



concrete

Volume 48 Issue No.5 March 2005

Workplace training for concrete specialists goes from strength to strength

The concrete industry has always had a strong commitment to training for technicians in the industry, but until recently there has been little training available for people 'on the tools' - says Pieter Burghout, Chief Executive of the Building & Construction Industry Training Organisation (BCITO).

Over the last six years, together with the industry, the BCITO has worked to provide a solution to workplace training by developing National Certificates to recognise individual's knowledge and skills in all areas of the cement and concrete sector.

Along with the help of industry professionals, they have developed the following qualifications:

- National Certificate in Concrete Production (Ready-mix)
- National Certificate in Concrete Construction (Precast)
- National Certificate in Concrete Construction (Siteworks)
- National Certificate in Concrete Construction (Placing and Finishing)
- National Certificate in Concrete Technology

All of the qualifications (except the National Certificate in Concrete Technology) are delivered in the workplace and are competency-based with a mixture of theory and practical skills. Assessment is carried out by registered workplace assessors, with the focus being on successfully demonstrating the skills and knowledge in a particular task. The assessors monitor an individual's progress, provide objective feedback and if necessary recommend the individual to undertake additional training.

The qualifications are designed by the industry for the industry and allow for flexibility in education and training. They are nationally and internationally benchmarked and registered on the National Qualifications Framework. They give people the ability to build on qualifications while moving through the industry.

Industry training and the qualifications offered by the BCITO are not just aimed at large corporates. For example, Hawkes Bay company Angus McMillan



Workplace training in action - Travis from Angus McMillan Concrete Limited.

Concrete Limited have seen the advantages of formally training their staff.

Currently they have two apprentices working towards their National Certificate in Placing & Finishing Concrete, with five more employees interested in studying this year. They have realised the value in the qualifications and the benefits of receiving recognition of the skills they have learnt while working in the industry.

Managing director Angus McMillan has achieved a National Certificate himself and is very supportive of the training process. He holds regular training sessions in his workshop in the evenings with the apprentices, supported where useful by a BCITO training advisor. Angus sits in on the training sessions so he can share his knowledge about the industry. The team has developed a study method that works well for them, and working together for

...continued on page 2

WHAT'S INSIDE

- News Pg 3
- International qualifications in concrete Pg 5
- New concrete practitioners course Pg 6
- Concrete and environmental challenges Pg 7

Upfront...



Rex Williams, Chairman

2004 was a busy and productive year for the Cement & Concrete Association of New Zealand (CCANZ), and I've thoroughly enjoyed settling into my new role as Chairman of the Board. This year our sector is going through a lot of change and it's vital for us as an industry to jointly work towards addressing the many concerns surrounding the changes to the building legislation.

On 31 March, many of the new provisions of the 2004 Building Act will come into effect. The new act has important implications for our industry and we thought it was important for CCANZ to put forward a collective voice for our industry.

One of the new provisions of the Act is that it stipulates that certain areas of work can only be undertaken or supervised by a Licensed Building Practitioner. We advocated the view that it's the type of work that should be subject to a licensing requirement, rather than the practitioner as such being licensed. The aim is to ensure

that restricted work is supervised by a person with the required expertise, rather than being limited to someone from a particular trade.

We also commented on proposals to establish licence categories and supported the proposal that the Building Consent Authorities should play a crucial role in the successful implementation of these reforms. We have recently been asked to liaise with officials while they undertake another round of consultation within industry sectors.

Other key features of the Act that will come into effect over the next few years include the certification of proprietary building products, accreditation and registration of Building Consent Authorities, and the review of the Building Code.

I'm looking forward to the year ahead and working hard with you to develop an integrated voice for our industry. We are also drafting submissions for a number of other issues surrounding the new Building Act. The changes are significant and we want to make sure that we're providing recommendations that offer the best possible solutions for everyone in our industry.

...continued from page 1

the two hour sessions has proved to be an invaluable tool when working through the theory units.

Angus has also been working closely with the BCITO to refine the new-look Cement & Concrete qualifications, which are being re-launched in 2005, replacing the existing Place & Finish Qualifications. His help has been invaluable as it is important to have genuine feedback from the industry to be able to create qualifications that work in the field.

Firth Industries is another company that has identified a need to provide a pathway for their staff to achieve nationally recognised qualifications and in 2002 decided to promote industry skills-based training. Together with the BCITO, they developed a 'stepping stone' programme (smaller modules of the full package), which enabled employees to enrol in training relevant to their particular job. As an individual's role changed or developed they could then continue to advance or consolidate their learning through further modules, working towards gaining a National Certificate.

Currently 117 Firth Industries employees across the country are participating in the programme, with more planning to enrol this year.

Phil Plimmer, who looks after the development of the programme for Firth Industries, said the unit structure of the National Certificate in Concrete Production is well aligned with the critical roles at production plants. They have found the Recognition of Current Competency [RCC] process simple and very suitable for confirming key competencies held by experienced staff. When gaps

are found they are able to follow through immediately with relevant additional training.

Firth Industries believe they are obtaining significant value from the programme, and have extended their commitment to training 10 recognised assessors. Staff at Firth have welcomed the scheme and the opportunity to achieve a nationally recognised qualification reflecting their skills and experience.

Currently there are 163 people in the industry working towards a National Certificate, double that of around three years ago - a promising result, but one with plenty of scope for further growth. While the extent of the impending builder licensing regulations are not known, it is likely that qualifications will be a key way of proving competency, which is likely to have a positive impact on the trainee numbers in the future.

For further information on the benefits of training in the workplace or how to gain a National Certificate, contact your local BCITO office by calling 0800 4 BCITO [0800 422 486].

The BCITO is the organisation appointed by Government to develop and implement industry qualifications for the building and construction sector. With over 50 Industry Training Organisations throughout New Zealand servicing all industries, the BCITO is just one of the organisations that aim to set high standards for the building and construction sector and to consult with the industry to make sure that the qualifications they develop and administer are what the industry as a whole wants.

News...

Concrete helps to ease congestion

Stage one of the upgrade and construction of Auckland City's \$195 million central motorway (spaghetti junction) project is complete. The project, which began in October 2002, is largely made from concrete and aims at alleviating the congestion problems at Auckland's busiest section of the motorway.



Construction underway on Auckland's spaghetti junction.

Extra lanes have been provided with better lighting and signage displaying driver information, and new landscaped features including native plants and trees now adorn the side of the motorway. Upgrades have been made to the structural and seismic performance of the Khyber Pass Viaduct, Grafton No. 2 Bridge and Grafton No. 3A Bridge to enable them to

withstand increased loads. The Transit New Zealand project is expected to be completed in 2006.

Concrete set to save the UK's green-belt

With the British Government's projections that 189,000 homes need to be built each year, concern over the impact on the country's greenfield land is increasing. However, it has been discovered that cement could be the saviour of the green-belt and beneficial to the environment.

Through the process of stabilisation and solidification, industrial and commercial brownfield land and its potentially contaminated soil can be mixed on site with cementitious materials. The use of cement locks-in the potential contaminants; treating and improving the overall quality of the soil. The cement remediation techniques have been praised for reducing the 'dig and dump' technique to provide on-site solutions and for creating the possibility that new developments will be built on brown instead of greenfield land.

Research deal for concrete

Auckland University's faculty of engineering, Golden Bay Cement and Pacific Steel have signed a five-year agreement that is expected to benefit the New Zealand construction industry.

Golden Bay Cement and Pacific Steel will provide the University with more than \$400,000 over the next five years, for the development and teaching of a postgraduate course in advanced structural concrete design and research into the uses of cement and reinforced concrete. The first intake for the course is July 2005.

Small error in IB 79

There was an error in IB 79 (Information Bulletin on recommended industry practice on bending and re-bending of reinforcing bars) that has been corrected. If you downloaded your copy before January, CCANZ recommends that you download it again from www.cca.org.nz. CCANZ wishes to give special thanks to Graeme Jamieson from Bloxam Burnett & Oliver for picking up this error.

Upper Harbour Bridge taking shape

A milestone in the new duplicate State Highway 18 Bridge joining Greenhithe and Hobsonville across the Upper Harbour is complete. The completion of the first concrete closure pour has successfully joined the two cantilevers making up the 73-metre bridge span on which the road surface will eventually be placed.

This is an important step forward in confirming that the stringent quality requirements demanded by the design of the bridge have been achieved. Work is continuing on the remaining six bridge spans of the Transit New Zealand \$30 million project. It is due for completion mid 2006.



First concrete closure pour for Upper Harbour Bridge now complete.

Building Code Update

CCANZ has been preparing a series of submissions to the Department of Building and Housing (DBH), including the following areas of interest to the concrete construction industry:

- Fire engineering
- Assessing "Alternative Solutions"
- Energy efficiency
- The citing of the recently revised standard NZS 3109 (incorporating NZS 3104)

These submissions can be downloaded from www.cca.org.nz. We are preparing a commentary document on concrete recycling for a set of guidelines being prepared for the Ministry for the Environment. We are also preparing a submission on the Resource Management and Electricity Amendment Bill. If you are interested in either of these two topics contact Chris Munn (chris@cca.org.nz).

Cook's Clinic...Toppings

A recurring theme in the technical enquiries CCANZ receives is advice on laying concrete over an existing floor slab. There is a wealth of information on this topic, but it is not always easy to find. In this article we summarise some of the available information and provide some guidance on making your topping a success.

Laying concrete over an existing slab on grade is often described as a topping. However, the definition of "topping" is much wider than this. **ACI 116** provides a summary of cement and concrete terminology, and it describes a "topping" as:

1. A layer of concrete or mortar placed to form a floor surface on a concrete base;
2. A structural, cast in place surface for precast floor and roof systems, and
3. The mixture of marble chips and matrix which when properly processed produces a terrazzo surface.

In this article we explore only definition (1).

Sources of information on toppings include:

NZS 4251:1974 "Code of Practice for Solid Plastering" provides some general information on concrete toppings, although the standard is slightly outdated.

NZS 4251:part1:1998 "Solid Plastering - Part 1: Cement Plasters for Walls, Ceiling and Soffits," is another document that provides general information on toppings, but has also left many confused. This document superseded some of the information in the 1974 document, but doesn't alter any of the information on floor toppings.

If ordering a copy of the above documents you need to ensure you state that you're after a NZS standard. There is a series of AS/NZS documents with the same number that covers electrical appliances.

Section 8.5 of NZS 4251:1974 provides a discussion on choices of floor toppings. It categorises toppings into two categories:

1. *Monolithic construction*, where the topping is applied to a still plastic concrete base; and
2. *Separate construction*, where concrete is applied to a hardened base. This category can be further divided into 3 categories - bonded, unbonded, and floating (the last class being where the topping is placed on a layer of insulating material such as polystyrene).

The standards suggest that a monolithic topping is normally 12 to 25mm thick and laid within three hours of placing the concrete base. Bonded toppings are typically 12 to 37mm thick although many proprietary systems may be thinner. The standard suggests that the minimum thickness for an unbonded topping is 50mm. Although most would argue that the minimum thickness should be 75mm, as recommended by **ACI 302.1**.

The problem with thin unbonded concrete layers is the potential for uncontrolled cracking caused by curling. A concrete slab curls because the top dries faster and therefore shrinks more than the bottom. If the topping is thin there is greater potential for uncontrolled cracking caused by curling.

The required thickness of the slab will depend upon structural tolerance, and physical restraint considerations. The maximum aggregate size used in the topping should not be more than one quarter the depth of the topping.

When deciding whether to construct a bonded or unbonded topping, it is important that the designer considers the many variables involved:

1. What is the condition of the base concrete? Cracks in the base concrete often reflect through a bonded topping.
2. Are there physical restraints such as doors, services, or restricted head room that impact on the design?
3. Has the base been treated in some way that may influence bonding of the topping? Curing membranes, form release oils or contaminants can have an adverse effect on the bond between the two layers.
4. Economics. Bonded floors are typically thinner than unbonded, but require greater care in the preparation of the base and the use of a tie coat.
5. How flat is the base? The need to correct tolerance may mean that the topping thickness is relatively large and there are no thickness savings to be made by bonding the topping.

The following ACI documents contain interesting pearls of wisdom:

ACI 302.1 (Guide for concrete floor and slab construction) suggests that for unbonded toppings plastic sheeting or bond-breaking compounds are typically used to break the bond. In a particularly cracked and uneven slab it may be necessary to level the surface prior to the application of the bond-breaking layer. Free joints should be proportioned to coincide with those in the underlying slab, and spacing of tied joints and reinforcement should be as per the design of a slab on grade. You need to be aware that the use of a plastic membrane will increase the moisture gradient to the top surface and add to the risk of curling.

ACI 503.6 (Guide for the application of epoxy and latex adhesives for bonding freshly mixed and hardened concretes). This guide is targeted at contractors giving information on the procedures necessary to achieve bond.

ACI 503.5 (Guide for the selection of polymer adhesives with concrete) provides some generic information on the various types of adhesives and their use. When selecting a bonding adhesive, we recommend that you consult with local suppliers of these products.

International qualifications in concrete technology and construction

David Barnard, course tutor at Wellington Institute of Technology (WelTec) explains the programme for the international concrete qualification that has been running in New Zealand since 1985.

The course in Concrete Technology and Construction offered through the City and Guild London Institute (CGLI) was the first concrete training course to be established in New Zealand that awarded an international qualification. Originally introduced by the New Zealand Concrete Research Association in 1985, the distance learning course is one of the specialty courses now offered by WelTec.

The format of the CGLI correspondence course is two years with an examination taken in New Zealand annually in May. The first year, 'part one' deals with the general principles syllabus of the CGLI qualification where 35 lectures and assignments are to be completed. The topics include: properties of concrete, concrete production & supply, reinforced concrete, formwork, materials, compaction & finishing, testing concrete, curing and specification of concrete.

In the second year, 'part two' follows a similar format but explores the practical applications and the construction aspects of concrete. The topics are similar to 'part one' but also include concrete roads, floors, joints, falsework and various other construction aspects.

The course notes are based on United Kingdom practice and are provided under a licence agreement with the Construction Industries Training Board (UK). Each year a review of the notes is undertaken to ensure the information remains in line with both the CGLI syllabus but also with relevant practice changes.

Concrete is an international material and the majority of the information on the course is applicable to New Zealand. Efforts are made to consistently provide explanations to highlight the differences in practice between the United Kingdom and New Zealand.

While the exam is taken in the main centres of New Zealand, the marking is carried out in London ensuring a uniform standard from all the examination centres in the UK and around the world.

To gain competence in Concrete Technology and Construction to New Zealand standards, it was thought that the CGLI course should be correlated into a New Zealand qualification.



Practical applications of concrete in training. Photo: © PCA.

The New Zealand Ready Mixed Concrete Association sponsored the development of the new National Certificate in Concrete Technology (NCCT) qualification for the BCITO to administer.

To achieve a NCCT, a series of additional assignments and Unit Standards covering the New Zealand standards and requirements are to be completed, in addition to the CGLI course. Once complete, applications can be made to the BCITO for obtaining formal recognition of achieving the National Certificate in Concrete Technology by the New Zealand Qualifications Authority.

The CGLI course skills are designed for:

- Practical sector trainees - those who need more technical appreciation of concrete technology
- Cadet level trainees - those who need detailed knowledge of both materials and construction technology related to concrete

Course programme and enrolment details are available from the WelTec registrar and enrolments for the course are being taken now. For information or an enrolment pack, phone 0800 935 832. Course fees are \$800.00 per year plus a \$150.00 fee for the examination (both fees are GST inclusive).

To obtain further technical information on the course, contact the course tutor:

David Barnard
Phone: (04) 232 6684.
Fax (04) 232 6689.
Email: godivah@actrix.co.nz.

Wellington Institute of Technology (WelTec) is one of the largest polytechnics in the Wellington region and offers over 140 programmes across a broad spectrum of subjects with a wide range of national and international qualifications available.

The City & Guild qualification offered through WelTec sets standards and awards individuals for achievement of skills and competencies. City & Guild qualifications are recognised world-wide by industries and employers as evidence that the individual has the right skills to do a particular job, and the ability to achieve success in higher education and training.

People...

New Minister for Building Issues

On 20 December 2004, the Government announced a new line-up in Cabinet. Perhaps the most significant change for our industry was the appointment of the Hon. Chris Carter as the Minister in charge of Building Issues. Prior to taking on the challenge of his new portfolio he was, and remains, Minister of Conservation, Minister for Local Government and also Minister of Ethnic Affairs.



Hon. Chris Carter, new Minister for Building Issues.

CCANZ looks forward to working with the Hon. Chris Carter on the changes within the Building Act and working towards solutions that provide benefits for our industry.

Golden Bay Cement farewells one of their longest-serving staff

After nearly 47 years as a Fletcher Group employee, popular Golden Bay Cement Customer Services Manager, Noel Salter has retired. Noel leaves Golden Bay with fond memories of a successful customer-focused company that gave him a world of opportunities. Noel is looking forward to improving his golf, traveling and treating every morning like a Saturday morning.

Senior Concrete Engineer leaves BRANZ

After 10 years as a Senior Concrete Engineer at BRANZ, Derek Chisholm has accepted a new role at the Concrete Centre in the UK where he will be responsible for project managing a number of technical publications.

Derek has been a significant figure in the concrete industry with a number of key leadership roles, including immediate past-President of the New Zealand Concrete Society 2002-03 and member of both the Plant Audit and Technical Committee for the New Zealand Ready Mixed Concrete Association. Derek is looking forward to the new challenge and being able to pass his knowledge and skills on to others.

CCANZ has appreciated all the work he has undertaken for us on our behalf in the past, and we are sad to see him go.



Derek Chisholm, senior concrete engineer.

New member appointed to RMBF board

The current Chief Executive Officer (CEO) of Construction Marketing Services Limited, Richard Carver, has been appointed a director of the Registered Master Builders Federation board.

The 42 year-old Aucklander is a former Chief Executive of Carters and Carter Holt Harvey Woodproducts, and CEO of Richmond Limited.

Richard is looking forward to using the business skills he's built up over the years and making a valuable contribution to the Registered Master Builders Federation. He's also looking forward to growing even further the Federation's reputation as the leading builder association in New Zealand.

Richard Carver's appointment to the RMBF board is for three years.



Richard Carver, new RMBF board member.

Concrete Practitioners Course

The construction industry, and in particular structural design and building construction, has been under the spotlight over the last couple of years. A recurring theme in the debate has been that our practitioners' level of understanding is not as high as many would desire. With the aim of constantly raising the bar of understanding of cement and concrete based products, CCANZ is developing a series of courses targeted initially at graduate engineers.

The current concept for the "Concrete Practitioners Course" is to initially develop two modules, targeted at engineers, which cover concrete design and material issues. The aim of these modules will be to provide young engineers with the tools they need to quickly become an effective and productive member in any design or construction team. The modules will complement the information gained at university, but will have a greater focus on experience-based learning. Typical design examples will be used to convey information on topics that have been identified by a focus group of young engineers as issues they struggled with when they first joined a design/construction company.

The aim is for the Concrete Practitioners Courses to start in the third quarter of 2005. These courses, coupled with the portfolio of seminars CCANZ regularly runs, will help to arm the industry with the information it requires to design and build safe and cost effective concrete structures.

Environmental challenge for concrete

There is a misconception that concrete is a relatively inert material, but concrete wastewater is toxic, says Bruce Wills, Auckland Regional Council's pollution response officer.

Burgeoning development in Auckland and the resulting increase in the use of concrete has seen a rise in pollution incidents attended by the Auckland Regional Council's pollution response team. Concrete is now the second biggest contributor to water pollution (after sewer overflows).

A contributing reason for the disproportionate representation of concrete in pollution incidents may be the conception that it is a relatively inert material and therefore the controls put in place are often not as rigorous as for other, more obviously toxic materials.



Concrete run-off - the danger to stormwater drains.

Concrete wastewater is typically highly alkaline with a pH of 11-14. When this wastewater enters the aquatic environment it can flow through a stream, acting as a "toxic slug" adversely affecting organisms and plant life that it comes into contact with.

Because of the logarithmic nature of pH it often requires an impracticable amount of dilution to bring the pH down to a tolerable level. Dilution is not the solution, attempting to dilute may only amplify the adverse effects on the receiving environment and extends the effects further downstream.

A normal healthy urban stream will have macro invertebrates (large aquatic insects) and these in turn are food for larger predators such as eels, freshwater crayfish, and other native fish such as kokopu or inanaga (whose young are known as whitebait). All are extremely sensitive to both the high pH, which burns the delicate membranes in fish gills, and the smothering effects of the sediment contained in concrete slurry.

Everyone has a responsibility to identify environmental risks arising from their activities and to take steps to ensure that these risks are managed appropriately. It is important to ensure provisions are made for excess concrete disposal and sufficient pollution controls are in place to prevent concrete contamination of the stormwater system.

All companies should develop environmental policies in proportion to their size. Large companies should have detailed environmental management plans (EMPs),

while smaller companies and contractors should manage their risk with concise operating procedures (OPs). Environmental policies should identify the risks associated with the planned activities, list specific environmental requirements including resource consents, provide clear directions on how the risks will be managed and who is responsible for the management of the risks.

Environment Court judges are taking a harsher view of repeat, wilful and deliberate offenders. Recent court decisions regarding concrete discharges in the Auckland region have resulted in fines and costs in the order of \$20,000 - \$30,000 and the judge sending a stern warning to the companies involved regarding future incidents around the country.

Any person or company, responsible for breaching the Resource Management Act 1991 (RMA), may be liable for an infringement fee of up to \$1,000 or imprisonment for a maximum term of two years or a fine of up to \$200,000, with a further \$10,000 for each day the discharge continues. Section 340 of the RMA describes how companies are responsible for work carried out on their behalf (i.e. by their employees or people they have contracted or subcontracted) and can be held liable for any unauthorised discharges to ground or the stormwater system as a result of those activities.

Companies must have a robust environmental policy, which includes staff training, to not only protect themselves from possible penalties, but more importantly, to protect the streams, rivers, and harbours from damage.

NEWS from the ASSOCIATIONS

CONTACTS:

New Zealand Ready Mixed Concrete Association

Ph (04) 499 0041
 Fax (04) 499 7760
 Executive Officer: Dene Cook
 President: David Peterson
www.nzrmca.org.nz

New Zealand Concrete Masonry Association

Ph (04) 499 8820
 Fax (04) 499 7760
 President: Alan Steel
www.nzcmca.org.nz

Precast NZ Inc.

Ph (09) 638 9416
 Fax (09) 638 9407
 Email ross.cato-precastnz@clear.net.nz
 Executive Officer: Ross Cato
www.precastnz.org.nz

New Zealand Concrete Society

Ph (09) 536 5410
 Fax (09) 536 5442
 Email info@bluepacificevents.com
 Secretary/Manager: Allan Bluett
 President: Andrew Dallas

New Zealand Master Concrete Placers Association

Ph (06) 873 4428
 Fax (06) 873 4429
 Email angus@rocform.co.nz
 Chairman: Angus McMillan,
 Secretary: Michelle Rauner
 021 669 560

2005 DIARY:

March

- NZCS PRESSS Technology Seminars
- 1 NZCS PRESSS Technology Seminar, Christchurch
 - 2 NZCS PRESSS Technology Seminar, Wellington
 - 8 NZCS PRESSS Technology Seminar, Auckland
 - 15 CCANZ Board Meeting, Auckland

May

- 10 CCANZ Board Meeting, Auckland

August

- 9 CCANZ Board Meeting, Wellington

November

- 8 CCANZ Board Meeting & AGM, Wellington

Precasters respond to demand

PCNZ

In order to meet strong market demand over the last 18 months, new investment in additional precast capacity has resulted in some Precast New Zealand Inc. member companies increasing their production capacity by up to 30 percent. The investment in new capacity, technology and plant expansions, is an attempt to reduce lead times to a more acceptable level.

Executive membership resignation and appointment

PCNZ

It was with regret that PCNZ received the resignation of Paul Swinburne (Stresscrete) from both the Executive and Vice President roles. The Executive would like to wish Paul the very best of luck for the future. Russell Bennetto (Busck Prestressed Concrete) has accepted the position of Vice President for a two year term.

PRESSS Technology Seminars - An Introduction to the Design of Ductile Jointed Precast Concrete Structures

NZCS

Through the efforts of Dr Stefano Pampanin and the late Professor Bob Park, PRESSS Technology, pioneered by Professor Nigel Priestley in the USA, has now been included in the latest draft of NZS 3101, just in time to meet the requirements of the new earthquake loading standard.

The PRESSS Technology seminars are being presented by Len McSaveney, Nigel Priestley and Stefano Pampanin. The NZ Concrete Society would like to acknowledge the sponsorship provided by Precast New Zealand Inc in making this seminar series possible. For further information please email concrete@bluepacificevents.com or download the brochure and registration form from www.cca.org.nz

NZCS Concrete Awards 2005

NZCS

The 2005 New Zealand Concrete Awards are set to be even bigger than 2003. A revamp of the Concrete Awards criteria and categories in 2003 saw a record 300% increase in entries for these biannual awards.

Conditions of entry were sent out in late February 2005, and entries close Friday 15 July 2005. Formal presentation of the Awards will take place during the concrete industry conference to be held at SkyCity Convention Centre, Auckland, 22-24 September 2005.

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

NZCS Concrete Prizes 2004

NZCS

The NZ Concrete Society sponsors four Concrete Prizes each year at Auckland, Victoria and Canterbury Universities. The Prizes are awarded to encourage excellence in concrete design and use, and each recipient receives a cheque for \$300 and one years complimentary student membership of the NZ Concrete Society.

The 2004 Concrete Prizes were awarded to:

- Rick Van Ballegooy - Civil Engineering, Auckland University
- Vajini Pannila - School of Architecture, Auckland University
- Christopher Hartley - University of Canterbury

School of Architecture, Victoria University of Wellington has still to advise their winner.