

The \$34 million redevelopment came as the hospital moved to demolish the existing four-storey building and replace it with a new four-storey building including two 36-bed wards, a 20-bed rehabilitation ward, and 14-bed intensive care and coronary care ward. Also included in the new facility are two additional operating theatres, an enhanced Accident & Emergency department, peri-operative and day surgery areas, and other features.

Minimising the effect of the works on the operating hospital was critical for the project, which commenced in 2003 and ran into the early stages of this year. During that time, a team of 15 (and up to 30) Nilsen workers worked to design and

install a broad range of systems, ranging from switchboards and load shedding equipment to interfaces with the existing building management system and infrastructure. Prime contractor Abigroup also gave Nilsen the task of managing various subcontractors handling nurse call, PA, data, telephone and security systems.

Because the site was in continuous use, much of Nilsen's work in the initial stages

was keeping the existing hospital going and redirecting services and managing shutdowns, while the old building was demolished. Nilsen staff faced the challenge of matching their equipment with the existing control systems the hospital had in place. However, with everyone talking the same language, the project team was able to co-ordinate everyone and get it all to work at the end of the day.



# installations

## *in the Garden State*

### Nilsen's own quest for gold

Melbourne's Commonwealth Games organisers quickly returned the city to its pre-Games state after the event concluded, but they weren't the only ones: having managed a large lighting installation at the National Tennis Centre, Nilsen engineers were also on the job to conclude their lightning-fast engagement.

That project saw around 20 Nilsen engineers working 15-hour days in the four weeks before the Games, making sure the Rod Laver Arena and Vodafone Arena (renamed the Multi-Purpose Venue during the Games) were ready for their menu of basketball, cycling, netball and gymnastics.

The installation included a range of Games-specific lighting, generators, and related equipment that helped ready the MPV for the high-profile sports and intense media coverage of the events. During the course of the Games, five on-site Nilsen engineers provided ongoing maintenance of the equipment, using thermal cameras and other equipment to check current levels and otherwise ensure that the demands of the event weren't straining the gear; after all, in an event such as the Games there is no margin for error.

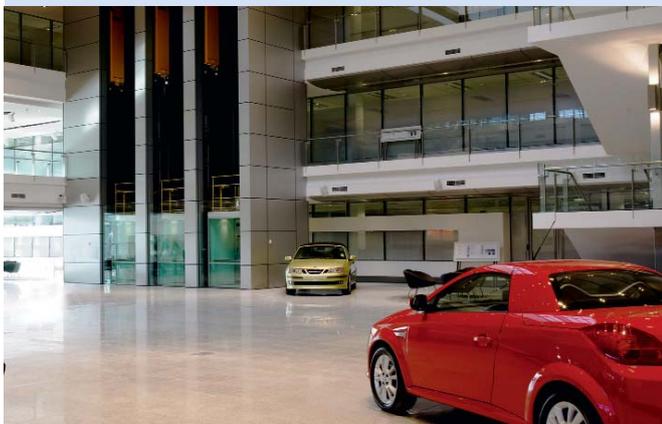


Although working hours returned to normal during the event, as soon as the organisers were finished with the MPV, the Nilsen team got back down to business: with just two weeks to dismantle the gear, it was an exercise in efficiency; Nilsen's contract specified that the site be left in the condition in which it was found, so the team worked steadily to

remove unneeded generators and cabling, as well as temporary boards and necessary poles.

There's no stopwatch for timing electrical services work. If there were, however, the Nilsen team's success meeting the short timeframe and intense requirements of the project would certainly have been a medal-winning performance.

### A smooth ride for Holden



Holden has long been an Australian icon, so it's fitting that the company's new headquarters would be equally iconic.

Located in Fisherman's Bend just outside of the Melbourne CBD, the new building has brought together all of the company's 1800 staff for the

first time, spreading them across three floors in a highly automated, energy efficient building that will support the company's planned growth for the long term.

As prime electrical services provider at the new site, Nilsen had the opportunity to draw on a range of skilled

technicians to handle the many complex aspects of the project. This included the usual range of electrical, switchboard and generating equipment, as well as an extensive fibre-optic data network supporting both data and voice over IP (VoIP) communications.

Environmental considerations were a major factor in the building's design, with intelligent c-Bus control systems helping monitor and control energy usage. For example, hundreds of motion detectors in many areas dim the lights when no employees are present. These and other environmental considerations contributed to the building's 5-star energy conservation rating.

Security was another major consideration, with the in-building security system integrating the various security systems across the premises and eventually to be linked with other Holden sites across the country. To ensure the installation met all of Holden's requirements, engineers from both companies worked closely together to complete the comprehensive installation as smoothly as possible.

# New South *Update*

## Keeping the fresh food people fresh

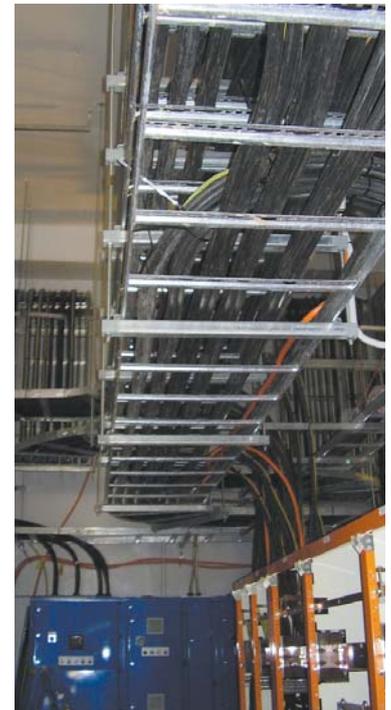
A burst of new cold storage facilities by both major grocery suppliers has spawned a number of high-profile developments, including the \$78 million Sydney Regional Distribution Centre being constructed in Minchinbury by Hansen Yuncken.

Nilsen provided the electrical infrastructure for the recently completed building, and added 30,000 square metres of cold storage to the existing ambient temperature space at the site.

The new facility includes loading and despatch docking facilities, perimeter hardstand facilities, truck parking, refuelling and washing and additional staff car parking, as well as extensions to staff amenities and office spaces. A graduated series of storage rooms will store frozen and chilled products at  $-28^{\circ}\text{C}$ ,  $5^{\circ}\text{C}$ , and  $13^{\circ}\text{C}$ .

Nilsen's role included the supply and installation of all the facility's switchboards, lighting, mains supplies to the refrigeration units, general power, security, communications and lightning protection systems. High ceilings within the facility required the team of up to 20 Nilsen employees to spend much of their time high on scissor lifts and booms.

Because the Woolworths facility is similar in nature to the Coles Myer distribution centres Nilsen is currently working on in Adelaide and Melbourne, Coates has also had involvement with those teams and spent time in Adelaide to support Nilsen's coming bid for Coles Myer's Sydney cold-storage facility.



*Woolworths' new \$78 million Regional Distribution Centre added 30,000 square metres of cold storage space to the company's existing massive storage facility.*

# Wales

## New life for public space

The area around Sydney's Harbour Bridge is a focal point of activity for tourists and locals, but the land under the northern end of the bridge has remained ignored for some time. To resolve this, the NSW Roads and Traffic Authority and North Sydney Council have been working to upgrade the area.

As prime electrical contractor for the Bradfield Plaza project, Nilsen installed a significant range of electrical

infrastructure including switchboards, light poles, control centres, security facilities and feature lighting of the bridge abutment and plaza area.

Nilsen has also installed a range of underground lighting including power points to support the carts of the many mobile vendors that are expected to gather in the area, which lies south of Fitzroy Street in Bradfield Park, Milsons

Point. The overall contractor for the 22-week project was A W Edwards.

The project was an exercise in care, with the bridge's Heritage listing requiring Nilsen contractors to take particular caution when drilling or otherwise modifying the surrounds. This required considerable attention to the way cables, conduits and lighting were laid around the long dormant area.



## Even more maintenance at CSIRO

We already know about our complete commitment to exceptional customer service, but it's always great when customers confirm that we're doing the right thing.

At CSIRO Corporate Park in North Ryde, our consistently strong performance has seen a three-year maintenance contract grow to be worth nearly seven times its original value after CSIRO introduced repeated variations to the scope of the original contract.

The switchboard maintenance contract now includes a broad range of activities ranging from thermographic scanning and analysis to general light and power analysis, fitouts and other jobs across the dozen or so buildings

on the site. Nilsen maintains at least one dedicated service technician at the site every day of the year, with the team expanding to as much as five on particularly busy days.

Such scope extensions say a lot about the exceptional way the Nilsen employees have conducted themselves throughout the contract, and all can be proud of what they have achieved for CSIRO.



# South Australia

## Update

### Linking Port Adelaide with the nation



It's not every day that the State Government fundamentally reworks its transport infrastructure. However, South Australia's freight industry will get a major boost with the completion of the \$178 million Stages 2 & 3 of the Port River Expressway, a major link between the port and rail terminals at the Port of Adelaide and nearby national rail and road networks.

Stages 2 & 3 of the project consist of sister opening road and rail bridges across the Port River. The bridges, being constructed by Abigroup Contractors Pty Ltd, will link Port Adelaide's key industrial areas with key transport routes and contribute to the urban regeneration of the Port Centre.

Stage 2 of the project consists of a four-lane, high-level, opening bridge linking Victoria Road with Stage 1 of the project – a 5.5km expressway from Francis Street to South Road. Stage 3 is a single-track, dual gauge, high-level, opening rail bridge just north of the road bridge. Stage 2 is due for completion in late 2007, while stage 3 is expected to be finished in mid 2007. The opening spans for both bridges are among the largest of their kind anywhere in the world.



As primary electrical contractor for the project, Nilsen has spent the last twelve months in the planning stage and is now in the early stages of what will be a complex project management and electrical engagement process. The primary design contractor for the road and rail bridges is Hardesty & Hanover, an American company whose specialised experience in bascule bridges has meshed well with Nilsen's expertise in electrical installations to Australian standards.

Over the course of Stages 2 and 3 of the Port River Expressway, 25 Nilsen staff will perform a full range of electrical work and manage the activities of sub-contractors by providing specialised bridge systems including plant management and control, and a peripheral

traffic management system that reduces congestion by diverting traffic away from the bridge whilst in the open position.

A unique component of the design for this project is the ability for the bridges to be operated remotely from a centralised control centre located 12km away. Ensuring that the bridges were operable by the existing traffic management system required the introduction of a range of specialised equipment by Nilsen including CCTV installation, limit switches, barrier gates and warning gates.

All equipment will operate remotely and incorporates internal monitoring to ensure that the bridge spans open and close to within tolerances of 1mm. Traditional bridges aren't remotely controlled and require less monitoring of their status, but the Port River Expressway bridge design incorporates limit switches to tell operators the position of the bridge and status of all the equipment associated with the bridge. This and other significant engineering work behind the bridge combine to make the Port River Expressway work a novel, exciting, and rewarding project.



# Adelaide's new gateway to the world



The \$260 million new terminal at Adelaide Airport is a major upgrade for the city, which has worked to expand its international standing since the expanded terminal, capable of accommodating 27 aircraft and 3000 passengers per hour, opened in March.

In a contract awarded by Hansen Yuncken, Nilsen provided all electrical works for the new site. This ranged from conventional tasks like the supply and installation of three 3000A main LV switchboards and power factor correction, to 14 distribution boards serving the aero bridges and 400Hz power systems, nose guidance systems and moving guidance signs for the aircraft.

Also within the scope were 82 distribution boards, lighting, power, an automated exit and emergency lighting system, car park lighting, a LV earthing system, 320km of power and lighting cables, 290 metre 4000A and 722 metre 1600A bus ducts. Nilsen's engagement also included a backup generation system, specialist systems like a UPS check-in counter hearing system, interfaces with the building

management system, and a structured data cabling system including a 165km of category 6E cable and 20km of fibre-optic cabling.

The 18-month project was a major endeavour for the Nilsen team, which established a formal management structure and quality management system to ensure problems were identified and resolved quickly. Up to 56 Nilsen staff members were on-site, including the company's apprentices, for whom the project's broad scope offered ample opportunities to get their hands dirty on a significant public project.



## Good offence, best Defence

A major installation at the Royal Australian Air Force (RAAF) base at Tindall, near Katherine in the Northern Territory, put Nilsen's high-volume project management skills to the test with an airfield lighting project built around 12km of trenching.

This trenching is serviced by 326 pits and associated equipment foundations, 23km of underground conduit and nearly 90km of airfield lighting primary cable - all part of the scope of work for the contract.

Installed on the airfield were a variety of lighting systems including High Intensity Approach Lighting, Sequential Flashing Approach Lighting, Precision Approach Path Indicator, High Intensity Runway Lighting, outer threshold lighting, Movement Area Guidance Signs and Illuminated Wind Direction Indicators.

The project also includes fitout of a new Aircraft Lighting Equipment Room (ALER), which required the supply and

installation of 22 Constant Current Regulator control cubicles, 4 Surge Diverter Cubicles and associated interconnecting cables. Nilsen was involved in the design, supply and installation of a PLC based SCADA system for controlling the lighting and monitoring systems. Also installed was communications equipment including an optical fibre cable between the control tower and existing ALER centre.

Nilsen managed the supply and installation of all of this infrastructure and equipment, working to extremely tight deadlines of just 12 weeks, during which time the airfield was in continuous use by military forces from several countries. Project managers called upon Nilsen's broad range of expertise to meet those deadlines.

In the end, Nilsen's skilled engineers completed the project with enough success that the RAAF has since awarded Nilsen a further contract to



install Precision Approach Path Indicator systems at four other airfields around Australia - including Curtin (Western Australia), Edinburgh (South Australia), Scherger (Queensland), and most recently Townsville (Queensland).

Our continued success in providing RAAF lighting is testament to Nilsen's considerable project management expertise, and everyone involved in the team can be proud of what their teamwork has accomplished.

# South Australia

## Update

### Going green in Adelaide

Environmental awareness has become a major design factor in recent years, with cities like Adelaide using the green features of key buildings as important differentiators to lure businesses there. The city's 'Building Tune Ups' program is already focusing on environmental improvements to 10 city office buildings, and green features are a major component of the ongoing two-structure City Central Tower project currently underway in the CBD.

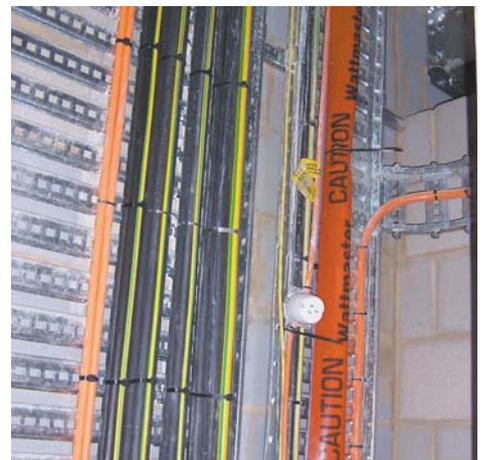
The \$115 million, 21-floor City Central Tower 1, due for completion in January, is the first new building to showcase the government-led push for greener buildings, and is the first 5-star Green Star certified project in South Australia.

Nilsen's contract, awarded by overall project manager Baulderstone Hornibrook, includes a range of power, switchboard, and lighting services including structured cabling for 2500 power points and specialist lighting such as downlights.

The Green Star design objective required extensive consultation with Nilsen environmental management experts, who provided essential guidance in installing and configuring the C-Bus lighting control system to minimise electrical usage. Efficient placement and dimming of lights ensured a steady flow of lower light level of around 320 lux, helping reduce the building's overall energy footprint significantly.

Green Star is all about energy efficiency, and from an electrical point of view that's about reducing the number of watts per square metre the building uses. Using the c-Bus equipment allowed the team to set each fitting in a bank of lights at a different level, and vary them to reduce usage. Such technology has been in the market for years, but it is becoming specified more and more because of the environmentally beneficial control it provides.

Nilsen's success with the City Central Tower helped it secure status as preferred contractor for the planned City Central Tower 2, which will soon begin construction.



Adelaide's \$115 million City Central Tower 1 is a watershed in environmental design, earning one of the city's first Green Star certifications for its innovative design. Nilsen's expertise in structured cabling design, light placement, c-Bus lighting and other elements made this environmental achievement possible.

# Powering the West

## Healthy expansion at RPH

Electricals were just the beginning of work for Nilsen at the Royal Perth Hospital (RPH), where construction of a new outpatient and dental building saw four full-time staff and a number of subcontractors working on a range of uncommon systems and technologies.

The project included lighting, power, and other relevant systems in patient, theatre, reception and other areas across the building. Security, communications, nurse call, master antenna TV, biodetection and emergency warning and information systems (EWIS) were all installed during the project, which ran from June 2005 through March 2006 and was supervised from Nilsen's Perth office.

Because the new facility was built as an adjunct to the existing RPH building, Nilsen and project manager Stantech had to manage the works with the public in mind. This involved the rolling installation and movement of safety equipment and barriers, since the new building is very much for the use of the public and a lot of working areas had to be very public. This meant that the Nilsen team had to manage safety requirements, erect



barriers and take other measures to ensure the public could still interact with the existing premises.

The unique nature of the hospital environment meant that Nilsen was also involved in special requirements to suit equipment such as x-ray and MRI machines, where potentially higher magnetism and radiation exposure

requires specific accommodations. This meant all RCDs had to be 10mA and 30mA, requiring body-protected areas and other accommodations during the work. Although this is a specialised capability, Nilsen's work on other hospitals meant the skills were easy to find inhouse and apply to the RPH project.

## Wired science at PLC

Nearly a year after it began, Perth's Presbyterian Ladies' College (PLC) is almost ready to move into its new Science, Arts and Technology building, a significant expansion to the prestigious institution's facilities.

The project began construction in January and is due to finish before the end of the year. Nilsen has been onsite since March, with four employees handling a broad range of installations for builder Budge Construction and consultants Rod Mackay.

The scope of work includes lighting, power, communications, fire and security systems, and future stages of the project will incorporate additional features. All will support an exciting new learning environment to provide significant value for the entire PLC community.



# Powering the West

## Solid as brick



Kiln 11, opened in May by Western Australian brick and paver giant Boral Midland Brick, is setting new operational benchmarks with a reduction in site emissions and an increase in production volumes.

The new \$53 million facility is capable of producing 50 million standard bricks per year, and when fully commissioned will replace Midland's smaller Kiln 4, which is 40 years old and based on aging technology. Kiln 11, by contrast, is widely

held to be one of the most technologically advanced brickworks, with a heavy emphasis on efficient operation and minimising environmental impact.

Working under Keller HCW, Nilsen was engaged for the design, installation and commissioning of the kiln's front-end works. These included the main switchboard; mother control centres; mains and submains cabling; fibre-optics and other instrumentation cabling; and CCTV systems used throughout the site.



A particularly significant part of the project was work with Keller on the assembly of the site's robotic construction plant, which saw up to 33 Nilsen employees spend more than 10,000 man-hours supporting the installation of the cutting-edge robotic equipment at the heart of the plant. Nilsen experts supported that work, as well as providing extensive support through a full-time project manager who ensured that the project was completed to Midland Brick's very tight timeframe.

## Wholly water



*A worker lifts the reverse osmosis racks into place at the Kwinana plant site. The racks house the membranes that filter the seawater.*

With 6.5 million square kilometres of coverage, the Water Corporation of Western Australia manages the largest area of any water corporation in the world. As part of the company's future expansion, the construction of a reverse osmosis seawater desalination plant, south of Perth, will provide 45 gigalitres of water – around 17 percent of Perth's annual usage – and will consume 202 GWh of power per year.

Over the course of the contract, Nilsen has been involved in providing a range of high-voltage electrical services for the Nicholson Road Pump Station, the largest pumping station Water Corporation of WA has ever built and one of the key related infrastructure components of the new desalination plant. When the project is completed, the Nicholson Road facility will be pumping water from the desalination plant to its destination across Perth and the rest of the region.

Throughout the project, a team of experts from various parts of Nilsen's

business have been involved in implementing a range of infrastructures across the new facility. This includes the supply and installation of conventional equipment such as variable speed drives, transformers and switchboards.

Nilsen High Energy specialists have also been involved, handling more complex jobs such as termination of high-voltage connections, while overall project responsibility and subcontractor management is being handled by Nilsen project management experts.



*Inside the reverse osmosis building shortly before work was completed on the roof.*

## Blue skies for Comet Bay

With technology more pervasive across education than ever, even your basic middle schools require more sophisticated installation capabilities than they used to.

At the new Comet Bay College in Secret Harbour, Western Australia, Nilsen has been engaged with builder Cooper & Oxley in the construction of a completely new school that will serve students in years 8, 9 and 10 commencing in February 2007.

The installation includes a full electrical fitout for the school's primary buildings, which include a performing and visual arts centre, administration and year 10 building, single-storey library, material

technology and café building, and two learning blocks for Year 8 and Year 9 students.

Apart from conventional switchboards, light fixtures and power points, however, the fittings across the school include a variety of specialised equipment: stage lighting and sound, intruder detection systems, a PA system, telephonic communications, a master antenna TV system, emergency lighting, and so on.

Five full-time Nilsen contractors are handling the work on site, as well as coordinating the work of numerous other subcontractors in the leadup to the school's opening for the 2007 academic year. Students spent 2006 attending a different primary school but will shift to the new facility after it is completed.



*In keeping with the many new technologies now used every day in schools, Secret Harbour, WA's newest school is riddled with A/V, electrical and communications cabling, as well as a host of specialised electrical systems.*

## CSI: Nilsen

The new forensic institute being constructed by the Western Australia Police Service will be a major new facility, with 1000 operatives set to occupy a premises filled with equipment at the cutting edge of police forensic investigation. Nilsen's engagement includes a full range of electrical and project management services at the facility, with the usual range of office space and car parking facilities, as well as unusual features including a helicopter landing pad; firing range; laboratories for finger print analysis, photographic imaging and ballistics; and a number of other specialised laboratories.



# Nilsen *people*

Our people, one of our key points of difference. On this page we like to recognise those who have joined and those who have achieved. It is our people that make Nilsen great. Again, some new appointments, some career milestones, some transfers and some promotions. As well, and very nice to see, there are some coming back, a very good sign indeed! Here are the latest:



**Melissa Douglas:** has transferred from Accounts Receivable and is now the Office and Contracts Administrator to the Switchboards Division, Victoria, and PA to Brian Steele and Carlo Baldo.



**Lexie Scott:** joins the newly separated Victorian High Energy Division as the "Nothing's too much trouble" Administrator. Helping the team achieve the goals they set.



**Evan Reid:** of Engineering Services, Victoria has undertaken the role of Power Quality Technician for the TEGG business. He is currently sitting his final exam to complete his A Grade. Good luck Evan!



**Andrew Hartley:** has recently joined the Engineering Services Division in Victoria as a TEGG Maintenance Sales Representative. He has had 20 years experience in the Sales industry. Welcome aboard, Andrew.



**John Rossi:** is employed within the Engineering Services Division in Victoria as a Field Services Supervisor & has been in the industry for 20 years. His experience & skills will be a useful tool in building up the Field Services Division.



**Peter Witt:** has been appointed as Operations Manager in the Victorian Contracting Division after working as Project Manager on various large projects with us for the past 4 years. Peter brings extensive experience and knowledge to this most important role within the Victorian operations. Well done Peter.



**Gary Dangaard:** returns to Contracting Victoria as Sales and Marketing Manager having worked for Nilsen in various states, starting as an apprentice in 1987. Gary now joins the Contracting team to maximize our opportunities to the business into the future. We extend a warm welcome back to Nilsen.



**Michael Bell:** joins our Victorian Contracting Division as Project Manager for the Traffic, GSM and Industrial area. He brings with him substantial experience within the electrical contracting industry. Welcome Mick.



**Graham Bone:** takes over the role as Divisional Manager at our Victorian Morwell Branch. Graham takes with him 4 years of experience as Operations Manager for our Victorian Contracting Division. Congratulations to Graham on his new appointment.



**Bill Farley:** returns to our Victorian Contracting Division as Traffic Supervisor, an opportunity for Bill to grow in the business and enhance the growth of our Traffic Section.



**Wendy Stainton:** has moved from our Victorian Communications Division to our Victorian Contracting Division as administrator, an important role supporting Management and Project Management within the Contracting Division. Well done Wendy.



**Scott Power:** has been appointed General Manager of Nilsen QLD and NSW.



**Harry Lemmens:** Construction Manager CSA.



**Sherrilyn Anderson:** Administration Manager CSA. Sherrilyn is a highly regarded member of SA's administration team.



**Matt Flaherty:** has joined the SA ESSA team in the TEGG Sales area.



**Jeff Owler:** as Division Manager NT, Jeff is looking after the top end for Nilsen.



**Paul Bradley:** started as an apprentice with Nilsen 25 years ago and has progressed to being a valued tradesman and member of the Nilsen team. He has outstanding commitment, is always willing to lend a hand and is respected throughout the company.



**Jack Walsh:** Division Manager, Contracting. Jack joined our Western Australian team in September 2005 and has been a big part of the restructuring in Western Australia.



**Ron Darlison:** previously a Test Engineer with Nilsen, he now returns to the Victorian High Energy Division as a Projects/Accounts Manager. Ron brings with him a world of HV experience in the industry. Welcome back Ron!



**Frank Proepster:** Frank has been with Nilsen for 25 years and is a valued member of the Nilsen team. He is one of our valued electricians, whose commitment to the Company is outstanding.



## KUDOS

**Tom Swan:** a fourth-year Contracting apprentice with Nilsen South Australia, won the PEERTEC Award of Excellence for Academic Achievement. Well done, Tom – show 'em how it's done!

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