



concrete

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Sustainable building design on Wellington Waterfront

A revolutionary new \$29 million retail and office complex taking shape in the Kumutoto Precinct of Wellington's waterfront promises to set the standard for ecologically responsible buildings of the future. Believed to be the first truly "green" commercial building to be built in New Zealand, the sustainable design philosophy behind the Kumutoto Site 7 building is making extensive use of concrete's thermal mass properties.

The brief for an aesthetically stunning building using Environmentally Sustainable Design principles (ESD) was set early in 2004 by Wellington Waterfront Ltd for building designers Studio of Pacific Architecture. Now owned by Dominion Funds and under construction by Fletcher Construction, with the fitout by Warren & Mahoney, the Kumutoto Site 7 sustainable building concept is very much in-sync with the brand of its signature tenant – Meridian Energy.

One of New Zealand's largest electricity generators, Meridian Energy is a leader in sustainable development, as evidenced by its commitment to only using renewable sources of generation to meet the country's growing energy demands.

In December 2004, Meridian Energy identified the need for a larger premise, and initiated a project to develop office accommodation that met both its immediate and long-term operational needs and which reflected its commitment to renewable energy and sustainability.

The Meridian Energy building planners have adopted the ESD principles as a means to ensure the building meets a range of sustainability considerations throughout its entire life cycle. Not only is a comfortable and productive working environment a prerequisite, but waste minimisation and a reduction in energy and water use have also been sought, along with the use of eco-friendly building products.

To help achieve the ESD objectives that will ensure the Meridian building is designed to respond to and utilise external environmental conditions, and is designated a "green" building, planners have referred to the Australian Green Star office building-rating tool.

An advisory group, comprised of leading professionals, has also been established, with responsibility for developing a building performance specification with measurable criteria for a multitude of design and performance elements, all within an ESD context. By incorporating the building performance specification in the development agreement, all parties have been able to clearly understand not only Meridian Energy's objectives, but also how each individual requirement contributes to the ESD philosophy.



The Kumutoto Site 7 building on Wellington's waterfront under construction.

The four-storey (18 metre high) Meridian building's L-shaped configuration is specifically intended to create a sheltered north-west facing Kumutoto plaza that will seamlessly connect to the Kumutoto Precinct via an enclosed thoroughfare. The lower floor (5.3 metres high) has been designed as a retail space, and is dominated by glass walls that provide uninterrupted views through the building to the harbour, or back towards the Kumutoto Plaza. The striking saw-tooth roof integrates the overall building with the surrounding structures on the wharf. However, it is the top three floors, comprising the Meridian Energy office space, where the building's true ESD credentials come to the fore.

The designers' efforts to optimise energy use and comfort all year round have included extensive use of natural light and ventilation, as well as insulation. Solar gains are controlled by active shading systems which use external louvres and interstitial blinds within glazed facades, while photo sensors control the blinds and motorised louvres. The air supply is sourced entirely from outdoors, meaning the primary ventilation is provided by natural means. These innovative features are integrated into an overall passive design through the thermal mass properties of the building's concrete shear wall core and other exposed concrete surfaces.

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Upfront...



Patrick McGuire,
CEO.

Welcome back to the start of a new year. We hope you had an enjoyable and refreshing Christmas and holiday break with your family and friends.

2006 was a great year for the Cement and Concrete Association of New Zealand (CCANZ) and 2007 is already shaping up to be equally as busy, and even more challenging.

CCANZ held an Annual Planning Workshop (APW) earlier in the month to plan the strategic direction of the association over the next 3-5 years. The APW forums have become a cohesive force in unifying the industry's strategic vision and the recent workshop provided the basis for the CCANZ Integrated Business Plan 2007-08. Projects that focus on growth and sustainability are again top of the agenda.

CCANZ aims to raise the profile of the industry with government and the wider sector, and to continue to proactively identify opportunities to comment on significant issues when they arise. It is vital for CCANZ to continue liaising with and providing detailed submissions to the Department of Building & Housing (DBH) regarding changes to the Building Code, and the new Practitioner Licensing and Product Certification regimes. It's important that we make our sector's stance and opinions on these issues known to key industry players, politicians and government officials.

Sustainability will continue to be a major focus for CCANZ this year. For both economic growth and the environment, a shift in the New Zealand psyche from short-term "green"

thinking to a long-term "sustainable" view is essential. The association will be promoting the use of materials such as cement and concrete in future building projects to achieve sustainable development. In this issue of *Concrete*, we take a look at both New Zealand and international projects that are promoting the growth in cement and concrete use for sustainable development.

In other news, CCANZ's project manager, Dene Cook, is leaving us shortly to take up a position with Firth. Dene has been with CCANZ for eight years and in this time has made a significant contribution to the association and industry with his knowledge and leadership in structural engineering. He will be sadly missed at CCANZ. However, we're pleased he will remain in the industry where he can continue to contribute to selected CCANZ projects for the benefit of all parties.

Fellow CCANZ project manager, Rob Gaimster, will take over as Executive Officer of the New Zealand Ready Mixed Concrete Association. Rob has been with the association for a few months now and has already made his mark. He's looking forward to developing strong industry relationships even further.

In other news CCANZ has taken on the secretariat role for the Masonry Trades Registration Board. This is an interim measure until the formal licensing of building practitioners is taken over by the DBH. CCANZ is pleased to assist the industry in this area.

We look forward to working closely with you all over the next 12 months in helping to grow the industry and encouraging the use of cement and concrete in sustainable projects throughout New Zealand.

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The designers of the Meridian Building were aware that concrete walls, columns and floors have the capacity to store and release heat. This function has the effect of regulating the internal environment by reducing and delaying the onset of peak temperatures, to create healthy working environments for the occupants, and reduced energy consumption costs for building tenants and owners. This role can be fulfilled cost-effectively if the concrete utilised is already part of the building's structural component. The effect is referred to in New Zealand as the thermal mass advantage, while overseas the preferred term is fabric energy storage.

The operational costs of heating, ventilation, air conditioning and lighting for any commercial structure are significant. Due to poor design, a recent trend in office buildings has been the substantial growth in cooling requirements brought about by the increasing use of electronic equipment, together with uncontrolled solar gain. This has led to a significant increase in power usage for the refrigeration plant, pumps and fans necessary to maintain a "comfortable" environment. Ironically, this growth in power demand for cooling purposes has been occurring at a time of heightened awareness of issues such as the link between greenhouse gas emissions, global warming and climate change. Utilising concrete's ability to absorb, and later release, large amounts of heat to minimise temperature fluctuations can offset this situation. This moderation of temperatures results in a building that is simply more comfortable and healthier to work in, both in winter and summer.

The use of exposed concrete as part of an integrated passive design to achieve low energy thermal comfort has been widely used in commercial offices throughout the UK and Europe. With the Meridian building's focus on ESD, and its profile at the forefront of sustainable building design, the understanding and appreciation of concrete's thermal mass properties should increase within New Zealand.

In addition to the target of using 60 percent less energy, the Meridian building planners also seek to reduce the large percentage of landfill waste generated by the construction industry. This will be achieved through precise inventory monitoring and an emphasis on recycling. Another sustainable performance aim of the Meridian building is to achieve a 70 percent reduction in water usage through the collection and recycling of rainwater, along with water efficient sanitary-ware.

Scheduled for completion in September 2007, the Meridian building will create a new environmental performance benchmark for New Zealand commercial buildings. To fully realise the objectives of their sustainable design philosophy, the building's planners have looked towards concrete's thermal mass as the ideal mechanism to reduce reliance on artificial energy systems and ensure a healthy and productive office-working environment.

Sources: Munn, C. (2004). Fabric energy storage - energy efficiency in commercial structures. *Concrete*. 48(2), 1-2.

People News...

Dene Cook moving on to Firth



Dene Cook.

After eight years at CCANZ, project manager, Dene Cook is moving on to begin a new role at Firth as National Technical Manager.

Before joining CCANZ in 1999, he was a principal with Montgomery Watson. Based in Christchurch, Dene, a leading structural engineer, has enabled CCANZ to maintain close and proactive contact with South Island stakeholders. He has provided on-the-ground technical advice and support for CCANZ on a daily basis and has been instrumental in identifying key barriers to the use of concrete and areas for further research.

As a CCANZ project manager, Dene has been the cement and concrete industry's representative at the Structural Engineering Society New Zealand (SESOC), as well as Executive Officer of the New Zealand Ready Mixed Concrete Association.

He was also elected a Fellow of the Institution of Professional Engineers New Zealand (IPENZ) for his advancement of engineering practice; specifically recognising his contribution to the development of standards for concrete construction.

Dene has played a leading role in the preparation and delivery of submissions on structural issues and chaired the NZS 3101 Concrete Structures Standard Technical Committee. This was a substantial task, performed in a most professional manner.

Dene's depth and breadth of knowledge of all things related to structural concrete is matched by his personable and approachable manner – traits immensely appreciated by those who have attended the numerous seminars he has presented.

CCANZ would like to congratulate Dene on his new role and thank him for the invaluable contribution he has made and his dedication to the association and the concrete industry.

Rex Williams to retire



Rex Williams.

Jeremy Smith will become managing director of Holcim New Zealand on 1 June 2007. Jeremy joined Holcim in December 2000 and has held senior management positions in both the lime and cement divisions. He has been general manager of the cement business since 2003.

Jeremy will replace Rex Williams, who is retiring after nine years in the job, and 27 years at Holcim New Zealand Ltd. CCANZ would like to thank

Rex for his involvement with the association over the years, and especially for his time as chairman of the board from 2004-2006.

Final goodbye to John Linton King



Linton King.

CCANZ would like to express its sadness at the death in January of Linton King, aged 86, after a long battle with cancer. Linton's immense contribution to the ready mixed concrete industry, and the wider construction industry, was matched by his passionate involvement in local community affairs.

Linton has been described as a personable, loyal, trusting person, who enjoyed interacting with people in both business and social environments. Outside of work, Linton was an accomplished cook, and possessed an interest in fine wine. Gardening was another of Linton's passions, one that he pursued with his customary enthusiasm.

A veteran of World War II, Linton went on to build an extremely successful business career, and was the managing director of the King Group of companies for 40 years. During this time he oversaw the expansion of the Takanini and Papakura arms of the enterprise into the areas of road transport, courier vans, glass recycling, refuse disposal bins, sand recovery and building supplies. Another of Linton's major achievements in business was the development of the Wiri ready mixed concrete business. Begun in 1965 with two mixer trucks and a batching plant, the Wiri plant grew into an extremely efficient and competitive operation.

Linton was an active member of the South Auckland community, sitting on numerous business and council boards, and committees over many years. He was president of the Franklin Road Transport Association and Auckland Ready Mixed Concrete Association, served on the council of the Auckland Employers Association, and was a life member of the Papakura RSA.

Linton's contribution and accomplishments in all his areas of endeavour were recognised with a Queens Service Medal for Public Service in the June 2000 Queen's Birthday Honours.

Linton's industry experience, along with his approachability, generosity of spirit and concern for the community, will be greatly missed by all.

On behalf of the entire cement and concrete industry, CCANZ would like to extend its sympathies and best wishes to Linton's family at this sad time.

Functional simplicity in building

Worldwide Parking Group Ltd has developed an innovative precast concrete system for car parking buildings around New Zealand that is offering a range of benefits - from design versatility and speed of assembly, through to the potential for re-use on other sites.

The precast concrete system's most striking feature is the patented demountable connections, which mean that at any given point in the future, the structure's standard components can be dismantled and removed from the site for storage or re-erected on another site.

Ken Pettigrew, Project Manager for Worldwide Parking Group (NZ) Ltd, says the technology refines established multi-storey, precast concrete technology by incorporating patented seismic connections and foundation systems, new concrete mix designs, reinforcement and casting techniques. Rationalising component sizes has also led to efficiencies in cost and planning.

The system uses standardised precast concrete structural components that are assembled without the need for poured or welded connections, utilising patented reinforcement and connections. Innovation in the design of services, structural framework, fixtures, fittings and equipment, also make it possible to achieve rapid and orderly construction.

The precast concrete system was used in the construction of the recently completed Nuffield Street car parking building in Newmarket, Auckland. The building has four levels, and can accommodate up to 350 cars, with provision to add more car parks through the addition of another floor.

The car parking building has about 320 components, manufactured offsite by Stahlton Prestressed Concretes, Wilco Precast Ltd and Stresscrete. The components include columns, spandrels (which support the floors and act as handrails), and 18-tonne double-T floor pieces, measuring 2.5 metres wide and 16.7 metres in length. The simple design revolves around the placing of the spandrels in rebates on the columns, with the double-T beams sitting over, and being bolted to, the spandrels.

During assembly, a series of site-related challenges were encountered. However, the building system's flexibility enabled alterations to be made to the standard components in order to successfully complete the project on time and within budget. These challenges included the removal of a corner of the structure to clear an existing building, column reorientation to suit ground floor traffic flow, and customisation of the foundation design to avoid existing ducts and building foundations.

Waikato Cranes assembled the components over a six-week timeframe. The short assembly period enabled upgrade works on other areas of the site to be carried out independently and without causing disruption to the car parking building.



Assembly of Worldwide Parking Group Ltd's car parking building at Auckland Airport.

The Nuffield Street car parking building is the third Worldwide Parking Group system project completed in New Zealand, following the construction of two new domestic terminal car parking structures at Auckland International Airport (see *Concrete* September 2005). The airport was seen as an ideal location to showcase the system's advantages as the buildings can be dismantled and re-erected if the airport's expansion plans require it.

The first domestic terminal car parking building was completed in April 2004 after a three-month construction period and is a single storey structure for 300 car parking spaces. The first building has performed well and led to significant developments in the precast concrete system, which has been seen in the construction of the second domestic terminal car parking building – a four-level 7,500m² structure, designed to accommodate 850 cars, built from bare site to occupation in less than six months.

The airport authorities planned the second car parking building to be a premium facility that commands higher tariffs. To achieve this, many enhancements have been added to the base building, such as a roof, pedestrian bridge to the terminal, protective louvres, and retail facilities on the ground floor.

Ken Pettigrew says the innovative precast concrete structures on show at Auckland International Airport and Nuffield Street in Newmarket will become a more familiar sight as specifiers become increasingly aware of its life-cycle cost advantages. Pre-engineered standardised concrete components ensure a low initial cost outlay, fast assembly, early occupation, minimal maintenance and potential reuse – all benefits which are attractive to a construction environment particularly concerned with sustainability.

Sources. Searle, M. (2006). Assembling a giant jigsaw. *Contractor*. 30(7), 8. Worldwide Parking Group. <http://www.worldwideparkinggroup.com>

Cook's Clinic... The importance of curing

Almost without exception, technical specifications call for concrete to be cured. However, the process is not always undertaken correctly. In this article, we explore the importance of curing concrete.

Why cure concrete?

Curing is the name given to procedures that promote the hydration of cement. This article will focus on the control of moisture movement, although temperature control is also needed.

When water is added to cement a complex chemical reaction occurs which hydrates the cement and then in time produces a firm, hard mass. This reaction continues when water is present. If the water is removed, the reaction stops, which results in the cement being only partially hydrated.

Concrete is therefore cured to control the rate and extent of moisture loss during cement hydration.

What are the advantages?

Moisture-loss from the surface of concrete has the potential to impact on the strength, durability, and early age cracking of concrete.

The strength of concrete is predominantly determined by the water/cement ratio and the degree of hydration. If premature drying occurs, the hydration process will stop and the desired strength of the concrete will not be attained. To appreciate this, it's useful to visualise the chemical reaction of cement and water as a process whereby thin needles begin to grow out of each grain of cement after water is added. As these needles grow they become intertwined and it's this interlocking process that gives concrete its strength. If the water dries up, the needles stop growing and less intermeshing occurs, resulting in loss of strength.

Therefore, inadequate curing can result in a weak concrete surface, which may wear under the abrasive action of traffic.

Curing will also impact on the ability of the concrete



Process of curing concrete. Image courtesy of Portland Cement Association (PCA).

to protect the reinforcement from corrosion. The greater the time water is present, the more intertwined the cement needles will become and the denser the concrete cover will be. This will make the concrete cover more watertight, and will increase the time it takes before the conditions around the reinforcing bar cause corrosion.

Another important feature of curing is its impact on the potential for early age cracking, which occurs when tensile stresses in concrete exceed its tensile strength. Tensile stresses can develop in the surface of concrete when the top dries and starts to shrink, while the saturated core of the concrete resists against the surface. If curing doesn't commence as early as possible, moisture can escape from the pores of the concrete that are near the surface. This creates negative pressure in the capillaries, causing the solid particles to draw closer together (shrinkage). If curing prevents moisture escape, surface shrinkage will be avoided and the concrete is given the chance to gain some strength with time.

What are the options available?

Methods of curing concrete fall broadly into the following:

- Those that minimise moisture loss from the concrete by covering them with relatively watertight membranes
- Those that prevent moisture loss by continuously wetting the surface
- Those that keep the surface moist and raise the temperature of the concrete.

Which is best?

This depends on the project, however a few things to keep in mind are:

- If using water curing, the surface must be kept continuously moist by alternate wetting and drying which can result in increased surface crazing. Ensure that runoff water doesn't enter streams or the storm water system as it may have an adverse effect on aquatic life
- Curing with polythene may result in some discolouration of the surface. The effectiveness of this curing method is greatly reduced if it's not kept securely in place
- Membrane curing compounds may not be compatible with subsequent coverings. They can also exist on the surface for a long time meaning it may take time for the slab to dry sufficiently to apply adhesives and surface coverings such as vinyl. There is also a finite window of application, typically when the bleed water is no longer rising to the surface.

Cement stabilisation – a new approach

The use of Hydrated Cement Treated Crushed Rock Base (HCTCRB) has become increasingly popular in Australia over recent years. In late 2006, the Cement & Concrete Association of New Zealand (CCANZ) in association with PaveSpec Limited, led a study tour to Western Australia to view the manufacture and use of HCTCRB and to see how it could potentially be applied within New Zealand to improve the longevity of our roads.

Due to the poor performance of Crushed Rock Base (CRB) on various roads within the Perth metropolitan area, a full-scale trial was commenced nine years ago by the state's roading authority, Main Roads Western Australia (MRWA), to investigate ways of improving stiffness and reducing moisture sensitivity of CRB.

The project revealed that the addition of a small amount of cement to CRB significantly improved resistance to deformation when wet. It also revealed that the cement could be added while the CRB was still at the quarry, which enabled hydration to occur during a stockpile period of seven days. The HCTCRB was then turned over, loaded on to trucks and laid in a similar manner to normal crushed rock base.

The manufacture of HCTCRB is primarily carried out at two quarries in Western Australia, with each adopting a slightly different approach.

- One approach involves adding 2% cement to 28mm crushed rock base, and mixing in a pugmill. Water is added as required. The HCTCRB is then stockpiled for a day, moved, and stockpiled for a further seven days, before being used for construction. The “shelf-life” of the material in the second stockpile is 90 days. Approximately 5% of low Plasticity Index (PI) clay is also added to both normal CRB and HCTCRB. The clay improves workability and cohesion, holds added moisture, and aids compaction.
- The other approach involves producing HCTCRB in a similar way, except clay is not added to the CRB. Concrete Waste Road Base (CWRB) is also produced in Western Australia. Waste concrete is collected from nearby ready mix plants and is then mixed with CRB. Concrete waste (25%) is blended with CRB (75%) by spreading the waste concrete below a quarry face, blasting the face, and then mixing the waste concrete and crushed rock blend in a pugmill. Sometimes a small amount of additional cement is added during mixing.

The technique of adding cement to CRB and stockpiling it for hydration to occur has resulted in improved pavement resistance to deformation when wet. Other advantages include the absence of time constraints in terms of pavement layer construction, and the reduced risk of the material becoming excessively stiff and cracking.

Transit New Zealand has expressed interest in this method of adding cement to a basecourse aggregate to improve its resistance to deformation/rutting. The Transit



Production of Hydrated Cement Treated Crushed Rock Base (HCTCRB) in Western Australia.

New Zealand Supplement to the Austroads Pavement Design Guide classifies the HCTCRB manufactured in Perth as a modified aggregate. Modified aggregates are recommended in the New Zealand Supplement for use in high traffic volume state highways as an economic alternative to structural asphalt.

Transit New Zealand has also identified that an opportunity exists for using lower quality aggregates that previously failed to meet its specifications. The modification of lower quality aggregates through the addition of cement will improve performance, therefore permitting their use.

An indication of Transit New Zealand's interest in cement stabilisation is that a Repeated Load Triaxial (RLT) test has been developed to thoroughly assess HCTCRB's suitability. Based on recent research by Dr Greg Arnold of PaveSpec Limited, multi-stage RLT tests are used to obtain deformation curves for a range of stress conditions to develop models for predicting rutting. The tests also help determine the suitability of aggregates, modified or otherwise, for use in high, medium or low traffic volume roads, in either wet or dry conditions.

The outlook for customised cement stabilisation solutions in New Zealand appears positive, with the potential application of HCTCRB technology enhancing the longevity of the country's roads, while reducing stiffness and moisture sensitivity.

The Cement & Concrete Association of New Zealand would like to thank Dr. Greg Arnold of PaveSpec Limited for his contribution to this article. A report on the Western Australia study tour, with accompanying video footage, and MRWA reports (incl specifications) are available by contacting CCANZ (library@cca.org.nz).

Concrete roads for low speed, high stress applications

Transit New Zealand's concrete road construction programme is demonstrating that concrete is an effective option for use in road pavement sections in low-speed, high-stress environments.

Concrete pavements are often used on industrial pavement sites within New Zealand that have high volumes of heavy traffic, but the initial cost on the public roading network has meant that bitumen-bound materials are preferred.

There are many sections of the State Highway network in which sharp corners, especially at grade, fail as a result of the severe lateral stresses created by heavily loaded vehicles with challenging axle configurations traversing tight curves. The mechanisms of failure in such cases are well known, and repair work on these bitumen-bound surfaces often has to be repeated following subsequent failure.

Short sections of concrete pavements through these high-stress areas can provide a long-term solution with minimal maintenance. Therefore, Transit New Zealand is trialling short concrete road sections to take advantage of the superior strength and robustness of concrete, especially in heavily trafficked areas. These trials are intended to confirm the economics of the higher initial capital investment, and enhance understanding of the construction and performance issues.

The Peanut Roundabout in Napier is an example of a trial site that is part of Transit New Zealand's programme. This section of State Highway 50 carries most of the fully laden trucks bound for the Port of Napier and has a history of surfacing distress due to the tight curvature and high volumes of heavy vehicle traffic. About 5000 vehicles a day use the roundabout, with 20% being heavy vehicles.

The brief for the project was to design and construct a sound and rigid concrete pavement that provided adequate skid resistance for the traffic environment. In addition, the construction of the road had to be finished in the shortest possible time with minimal delays to the travelling public.

Construction of the roundabout was completed in just five days. On the first day, the existing pavement was removed and stockpiled, the subgrade prepared and the proof rolled. On day two the stockpiled pavement was stabilised and the surface prepared for concrete.

The following day (Day 3), the road was concreted and cured. Concrete with a compressive strength of 30 MPa was used along with mixed grades of sealing chip and crushed aggregates. Polypropylene and structural synthetic fibres were used to reduce plastic shrinkage and increase flexural strength. The concrete was



Peanut Roundabout in Napier.

screeded by hand, delivered at 60mm to 80mm slump, and superplastised to around 110mm in order to achieve the desired workability. A curing compound was used, with particular care taken to ensure that the compound was compatible with the subsequent application of line marking paint.

Poorly designed and constructed joints can lead to differential settlement, which causes the familiar bumps concrete roads have been known for. To overcome this, dowelled joints at 200mm centres were employed at regular five metre intervals transversely along the road to suit the road geometry. The concrete was poured directly up to the cut edges, with no local thickenings or slab anchors used.

On day four the joints were saw-cut, and finally on day five the line marking was completed, and the road was opened once adequate concrete strength was confirmed, which in this case took three days.

Since the roundabout was completed, the pavement has performed well – no cracking is visible and no differential settlement is evident. Some wearing of the surface has occurred in the running path, but this is to be expected, and in the low-speed environment, skid resistance is not compromised.

Following the success of this project, further mix design trials are taking place to increase workability and to achieve a coarser surface texture.

The use of concrete in road pavements is a practical way of providing a long-term durable solution for highly stressed local sections of roads. As demonstrated by the trial site constructed in Napier, a sound pavement structure, adequate surface texture, and constructability during a short time period can all be achieved with the use of concrete.

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DIARY DATES 2007:

March

22 PCNZ Executive Meeting, Auckland

May

8 NZCMA Council Meeting, Auckland

23 NZRMCA Council Meeting, Wellington

24 CCANZ Board Meeting, Wellington
 PCNZ Executive Meeting, TBA

NZMCPA Conference 2007, Christchurch

NZMCPA

This year's NZMCPA Conference will be held in Christchurch from 27-29 July. The conference will begin on Friday night with a debate, and New Zealand celebrity Gary McCormick has agreed to MC the event. A number of seminars will be held on the Saturday, as well as an off-site placing competition. Competitors will be in teams of three and will need experience in barrowing, shovelling and screeding.

NZMCPA has decided to trial some national awards to recognise excellence in the placing industry. Awards will be given for best commercial, decorative, place and finish, environmental, and most innovative placings. There will also be a supreme award. Nomination forms can be obtained from rocform1@rocform.co.nz.

CCANZ One-Day Courses

CCANZ

The Concrete Technicians' Concrete Testing Course has been split into three one-day courses: Introduction to the Concrete Industry, Concrete Testing and Concrete Technology. If you would like to know more about the content of each course and when they will next be held, please contact Angelique Van Schaik on admin@cca.org.nz or phone (04) 499-8820.

New Zealand Concrete Industry Conference 2007

NZCS

The NZ Concrete Industry Conference will be held at Wairakei Resort, Taupo, from 27-29 September 2007. The Call for Papers has been sent out to industry, and a copy is included with this edition. The closing date for abstracts is 30 March 2007. For further information, visit www.concretesociety.org.nz or email concrete@bluepacificevents.com.

NZCS Concrete Awards 2007

NZCS

The New Zealand Concrete Society Awards is anticipated to be another hotly contested event if 2006 results are anything to go by. The Supreme Concrete Award, along with the Monte Craven Architectural, Building, Infrastructure, Residential, Landscaping and Technology Awards are designed to celebrate excellence in the use of concrete; to recognise the contribution of those firms and individuals who have been involved in significant concrete projects; to increase knowledge and understanding of all aspects of concrete; and to support the development and use of concrete in a manner which is appropriate to the natural and social environment and the needs of the Society.

Conditions of entry will be distributed in late February/early March 2007, with the closing date for receipt of entries being mid-July. The presentation to award winners will take place during the formal conference dinner at the New Zealand Concrete Industry Conference in September.

For more information contact the NZ Concrete Society on 09 536 5410 or email concrete@bluepacificevents.com

NZCS 2006 Concrete Prizes

NZCS

The NZ Concrete Society sponsors the Concrete Prizes each year, and following a revamp of criteria during 2006, these prizes are now offered at Unitec, in Auckland, and Victoria, Canterbury and Massey universities. The prizes are awarded to encourage excellence in concrete design and use, and each recipient receives a framed certificate, a cheque for \$1000, one year student membership of the NZ Concrete Society, and an invitation to attend the NZ Concrete Society or NZ Concrete Industry Conference the following year.

The 2006 Concrete Prizes were awarded to Richard Henry – Civil Engineering, Auckland University; Hao Li – School of Architecture, Auckland University; Nicholas Broad, Unitec; Alastair Upton – School of Architecture, Victoria University of Wellington.

No nominations were received from Massey University or Canterbury University under the new criteria.

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