

# 3-5 NATIONAL CIRCUIT

BOVIS LEND LEASE  
CANBERRA ACT



# NEPEAN ENGINEERING AWARDED FOR NATIONAL CIRCUIT

**N**epean Engineering has been awarded a Best Practice Award for their innovative redesign and installation of the link bridges on the 3-5 National Circuit project in Barton in the ACT.

Purpose-built for the Attorney General's Department, the project features 4 levels of office space and 2 levels of basement parking over several buildings linked by internal pedestrian bridges with an atrium space providing a central focal point.

Leading builder, Bovis Lend Lease, contracted Nepean Engineering to supply and install the plant rooms, lower roofs, parapets, atrium roof, internal link bridges and lobbies, exposed lift shafts, exposed internal stairs and the east and western airlocks. The entire project involving approximately 210 tonnes of fabricated steel.

To enable the exposed lift shafts to be erected quickly and efficiently, the structure was delivered to the site in sections each weighing 5.7t. The atrium roof involved two 1000wb beams, 25m long and each weighing 6.1t. These were installed by a dual lift using two hammerhead tower cranes simultaneously.

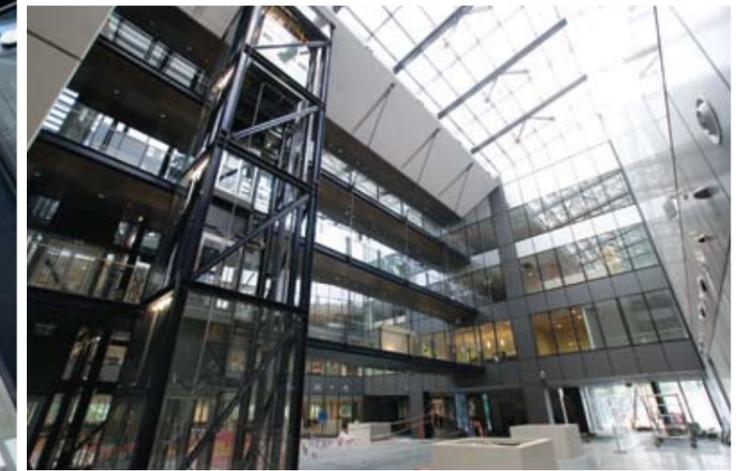
However, challenges arose with the exposed link bridges section of the job. The bridges were originally designed in 4 pieces. A design, which posed potentially dangerous height work during the installation.

Nepean Engineering redesigned the bridges into one piece (3 @ 16.5 x 2.5m), which was sent to the site with temporary handrails and the bondek preinstalled. The new design avoided potential for unsafe work practices and earned the company a Best Practice Award from Bovis Lend Lease.

The National Circuit project is another example of the 'can do' approach and innovative quality and excellence exhibited by Nepean Engineering since it was established in 1974. Nepean Engineering offers the full engineering service solution including design, fabrication and erection and has the skills, equipment, people and experience to successfully complete large scale construction projects

The company's 40,000 m<sup>2</sup> premises include large dedicated fabrication workshops which cater for a wide range of projects from light sheet metal work through to heavy plate and structural fabrication.

Nepean Engineering's fabrication capabilities include Construction and Design Engineering; Structural steel, Plate & Sheet Metal Fabrication;



Beam profiling utilising a state of the art Daito Seiki line; Laser Cutting; Painting, Blasting, Surface Treatment and Galvanising; Structural Rigging Services; Site Erection and Labour; Crane and Boom Lift Hire as well as Service & Maintenance.

Nepean Engineering is one of Australia's largest full service engineering businesses, providing sophisticated custom design and all facets of machining and tool making with accreditation to ASSDA, ISO 9001:2000, RTA NSW and Main Roads QLD.

Other major fabrication and erection projects completed recently by Nepean Engineering include the North Sydney Station Upgrade Project for Bovis Lend Lease, Deutsche Bank Place in Sydney, also for BLL, Goro Nickel-Vale Inco's, new US\$3.2b Nickel Mine in New Caledonia for which Nepean supplied around 800 tonnes of fabricated stainless and mild steel for the thickener mechanisms.

Nepean Engineering is the founding member of Nepean Group, Australia's leading privately owned, specialised engineering & industrial manufacturing group which includes VIS Service Automation, Nepean Conveyors, Nepean Mecco Conveyors, Inbye Mining Services, Nepean Plastic Moulding, MI Power, AGROWFLOW, Bliss-Fox, Nepean Site Services and the Graham Group.

A combination which gives the Group a diverse range of capabilities and products to customers in the mining, manufacturing, transport, aviation, agriculture, residential, commercial and industrial construction, and food production sectors.

Nepean Group operates in international markets in the USA, Canada, Europe, Middle East, Africa, Asia and Australia.

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# WHAT ARE THE BEST OUTCOMES?

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Davis Langdon proudly supported ISPT to achieve their cost objectives for 3-5 National Circuit.

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## HYGIENIC HYDRAULICS

Since commencing its ACT operations in 1988, commercial plumbing contractors A.Murray & Sons have worked on some of Canberra's most prestigious developments including the new Attorney Generals Department Building at 3-5 National Circuit in Barton for Bovis Lend Lease.

Part of the Murray Group of companies, which was originally founded in 1952, A.Murray & Sons ACT were contracted by BLL to provide the complete hydraulics installation on the 4 storey plus 2 basement level commercial office building which comprises 20,000m<sup>2</sup> of office space over two towers.

The works involved stormwater, sewerage, water and fire services including the stormwater detention and harvesting systems. The system involved the design and construction of holding tanks for the rainwater which is used to first service the toilets and then to irrigate the landscaping.

The interconnected nature of the hydraulics project required sophisticated planning skills and the company faced the additional challenge of adapting to the strict new OH&S legislation which was introduced by BLL on the National Circuit project.

A.Murray & Sons employed 9 tradesmen on the 18 month project, representing just a small portion of the 130 tradesmen and 21 apprentices employed throughout the regions by the parent company, the Murray Group.

The Murray Group of companies offers a range of hydraulic services including Sanitary Drainage Systems, Stormwater Drainage Systems, Domestic Hot, Cold and Warm Water Systems, Natural and LP Gas Systems, Hot Water Heating Plant and Reticulated Systems, Fire Hydrant and Hose Reel Services, Pumping Systems, Tradewaste Treatment Systems and Services, Stormwater Detention and Harvesting Systems, Sanitary Fixtures and Faucets, Design and Coordination and Syphonic Drainage for new constructions, refurbishments and design and construct contracts.

The ACT division's recent projects include the University of Canberra Student Accommodation, Glebe Park Apartments, Section 84 Precinct 'C', the Royal Australian Mint, ANU Unilodge, Canberra Glass Works, the Metropolitan Apartments and ANZAC Park West Offices.

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## NATIONAL CHALLENGE FOR MULTISYSTEM

The fitout for the Attorney General's Department at 3-5 National Circuit posed a technical challenge for MultiSystem Communications due to the new types of cabling product which were required for the installation.

MultiSystem Communications (MSC) installed an AMP Net-connect fully shielded category 7 Class F cabling system on the project which consisted of Optical Fibre Backbone cabling and over 143,000 metres of Shielded Copper Cabling.

The scope of the work was extended to include: data wiring for a fibre optic secure red network including backbones, vertical and horizontal cabling to MPO boxes above desks, horizontal cabling from MPO boxes to desk outlet; 12 core multi mode (OM3) fibre from basement secure racks to each of the secure rooms; data wiring for fibre optic network, including backbones, data racks and MPO boxes using LC

connectors; data wiring for Category 7 protected network, including data racks, horizontal cabling and MuTOA's/ data jacks; data racks for communications rooms, typically 3 off per communications room; data racks (Class C) for BD rooms, typically 6 off per BD room; provision of patch leads and fly leads to quantities specified CATEGORY 7 with ACO or standard Category 7 type jack and an extension of the master antenna television system to selected points within the building.

The company worked closely with Bovis Lend Lease and AMP Net-connect technical advisors to ensure that the AMP ACO cabling product was installed in accordance with client specifications. The system, an extremely modern and flexible cabling solution, is a High-Performance Multiservice / Multimedia Office cabling product that allows the Attorney General's Department to change media interfaces on faceplates to run specific media or data applications.

The success of this highly challenging project is further evidence that MSC possess the knowledge, expertise, and management skills required to undertake Data and Voice Cabling work of any size and complexity.

Formed in 1993 by two experienced ACMA licensed persons with over 40 years experience, MSC specializes in structured communications cabling systems for Government, Defence and Corporate sectors. The company undertakes a wide variety of projects from extremely large office buildings to smaller offices, using Cat5, Cat6, Cat7, copper cabling systems, fibre optic cabling and blown fibre optic technologies.

MSC offers a comprehensive range of services including Consultation, Design, Product Selection, Design Implementation, Project Management, Installation, Testing and Maintenance of Structured cabling Systems. Their technicians are all ACMA licensed, several have undergone

rigorous security checks and some have Defence clearance, allowing MSC to provide services in the most sensitive and secure Government, Defence and corporate environments.

MultiSystem Communications would like to congratulate Bovis Lend Lease on the completion of this innovative and challenging project.

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## AG BUILDING GETS COMPLETE CUT

The new Attorney General's Department Building at 3-5 National Circuit in Barton, ACT received a 'complete cut', courtesy of concrete cutting operators, Complete Cut. Based in Canberra, Complete Cut specialise in concrete cutting, drilling and sawing utilising the latest technology and state-of-the art equipment.

Equipment which includes hydraulic cutting saws that can cut up to 920 mm thick. Advanced equipment that gives Complete Cut an edge over the competition by allowing them to complete even the most complex projects.

The 3-5 National Circuit building includes 4 levels of office space and 2 levels of basement car parking and Complete Cut provided services throughout construction from the initial stages on the basement slab through all 6 levels.

The scope of the work involved all aspects of cutting and drilling concrete including the drilling for plumbing and electrical services, access ways and hand-rail holes. Cutting trenches with concrete up to 680 mm thick using a 74 HP Diesel Road Saw and penetrations 850 mm thick concrete using a Hydraulic wall saw. As some work had to be carried out inside the building, Hydraulic sawing and the all new Electric 3 phase Roadsaw had to be used so there was no petrol fumes in an enclosed area.

Complete Cut is the largest concrete cutting operator in the Canberra area, with over 13 years experience and a highly skilled team of 6 operators, the company has developed an enviable reputation through their professionalism and high quality workmanship on several large projects. The company's most significant recent projects include the Metropolitan Apartments for Hindmarsh, the refurbishment of Anzac Park West (ACT), Section 56 and 84 (ACT) and the Sydney Hotel in Barton.

Under the leadership of Duane Clark, Complete Cut are committed to retaining and advancing their edge over the competition with investment in state of the art technology and equipment and further development of their highly skilled workforce to give even more projects a 'complete cut'.

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## CPS CONQUERS CHALLENGING CIRCUIT

CPS Concretors have built a strong reputation on their ability and willingness to adapt their operations to challenging project designs and this was clearly evident in their successful completion of the concreting work on the new Attorney General's Department building at 3-5 National Circuit in Canberra's Parliamentary Triangle.

CPS was contracted by Bovis Lend Lease to carry out all concrete works on this large 40,000 m<sup>2</sup> floor area project. This involved the concrete place and finishing for all the slabs, piers, columns and link bridges over the 6 levels.

The company supplied the labour to place and finish the concrete and completed the job using concrete pumps owned by their associate company, CPS Concrete Pumping.

The distinctive design of the complex includes pedestrian bridges linking the individual buildings and CPS Concretors faced the challenge of pumping concrete to the link bridges while the buildings were partially finished. They adapted their operations with precision

positioning of their mobile concrete pumps and particular attention to the sequencing of the pours to overcome the difficult situation.

This proactive approach to adapting to developments in building design, embracing new technology and intensive staff training over a 40 year period, has elevated CPS Concretors to a pre-eminent position within the ACT building industry. They fully understand that systems and processes can be duplicated, but experienced and dedicated staff are very hard to replicate.

The company utilises the latest in technology and processes and places a high priority on staff training to ensure they retain their highly skilled staff and their reputation for expert service and quality workmanship.

CPS Concretors are also currently working on the new Terminal at Canberra International Airport and the Crawford School at ANU for Construction Control Holdings, the Section 68 Co-Lab for Boulderstone Pty Ltd and Kangara Waters at Belconnen for St Hilliers Contracting.



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# TITAN SHOWS STRENGTH



Titan Cranes and Rigging have proven they are a power in the industry by adding the 3-5 National Circuit Canberra project to their growing portfolio.

A specialist equipment hire company, Titan provide a unique one stop crane hire company, supplying expertise and personnel for all facets of crane hire including erecting, commissioning, dismantling, engineering and servicing of tower cranes.

Titan are the local agent for JASO and introduced Australian construction to state of the art electric hammerhead style cranes from the small city class J52NS to the J300 with a tip capacity of 2.7t @ 75m.

Their new acquisitions include the J600-20T with a maximum jib tip capacity of 5.4t @80m and a free stand of 88m on standard towers of 2.4m2. This crane is being used to place large pre-cast concrete panels on difficult access sites and features no expensive servicing costs, uses

no fuel and has minimal environmental issues. Titan also acquired two new Jaso J180PA-2R electric luffing cranes, which boast incredible hoist speeds and ergonomic designs.

Operating only since 2001, Titan Cranes have already shown their strength on projects including the Sydney Desalination plant, Sydney Museum development, The Prime Minister's Cabinet Building, Novotel in Canberra, The Ark and Tallowa Dam.

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# REGEMADE GOES 'NATIONAL'



With several high profile ACT and NSW projects already in their portfolio, Regemade Cranes and Rigging can now include a 'national' project in their credits - 3-5 National Circuit.

Regemade Cranes and Rigging specialises in general crane hire and precast concrete and structural steel erection and is highly regarded by many leading precast manufacturers, builders and project managers throughout the ACT and regional areas.

Based in Queanbeyan and servicing the ACT and NSW, this family owned and operated company provides all types of rigging, plant and equipment transportation as well as casual and long term hire of mobile cranes.

Regemade was contracted by Bovis Lend Lease to provide the installation of the precast concrete and general crane hire requirements for the new Attorney General's Department Building at 3-5 National Circuit in Barton, ACT.

The project required extensive planning and coordination between Regemade and the Bovis Lend Lease project team throughout the construction period and once again highlighted why Regemade is the preferred supplier throughout the region.

Servicing the industry for over 16 years Regemade has built up a high quality fleet of equipment comprising a wide range of cranes and trucks, supported by a team of well-trained operators and project management staff.

Other recent high profile projects completed by Regemade include the Department of Defence Russell Offices, ACT Magistrates Courts, the New Parliament House impact barriers, the new annex and retaining walls at the Australian War Memorial, Lanyon and Gungahlin Market Places and the Lake Burley Griffin foreshore development.

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# ECS® SECURES NATIONAL PROJECT



With a system which is Tried, Tested and Proven on many and varied sites, ECS International was well equipped to provide Security Management Services on the 3-5 National Circuit project in the nation's capital.

The ECS® Site Access and Security Management System was installed to control access to site and to provide reports detailing sub-contractor productivity. In addition, site security personnel were provided, including Security/Traffic Control and First Aid Officers.

The ECS® Security Management System is based on future-proof modular LAN technology where each component can be added on as required giving the system significant cost benefits with the flexibility to be moved, re-arranged, expanded or even de-commissioned and re-installed at another location. The Modular system is designed for centralised processing of data but allows access control modules to continue to operate if connectivity is lost. Wireless equipment is available for applications where cable runs must be minimised.

The National Circuit project involved both wired and wireless security control modules configured for access control purposes together with a computer based programming and interrogation system to provide trained but otherwise non-skilled personnel the ability to both update the system as new sub-contractors/employees are engaged and produce detailed reports for safety and auditing purposes. ECS® customised the system reports to suit the Bovis Lend Lease specifications and individual site requirements.

The system has been proven on a number of sites including Bovis Lend Lease Top Ryde Shopping Centre (NSW), Bovis Lend Lease Rouse Hill (NSW), Bovis Lend Lease Jacksons Landing (NSW), Bovis Lend Lease

AHM Wollongong, Hindmarsh Group Vantage (ACT), Hindmarsh Group Australian National University – Wes Whitton (ACT) and Hindmarsh Group Australian National University – Colleges of Science (ACT).

From their offices in Sydney, Canberra and Suva, ECS® International provides efficient and professional services in all aspects of Security and Investigations. Their offer a comprehensive range of services including Security, Occupational First Aid, Traffic Control and Concierge personnel; Dog Handlers; Armoured & Armed Cash-in-Transit; CCTV; Access Control; Building Automation; 24 Hour Monitoring; Site Telephone and Nurse Call Systems; Risk Management and Consulting; Drugs and Explosives Screening at the workplace.

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## GOT IT COVERED



A 500 m<sup>2</sup> glazed section and a 1,000 m<sup>2</sup> atrium space has created a distinctive roofline on the new Attorney General's Department building at 3-5 National Circuit at Barton and another interesting project for award-winning roofing specialists, Delnas Metal Roofing.

Delnas was contracted to provide services for the 3,800 m<sup>2</sup> roof of this four level commercial building and used a number of new technologies and materials, including the locally manufactured King Span insulated panels.

The pre-engineered King Span products are particularly effective as they provide a roof and ceiling in one, require less framing and steel work than many other products, reduce build time by up to 50% and as such, offer a cost effective solution to builders. The King Span insulation panels were also used on the walls of the two plant rooms and the atrium and the combined insulated roof and wall system is expected to reduce energy use on the building by up to 60%.

Based in the ACT, Delnas Metal Roofing has been providing quality metal roof sheeting and wall cladding installation services to commercial and domestic projects in the Canberra area for over 15 years and has received numerous awards and acknowledgements from industry bodies including the MBA and HIA for their quality workmanship and innovation.

Recent projects for the company include the National Portrait Gallery, the DFO Canberra project, ANU Student Accommodation, Anzac Park West, Discovery House, the AIS Aquatic Testing and Training Facility. Delnas Director, Daryl Leishman, readily acknowledges that retaining good staff is one of the challenges facing Australian construction companies and he is proactively addressing the issue.

Delnas Metal Roofing is committed to developing and retaining its trades people, especially the apprentices through training and other strategies, to ensure the company is well equipped to handle even the most innovative roofing projects well into the future.

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