

Reducing our carbon footprint

What is your role as a built
environment professional?

CIOBA elects new president

The president introduces
CIOBA Value Propositions

CarbonAction2050

Practical steps to make
an immediate difference
on the ground now



The Architecture of (Net) Zero Emissions

Can and should Australia look
towards zero emissions housing?

Carbon Pricing

The government's
commitment to carbon tax &
how this affects the building
industry

Urban Sustainability in Japan

Young Researchers come
together to learn from
Japan's experiences

Urban Development with Co-benefits

A United Nations University
Research Project with case
studies in Japan, India,
China, Brazil and Indonesia

Australian Sustainable Built Environment Council

Zero Emissions Residential Task
Group Action Plan

contact australasia

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welcome to the big ideas small carbon footprint issue



I am delighted to welcome you to our first themed newsletter in a long while centred on “Reducing our carbon footprint: what is your role as a built environment professional?” The terms climate change, global warming and greenhouse gas emissions are becoming increasingly engrained into our daily conversations and it is timely to reflect on how we, as built environment professionals, can contribute to the debate on ways we can achieve a more sustainable future. The building sector accounts for a considerable share of energy use and is responsible for one third of overall energy-related greenhouse gas (GHG) emissions worldwide*. In Australia about a quarter of the total GHG emissions are attributable to the building sector**. While many other sectors are responsible for GHG emissions no other individual sector has such high potential to reduce emissions through energy efficiency improvements in buildings. Tapping into this potential can thus contribute significantly in dealing with the global climate change problem. Built environment professionals are in a unique position to contribute to improved energy efficiency in buildings and act as agents of change towards achieving sustainability. As an industry we have a central role to play in the incorporation of sustainable energies into design solutions and in the integration of environmental considerations into all phases of the project lifecycle.

This issue of Contact Australasia explores a range of challenges and opportunities to address some of the most pressing sustainability issues. The Federal Government’s plans to introduce a carbon tax in Australia will have significant impacts on the way we build. Barry McBeth from Altus Page Kirkland reviews the implications of the carbon tax on the building sector with a focus on its impact on the cost of building materials (see page 11). Zero-emissions housing is fast becoming the way of the future. Jayne Paramor from the ASBEC - Australian Sustainable Built Environment Council highlights though that the current lack of regulatory provision concerning zero emission housing means that actions and initiatives remain largely voluntary. Read about the work that the ASBEC, the peak body representing sustainability interests in the building sector, is undertaking in efforts to push the zero emissions standards into the residential mainstream (see page 13). We also hear from a past president of the ASBEC, Caroline Pidcock who was awarded one of the 2009 Byera Travelling Scholarships to consider the architecture of (net) zero emissions housing. In her article Caroline explains that Australia is well placed towards achieving (net) zero emissions housing and considers some of the major issues which need to be addressed in order to achieve this (see page 16).

While the primary aim of sustainable urban development policies may be to achieve reduced global carbon emissions, realising these potentials can also bring various co-benefits at a local level such as decreased air pollution and better health and reduced mortality. Two researchers from the United Nations University Institute of Advanced Studies - Dr Christopher Doll and Dr Osman Balaban - working on a major project called Urban Development with Co-Benefits write about the concept underlying the project which covers five countries; Japan, India, Indonesia, China and Brazil across five sectors; energy, building, land-use, transport and waste (See page 18). In their article, Chris and Osman provide case study examples of how the co-benefits approach can be undertaken in the planning of infrastructure projects.

This year we witnessed a record number of disasters which have enormous economic, social and environmental impacts on entire nations requiring long-term rebuilding efforts. At the time of writing this I have just returned from Japan, a nation still recovering from the chaos and turmoil brought about by the March 11 earthquakes and tsunami. Along with fifteen other PhD researchers, I was provided the opportunity to participate in a Young Researchers’ School (YRS) to learn from Japan’s experiences on urban sustainability. We hear from four YRS participants who tell us about what they took away from the YRS in Japan (see page 23).

Profiled in this issue are two energetic CIOBA incorporate members, Lindsey Prehn and Stephen March who tell us about how the CIOB has benefited them in different but important ways. We are very happy to be featuring our first Student Profile, Penelope OHagan who is completing her Bachelor of Construction Management at the University of Newcastle (see page 28).

As you can see Contact Australasia is undergoing some exciting changes and what better way to introduce our first e-version of Contact Australasia – towards reducing CIOBA’s carbon footprint. We hope you like our fresh new look as well as the introduction of a number of new regular sections. These changes are being introduced in response to feedback received through the CIOB Australasia Professional Bodies Survey which took place last year. We would like to thank everyone who responded to the Survey – your feedback is of most importance to us. We have taken on board your feedback and hope that what we have introduced better suits your needs and interests. To read more about the changes we are introducing based upon the survey results see Page 6. We are always open to suggestions and would love to hear from you so drop us an email at editor@ciob.org.au to let us know your thoughts.

Jessica Siva
Editor - Contact Australasia

president's column



I am humbled by and honoured to be the 6th Regional President for CIOB for a two year period from 2011-2013. I follow excellent examples of leadership. It is not easy to be trailblazers in creating a new organisation and much has been achieved collectively by all the past President's, their Executive Councils and the Centre Chairs and Committees.

Membership growth is always of key concern in the early stages of an organisation. We started in 2003 with a membership of 159 and by 2010 this had grown to 829. Since 2006 we have had a consistent growth rate annually of approximately 7%. One of our greatest strengths is the number of student members we have however one of our greatest challenges at the moment is that we lose these student members as they move away from the University environment and into full time employment in various organisations. We need to work hard to engage our young professionals! We currently have 350 student members.

We are now in our 8th year and it is timely to reflect on where we have come and what we would like to do. Towards this end the Executive and the Centre Chairs as well as the Regional Manager and her team met in July for a weekend to discuss key challenges and our future directions. In preparation for the weekend some eight discussion papers were produced to focus our thoughts and ranged across many topics grouped under Exploring, Focussing, Delivering and Communicating Value to Members. We reflected on the CIOB Strategic Plan. Our current makeup of our membership was considered along with discussions around who our future members might be. Channels of delivery of our Value Propositions as well as channels of communication were explored. We drafted what we thought were our CIOB A Value Propositions and they have been included on page 10 of this edition of Contact.

I am indebted to all the Vice Presidents, the Centre Chairs and the Management team for their tireless work in preparing for the Planning Weekend and for giving up their precious time away from their families. As a group we developed some thinking around the characteristics of our current membership.

Your Centre Chairs as your representatives presented a suite of continuing professional development activities for each region for the next twelve months. This is the first time this has been done. Your support for these activities is much needed and your input for future ideas is always most welcome from your Centre Chair – just drop an email and stay in touch.

For the first time in CIOB we decided to have identified and formalised a range of Portfolios for each of the Vice Presidents to champion. The Portfolios are Government and Regulation led by Mr Niall McSweeney from Altus Page Kirkland, Centre Coordination and Development led by Mr Daniel O'Riordan from United Group Limited. The final Portfolio is Industry and Partnerships and currently I am in the process of recruiting our third VP. There are two other key Portfolios in the Executive team and that includes Education and Accreditation and Marketing and Communication. Education and Accreditation is led by My Willy Sher from University of Newcastle and Marketing and Communication is led by Ms Jessica Siva one of our newest CIOB recruits and a PhD student from RMIT University- writing her dissertation on "Clients and mega projects".

A very important part of growth is new membership from our up and coming graduates. Our Regional Manager has been working very hard in conjunction with CIOB HQ Education to engage with the Universities in Australia. We had our first accreditation in 2010 with Bond University and we are currently assisting several other Universities in preparing their applications. This is a remarkable achievement in just 18 months and all involved are to be congratulated. We must ensure that in our own areas we engage with our young professionals during their time at University and also in their early careers. We are looking for your support in various ways over the next 12 months.

As past Presidents have so eloquently stated CIOB was originally a UK based organisation but has now grown in international stature. I look forward to working with many of you over the next two years.

We have a new look Contact that has also been freshened up with additional content. We are indebted to Jess for her creativity, patience and persistence!

I have been travelling to the various centres and have thoroughly enjoyed meeting, listening to and speaking with members at events held in Brisbane, Melbourne and Perth since becoming Regional President. As well we have had an important trip to Auckland, Wellington and Christchurch at the end of August where I met with members, industry, universities and other professional bodies. Read about my visit to New Zealand on page 7.

Professor Kerry London,
FCIOB, FRICS, MAIB, BSc(Arch),
BArch, MBldg, PhD
Regional President

cioba news and events

Government & regulation

CIOBA have struggled to get recognised in being an advocate voice for the industry with government and/or legislative bodies. The institute have not had the same impact on the evolution of the built environment that has been experienced in the UK or other regions.

We need to provide:

- Advice for regulators in respect to legislative enactments and experience from other regions
- Feed-back and advice from our members as to the shortfalls in the current methods of accreditation and licencing
- Recognition for our view of improving the built environment
- Guidance for the educational requirements of the industry

CIOB have experience from a number of the international regions in respect to the evolution of the built environment. This view needs to be expressed so that the stakeholders in government recognise the value that the institute can bring to any of the key policies or shortfalls that they believe they have in built environment. To do this we need to be recognised as a voice for the membership, the intellect that it contains and for the standards that we set.

The immediate issues within the region relate to the quality and quantity of skilled resources. The acceptance of CIOB qualifications for licencing and migratory status is key to the membership. The simplification of the current method of licencing could lead to a major issue in respect to having uncertainty in the market as to what are the correct accreditation and its intended use

As a route for the industry, the CIOBA needs to provide some positive direction to the universities and other educational bodies as to the needs and requirements for the future graduates to the industry. Having a voice that is heard is key to being recognised and also being seen to be acting in the best interests of the membership and for the built environment. This is possible through engagement with the regulatory bodies and the relevant departments, which influence our industry. This will require a two pronged method in actively engaging with other pressure groups such as the UDIA, PCA, GBCA and the like, to provide support for the opinions but also to raise our profile.

Throughout the remainder of 2011 we need to be active in engaging with the other industry representative bodies to raise our profile and acceptance of our professional standards. This will allow us to access/influence the development of some of the proposed legislation and provide some "lessons Learned" from our international base.

Niall McSweeney
Regional Vice President

Signing of Training Partnership
with Mainzeal. From left to right:
Darrell Edwards, Robert Davis, Conor
Brownlow, Professor Kerry London and
Peter Cunningham.

Centre coordination

The CIOB Regional Council and Committee Chairs got together over the weekend of the 23rd and 24th July 2011 to strategically plan the way for the coming year. One of the major topics discussed was developing a better way in providing centre coordination and development for committee centres. The first and most notable initiative suggested was to set up a CIOB events calendar for the coming year. The committee chairs would set up events for their respective regions, which would be fed back to Regional Council and CIOB Australasia head office. Regional Office would issue the calendar to members on a regular basis. CIOB Committee Chairs established a one month deadline to finalise the events that could be tabulated in the calendar.

The CIOB Regional Council and Committee Chairs also discussed other initiatives for coordination between the regions. A suggestion was made to have an annual CIOB Australasia awards program. The three award categories would be as follows:

- Construction Management Student of the Year Award
- Construction Manager of the Year Award
- Project of the year Award that meets CIOB core values.

The three categories are similar with the UK CIOB awards program. The three categories will give three critical links to our core members for construction manager of the year, industry with project of the year and finally students with construction management student of the year. The committee chairs would run the nomination process in their states. The committee chair and representatives would select three from the above categories and would put forward into the final selection at Australasia level. The regional executive would make the final selection of the awards. The CIOB President would present the awards at the final calendar year CIOB Australasia Regional Council Meeting (Christmas Function). The award could consist of a trophy and gift voucher. It was concluded that the awards initiative would be forwarded to the financial years of 2012/2013 or 2013/2014 based on budget and resource restrictions.

The CIOB Regional Council and Committee Chairs also discussed the current teleconferencing methods and timing availability for regional council and committee chair meetings. It was concluded that the arrangements met the council and committee requirements.

Daniel O'Riordan
Regional Vice President

First International Training Partnership

Mainzeal Property and Construction have become the first company outside of the UK to sign up to the CIOB Training Partnership scheme.

Mainzeal are one of the leading property and construction companies in New Zealand, delivering commercial, industrial, retail and refurbishment projects. They have identified the need to offer training and development to staff, supporting them to gain their professional qualifications.

In late August, CIOB Australasia President, Dr. Kerry London and NZ Centre Chair, Peter Cunningham, presented Mainzeal Property and Construction with their CIOB Training Partnership certificate.

Regional Vice Presidents



Niall McSweeney,
BSc(Hons),
MCIOB, Dip Con
Econ, Dip Con
Tech
Regional Vice
President



Daniel O'Riordan,
BSc(Hons),
MBA, MCIOB,
TMIEAust (Civil),
MAIPM
Regional Vice
President



cioba news and events

Education

Welcome to the first higher education update for some time. Several aspects of Australian construction tertiary education are in a state of flux and it's timely to tell you about them. Firstly, AUQA - Australian Universities Quality Agency - the government's quality assurance agency for universities - is being replaced. A new national regulatory and quality agency for higher education called the Tertiary Education Quality and Standards Agency (TEQSA) is being established. TEQSA will:

".../. regulate university and non-university higher education providers, monitor quality and set standards. TEQSA will register providers, carry out evaluations of standards and performance, protect and assure the quality of international education and streamline current regulatory arrangements. It will join together the regulatory activity currently undertaken in the states and territories with the quality assurance activities currently undertaken by the Australian Universities Quality Agency." (Australian Universities Quality Agency, 2010)

In support of TEQSA, the Australian Learning and Teaching Council (ALTC) has funded the development of threshold learning outcomes (TLOs), representing the minimum standards all construction management programs will be expected to deliver. The ALTC Discipline Scholar for Building, Assoc Prof Sid Newton, has steered the development of these standards. He has liaised with all higher education providers of Building and Construction degrees in Australia, all relevant professional accreditation bodies (local and international), key industry professionals (representing small, medium and large organisational settings and a broad sample of industry sectors), key academic leaders, current students and recent graduates. A summary of the TLOs which construction management students will be required to demonstrate are shown below.

TLO1: integrate and evaluate the fundamental principles and technical knowledge of building and construction technology, management, economics and law

TLO2: identify and resolve typical building challenges with limited guidance, employing appropriate evidence-based problem-solving and decision-making methodologies

TLO3: critically and creatively reflect on personal behaviours and capabilities in the context of entry to professional practice

TLO4: interpret and negotiate building and construction information, instructions and ideas with various project stakeholders

TLO5: research and develop methods and strategies for the procurement and delivery of contemporary construction work

TLO6: demonstrate an integrated understanding of both the theory and practice of building and construction based on experience

These TLOs need to be read in conjunction with the explanatory notes that accompany them. Unfortunately we do not have space to include them here. A booklet describing them will be published in August/September. If you are interested in obtaining a copy, please email Sid at sidney.newton@altc.edu.au

Accreditation

In 2010 CIOB updated their International Accreditation Guidelines and Education Framework. Australasia has a CIOB member assisting on the International Accreditation the International Accreditation Panel and our office has worked with Head Office education



education department to develop local delivery of the accreditation assessment and panel visit for universities wishing to apply.

In December 2010, Bond University became the first in Australia to receive direct accreditation for the Mirvac Institute of Sustainable Development and Architecture for their Bachelor of Property & Sustainable Development. Throughout 2011, CIOB Regional Office has been working with a number of universities in Australia applying for CIOB accreditation of their Bachelor and/or Masters degrees in construction management. We look forward to announcing details for additional programs being accredited in the near future. Universities in New Zealand have also shown interest in CIOB accreditation and met with the Regional President and Manager as part of their visit to New Zealand in late August.

Students Visit Hansen Yuncken

A group of construction management students from Newcastle University's School of Architecture and Built Environment visited the Newcastle head office of Hansen Yuncken in early September. The visit gave them an opportunity to understand the different activities that occur in the head office of a large construction contractor, and appreciate the need for everyone to work together. They thoroughly enjoyed the event, with one of them saying "Thank you, so much for organizing such an event. It was very informative, and I enjoyed hearing all the real-life achievements... I look forward to hearing more about these opportunities. I hope we can have many more meetings such as these."

Sincere thanks go to David McCarthy (MCIQB) for organising the event and to Trevor Nye (Regional Manager, Newcastle Office) for his on-going support of construction management education at Newcastle University. The event was topped off with bacon and egg rolls overlooking Newcastle harbour, and a visit to the recently completed AUSGRID showroom which showcases the Australian Government's Smart Grid, Smart City project.

Willy Sher
Education Panel Chair

Marketing & Communications

In 2009/2010 CIOB Australasia conducted a Professional Bodies Survey to investigate why people in our region seek out membership of professional associations. The survey also sought to identify the value people feel that professional associations bring to the construction industry across Australasia. The Survey has been very useful for us to understand what our members value. "Updated professional information", "Updated information of the industry" and "Professional Development" were highlighted as the top three expectations of professional institutes. Based upon this we have introduced a number of new sections to Contact Australasia including professional and industry news and academic news. We will also continue to provide updated information relating to professional development courses and events available to CIOB members. Additionally we are making "Features" a regular section where we will cover a selected number of articles which are highly topical in relation to a selected theme. The idea of having themed newsletters is also aimed at exploring current debates and providing members information relating to pressing issues surrounding the built environment.

In July this year the Regional Council and Management team came together for a weekend to discuss a range of topics relating to our future directions. We considered ways in which we could improve our communications to members in terms of regional, portfolio and centre activities. Towards this end we have introduced additional content to Contact including Portfolio and Centre news and updates.

We are also introducing the circulation of quarterly e-newsletters, aimed at providing more regular and quick soundbites to members in regards to what's happening in CIOB Australasia. We will continue to implement improvements to the way we deliver value to our members in the coming months. We aim to increase the amount of information on our regional website and we are also looking to develop a "members only" section on the website so watch this space!

Jessica Siva
Publications Officer



Willy Sher,
BSc(Building) MSc,
FCIOB
Chair Education
Panel



Jessica Siva, MPhil,
BArch(Hons),
BSc(Arch)
Publications Officer

Time Zone Members Forum

The Chartered Institute of Building established the Members Forum as a vehicle to ensure representation from all time zones across the world in 2008. In order to ensure representation at Members Forum, the Institute established a number of time zones with representatives from each time zone being entitled to attend Members Forum on the basis of proportional representation of total membership numbers in order to ensure representation and reporting from every country where members are present. There are six time zones; UK & Ireland, Europe, Africa, Middle East/India, Asia Pacific and the Americas.

The Asia Pacific Time Zone comprises CIOB branches in the region including Australasia, China, Hong Kong, Singapore and Malaysia and is currently Chaired by Australasian FCIQB member and Past Regional President, Patrick Weaver.

Gary Faulkner, WA Centre Chair represented CIOB Australasia at the June 2011 Members Forum and our Regional President, Dr Kerry London, will attend the upcoming Members Forum being held at CIOB Head Office in December.

Time Zones members meet via teleconference at least twice a year to discuss best practice, identify and address drivers for change that are relevant to Asia Pacific members and industry, develop strategies for improving engagement and communication with the membership within the time zone and make recommendations to the full Members Forum.

Key items discussed at the June Members Forum included improving communication with and for international members, how to increase recognition of CIOB internationally and greater engagement with our younger professionals in the Institute. Time Zone members will also assist with a review of CIOB qualifications framework and mapping of Construction Management skills

Elizabeth Thomas
Regional Manager

President's visit to NZ

In the last week of August Elizabeth Thomas, CIOB Australasia Regional Manager, accompanied our Regional President, Dr Kerry London on a visit to New Zealand for an intensive week visiting local universities and technical colleges, hosting a breakfast seminar, meeting with staff and council members of other international and local professional bodies and CIOB members in Auckland, Wellington and Christchurch. The week kicked off with a very successful breakfast



Darrell Edwards, BIM Manager Mainzeal giving his presentation at the CIOB Breakfast Seminar: Integrated Design and Delivery Solutions with Professor Kerry London at Auckland University of Technology in August

seminar event where Professor London and Darrell Edwards presented together on Building Information Modelling.

There was also a site visit to the Christchurch Red Zone. Calvin Payne, FCIQB member working for CERA (Canterbury Earthquake Recovery Authority) Master Planning the demolition and eventual rebuild of Christchurch and Canterbury was kind enough to arrange a site visit for the President to view the first major phase of the Airport Terminal Project in Christchurch as well as a tour inside the Red Zone where we were able to see firsthand some of the challenges that face the NZ Construction industry in the next few years.

There is an enormous amount of work to be done with a very extensive Demolition Masterplan still being undertaken. Speculation on rebuilding estimates that it may take as long as 2 years before this will begin. After the initial dramatic event and as we go about our busy lives it is sometimes easy to forget the enormous impact that disasters have on an area and the people who are left to bring life back into a place. The Christchurch people are resilient however we should every now and then still reflect upon their plight.

There is an opportunity for CIOB to be involved in developing and supporting quality construction professionals to assist with the Christchurch and Canterbury Rebuild. We look forward to supporting our NZ Centre Chair Peter Cunningham and his committee to strengthen our presence and assistance to members and industry in the region.

Elizabeth Thomas
Regional Manager

Professor Kerry London
Regional President



Elizabeth Thomas
Regional Manager
CIOB Australasia



Professor Kerry
London, FCIQB,
FRICS, MAIB,
BSc(Arch), BArch,
MBldg, PhD
Regional President

01



01: Calvin Payne, FCIQB taking Professor Kerry London on a tour of the Red Zone. 02: The Red Zone.

02

centre news

NSW

How quickly the year is passing by. Since the Regional AGM and the Council elections earlier in the year, the Centres have been busy planning for the year ahead.

In May, I was pleased to present awards to three students who were recipients of a CIOB Excellent Student Award. The awards are for only the most outstanding students from their Building and Construction courses. I express my congratulations again to these students and I look forward to their ongoing enthusiasm and contribution to the industry. If you are interested in finding out more about the recipients of this year's awards or to find out more about the awards for next year, log on to the CIOB website or get in contact with your Centre committee member.

Our monthly social evenings are well attended and we aim to continue these as it is a great opportunity to meet with other members and to discuss the latest news and trends in the industry in a casual and relaxed environment. We have a strong programme of events planned for the year ahead with many interesting topics which no doubt will interest you.

We are excited about the year ahead and look forward to bringing you some interesting and relevant events with a push to represent across the state.

Nick Marston
NSW Centre Chair

Queensland

As the current Queensland Centre Chair I would like to take this opportunity to give all CIOBA members a brief update on the proposed upcoming events that we are hoping to provide to all Qld based members over the coming weeks as well as details on the current Qld Centre Committee members and new applications for membership and enrolments.

The make up of the current committee is as follows:

Qld Centre Chair: Peter White
Centre Committee Rep: John Liddington
Centre Committee Rep: Andrew Ash
Centre Committee Rep: Brian Howard
Centre Committee Rep (Central Qld): Jonathan Wood

We would welcome any other Qld based CIOB members who would like to become an active member of the Qld Centre Committee to contact myself on 0419 724 938 so that Nomination forms can be submitted for formal approval at the next Committee meeting.

Unfortunately attendance at the last two Qld Centre Social events held at the Glen Hotel, Eight Mile Plains on 13th July 2011 and 10th August 2011 respectively was disappointing to say the least but I am hopeful that if we continue to persevere with these over the next few months attendance will improve as members get to appreciate the benefits that can be achieved through social meetings and discussions with other CIOB members. On the first of these evenings I had the pleasure of meeting up with Katie Topping who works as an Estimator for the Seymour White Group and both I and Andrew Ash found the conversation with Katie over the course of the evening to be very interesting and believe that her confidence and general knowledge in her field of expertise in



particular will make her a very useful member of the institute and I would like to thank Katie for taking the time to attend and meet with the other members who were there.

During the second of the Social evenings I met Jude Storey (ICIOB), a young energetic newly arrived member of the CIOB from Northern Ireland who had only been in Australia 6 weeks and had already expressed a keen interest in applying for the Professional Review leading to full Chartered Membership whilst completing his initial contract period with his employers, Fulton-Hogan. Once again I personally found the conversation with Jude to be very interesting and believe he could well be a very active member of the CIOBA during his stay here. On behalf of the Institute, I would like to formally welcome Jude to Queensland and wish him every success in achieving full Chartered membership within the next few months.

We have been attempting to finalise a couple of CPD events to be held between now and the end of the year and should be in a position to confirm these over the next week or so. Topics that we have been considering include i) the legal and potentially large cost ramifications associated with the new EPA and local authority waste disposal requirements which will impact on not only the removal of the initial demolition material but also bulk and detailed excavation disposal and general building waste; and ii) the legal ramifications and obligations on Builders and Trade Contractors under the Construction Industry Security of Payments Act which I believe is becoming increasingly used (and in many cases abused) by individuals as a means of securing payment of their claims. We are currently in the process of trying to secure qualified Guest Speakers to attend these CPD seminars and once confirmed we will circulate the details to all Queensland members.

Hopefully the next Queensland Centre update will be a little more informative and we will be able to report on a good result for the CPD events that have been proposed.

Peter White
Queensland Centre Chair

Victoria

The Victorian Chapter of the CIOB has recently held a site visit at the Swanston Academic Building (SAB) constructed for RMIT, University in Melbourne by Brookfield Multiplex.

It provides twelve tiered lecture theatres ranging from 90-360 seats, including a Cinema facility, as well as other formal teaching and learning spaces together with academic and general office accommodation. The building is designed to be open and attractive to the general public as well as RMIT's staff and students and features a central circulation atrium connecting from Level 2 to Level 11, and communal student spaces at each level of the building that feature open balconies.

The project will achieve a Green Building Council of Australia (GBCA) 5 star Green Start accreditation using the Education V1 Tool Design component. CIOB would like to take this opportunity to thank Brookfield Multiplex.

In next few months the Chapter is arranging a morning breakfast seminar on the economic state of the world economy with an international speaker, followed with a renowned local speaker who has experience in project procurement from a national and Victorian perspective.

Ron Webber
Victoria Centre Chair



Nick Marston,
BBuild, MCIQB,
MAIPM, PRINCE2
NSW Centre Chair

Peter White, MCIQB
QLD Centre Chair

Dr Ronald Webber, FCIQB, FAIBS, FAIB,
MAIPM, RegPM
VIC Centre Chair

centre news

Western Australia

This month has been busy time, here in the CIOB WA Centre. We are still holding our monthly Social Networking meetings, which are held every 2nd Wednesday of the month. We meet at 5.30pm in Rigby's Bar and Grill located in the Forrest Centre, 221 St Georges Terrace, Perth 6000. Please try and attend as this is your opportunity to discuss with the WA Centre Chair and committee, what kind of events and support you want from the CIOBA and for us to pass on news of what the CIOBA is doing on your behalf.

As part of our Social Networking meeting for the 10th August we had the pleasure of welcoming CIOB President Dr Kerry London to WA to present her Integrated Design and Delivery Seminar. The event was held in the Terrace Bar at Rigbys and was attended by over 20 members from the CIOB and other Australian Professional Institutes. The seminar was well received and was a great success with many question being posed at the end of presentation. There was also an opportunity after the event to socialise with the attendees, some of which were from chapters of other local institutes.

We are planning to hold a student panel event at Curtin University on 21st September. This event is open to all student members and is a great opportunity to meet senior members of the construction industry who are also local members of the CIOB. We hope to have a variety of panel members ranging from the recruitment industry to the mining industry. This is a great opportunity to meet and ask questions of some key industry representatives.

Gary Faulkner
WA Centre Chair

New Zealand

We've had a busy few months in New Zealand with the visit of Dr Kerry London and Elizabeth Thomas to New Zealand and the start of our site visit and quarterly formal event programme. Kerry and Liz had a busy week meeting with members and visiting universities and other professional institutions to foster ongoing relationships with the CIOB throughout the country. During their time in NZ, they visited Auckland, Wellington and Christchurch.

The formal event programme kicked off successfully in August with the theme of Building Information Modelling and over 50 people attending the event. The next event is in November covering the theme of Risk Management.

During August, we also hosted a successful site visit to the Victoria Park Tunnel project – many thanks to the Victoria Park Tunnel Alliance team for arranging this visit and watch this space for future CIOB site visits.

If you prefer catching up with fellow members in a more informal setting, we are now meeting at the Cavalier Tavern in Ponsonby on the second Wednesday of each month at 5pm – please feel free to join us. We have now opened this social out to our friends and colleagues at the ICE, RICS and NZIOB.

Finally, we have an exciting first for CIOB globally in NZ – Mainzeal has recently approached the CIOB to enter into a Training Partnership between the organisations and providing a formal framework for professionally accrediting Mainzeal staff to CIOB standards. After a successful pilot, a formal agreement has now been reached. If you require any further information about this Training Partnership or would like to pursue a similar approach within your organisations then please contact us for further details.

From all on the hardworking NZ Centre Committee, I look forward to seeing you at CIOB event in the near future.

Peter Cunningham
NZ Centre Chair



Gary Faulkner, BSc Building,
MCIQB
WA Centre Chair



Peter Cunningham, BSc(Hons),
MBA, ICIOB, MCIM
NZ Centre Chair

cioba value propositions

The Regional Council, Centre Representatives and Management Team met in July for a weekend to discuss the key challenges faced by the CIOBA and future directions. As a result seven CIOBA Value Propositions were developed.

CONNECTED	to leading edge professional and industry information, expertise and best practice
CONNECTED	to an organisation that influences policy formulation, regulations and legislation
CONNECTED	to an organisation that provides for industry and professional recognition
CONNECTED	to an international organisation that has members who have a consistent philosophy, aims and principles in relation to ethical, socially responsible behaviours to bring about sustainability to the built environment
CONNECTED	to an organisation that has positive collaborative working relationships with other organisations
CONNECTED	to an organisation that is diverse
CONNECTED	to an organisation that actively supports our young professionals



The Art of Building

The CIOB 2011 Art of Building photographic competition winner and short listed finalists have been announced. Results and images are available at www.artofbuilding.org/2011

The Art of Building is an international showcase for the very best digital photography of the built environment. It is open to both professional photographers and amateur enthusiasts of any nationality. Run by the Chartered Institute of Building, the competition celebrates the creativity of the industry, the passion of the people who work within it, and the impact their work has on those who make use of the final construction.

What is CIOB CarbonAction2050.com?

The Chartered Institute of Building (CIOB) launched its web-based action plan to cut carbon emissions in June 2011. CarbonAction2050.com is an online toolkit designed to establish some simple, practical, actions that could be taken by the Institute, its members, and the wider construction industry to reduce carbon emissions from the built environment immediately and from anywhere in the world. The web address for the toolkit is www.carbonaction2050.com

The CIOB is ideally placed to share local knowledge globally. Collectively, we are a diverse group of construction management professionals, uniquely placed to share knowledge and best practice between industry sectors, and across international borders. We are committed to the carbon reduction targets set out in the UK Climate Change Act (2008) - and to working with the industry, government and the education sector to turn these targets into a practical reality. We are doing this because our members have asked us to. We know that our members and the wider industry will respond to the challenges that lie ahead, and that the practical information contained within this action plan will help them do just that. CarbonAction2050.com, just like the low carbon agenda, will not remain static; it is an evolving and constantly-reviewed resource that provides guidance to achieving regulatory targets. **Importantly, we want to demonstrate our own commitment and progress towards reducing carbon emissions from our business operations and to ensure sustainability is at the centre of everything we do.**

How did this action plan start?

In 2010, the CIOB established a Carbon Reduction Working Group, later re-named the Carbon Action 2050 group, to lead the Institute and its members in meeting the industry's regulatory targets under the UK Low Carbon Transition Plan and Climate Change Act (2008). Membership of the working group, from designers, building control experts, educationalists, project managers and environmental specialists, reflected the diversity of construction management professionals we are seeking to influence through this work. The overall aim of the group was to cut carbon emissions through innovation and best practice in project planning, procurement, design, construction, maintenance, operation, education and leadership.

Why have we based our action plan on UK policy and targets?

The UK was the first country in the world to enshrine carbon reduction targets in legislation, with the introduction of the Climate Change Act in 2008 and five year Carbon Budgets, the most recent of which was announced in May 2011 by Energy and Climate Change Secretary Chris Huhne. Ultimately, the Carbon Budgets will legally commit the UK to reduce its carbon emissions by 80%, based on 1990 levels, by the year 2050. These targets are more stringent than other nations due to the high level of carbon the UK generates per capita. In reality, we want to go above and beyond any constraints of theoretical targets and deliver the best low carbon solutions we possibly can. **While it is based on UK policy, the toolkit is virtually applicable to any country in the world, and the actions are measurable using common, standardised metrics.**

Get involved

Carbon Action 2050 is an evolving resource under constant review to provide practical solutions to achieving regulatory targets. It is now up to you to not only take action, but also get involved.

Do you have a story to tell? Have you worked on a project that will make an interesting case study? Have you got a view on any of these areas of the site or ideas that can help us as we develop our next phase of the site and other user interactions?

Please let us know - we welcome your involvement, enthusiasm and engagement - it is what the industry needs to keep moving this vital work forward.



CARBON PRICING MECHANISM

What a carbon price means for the construction and property sector

CIOB Chartered Building Consultancy, Altus Page Kirkland has undertaken a review of the implications of the Australian Federal Government's proposed carbon tax. We will provide an analysis of this new tax, detailing its potential impact on the cost of building materials with high embodied carbon values. This article is based on information available at the time of publication. We present our own opinions of the industry, with limited or no Government advice on how the carbon tax will affect the property sector.

As a background note, it has been well documented that the Government made its draft legislation for public comment available until 22 August 2011. It has now introduced its final legislation to the House of Representatives this month. As approval is required for the carbon price to take effect, we note that the Government is anticipating legislation will be passed in the coming months, with the initial implementation of the scheme targeted for July 2012.

Essentially, the carbon price is the Federal Government's platform for reducing carbon emissions to below 5% of Year 2000 levels by the Year 2020, i.e. putting a 'fixed' price on the amount of pollution emitted. In addition to the 2020 target, the 2050 Government emissions target requires a reduction of 80% below Year 2000 levels - an effort to change Australia's current ranking as one of the highest emitters of carbon per capita.

The following targets stem from the Clean Energy Future Plan and include relevant tax rates on carbon:

- \$23.00/ton from July 2012
- \$24.15/ton in 2013/14
- \$25.40/ton in 2014/15
- Post July 2015 - open market trading

The carbon price will ultimately hit Australia's top 500 polluters or any business responsible for direct greenhouse gas emissions of 25,000 tonnes or more per annum. The associated processes that generate this carbon pollution

include:

- Waste (emissions from waste sent to landfill)
- Stationary energy (on site energy supply)
- Fugitive emissions (coal, oil, gas)
- Industrial processes (chemical reactions associated with manufacturing)

The above processes cover a significant 60% of Australia's emissions and are of considerable interest in the property sector.

Additionally, it is widely known that the Australian residential and commercial building sectors produce 23% of national greenhouse gas emissions and therefore have a major part to play in meeting national and international greenhouse gas obligations. This fact, coupled with the introduction of the carbon price, will not only influence the way buildings are built and operated, but also how much they cost to build. Altus Page Kirkland anticipates new schemes will be developed to reflect the construction industry's requirement to embrace sustainable

initiatives. An example is the incorporation of recycled content into the manufacturing process to reduce embodied emissions, which is currently under utilised.

As a major consumer of building materials, products and electricity, it is also important to consider that an increase in primary costs will ultimately occur as the carbon price flows through to construction operating expenditure. Our research reveals that the impact on the base supply costs of materials with high embodied carbon values will vary, with the potential cost increase being as high as 5-6%. This value excludes any Government assistance such as the \$300 million steel industry plan set aside for Blue Scope and One Steel, the \$800 million clean technology fund for manufacturers and the assistance for Emissions-Intensive Trade Exposed industries (EITE).

Initially, businesses impacted by the scheme will be required to purchase permits from

the impact on the *base supply costs* of materials with high embodied carbon values will vary, with the potential *cost increase* being as high as *5-6%*

No international offsets are allowed until the full trading scheme starts in 2015. *Only 50%* of an emitter's liability will be *covered* by international permits.

the Government for the quantity of carbon pollution they release. It is expected that industries reliant on trade will be given free permits to ensure they are not adversely affected by international competition as overseas suppliers of products such as steel will not be subjected to the carbon price. Although it is difficult to assess how EITE will offset the impact of the carbon price, as details have not been fully publicised, it will likely affect the carbon intensive industries such as concrete, steel and aluminium.

Looking more closely at the building industry, it is evident that most building materials have high levels of carbon intensity. Current studies suggest steel, concrete, aluminium and glass are some of the more prominent carbon intensive materials. The manufacturers and suppliers of these and other building products will naturally be affected by the carbon price, however, the Government permit plan will help to offset the initial impact. It is imperative to consider the coverage of the carbon price scheme when analysing cost increases in future building projects as EITE industries will negate any up-front initial costs.

EITE Permit assistance provides a high exemption allowance of 94.5% for steel and aluminium industries, resulting in a low cost impact. Exemption allowances of 66% will help offset emissions for industries with medium carbon intensity. As a key industry material, the cement manufacturing industry will receive partial assistance to deal with the impact of the carbon price. Although currently unclear for a main trade exposed sector, assistance will likely be 94.5%, however, will only apply to certain processes of its manufacture. Other industries such as tile and plasterboard manufacturing will not have any exemption, which will result in a higher initial cost impact. Ultimately, the carbon intensity level of a particular industry will be reflected in the permit assistance received.

No international offsets are allowed until the full trading scheme starts in 2015. Only 50% of an emitter's liability will be covered by international permits.

Altus Page Kirkland has been reviewing key materials with the intention of detailing the main impact of the carbon pricing scheme on construction costs. With the introduction of EITE assistance, the initial impact is anticipated to be greatly diluted, with an on-cost of approximately 0.2% - 2% on the cost of carbon intensive materials. In some instances, this impact will be minimal, particularly in the steel industry. This sector may not see the full effect of the tax for four years due to the \$300 million steel industry plan and its 94.5% permit assistance.

The following table illustrates the expected impact of the carbon price on a selection of materials in terms of the increase to base supply costs, associated labour costs and assistance from the EITE's.

Material	% Cost impact relates to supply only & reflective of carbon intensity	Permit assistance* Y/N - %	APK estimate of % cost impact on contractors
Concrete	2-5%	Y - 94.5%	0.2%
Steel	4-6%	Y - 94.5%	0.1%
Aluminium	2-5%	Y - 94.5%	0.1%
Bricks	4-6%	N	1.5%
Tiles	2-3%	N	2%
Plasterboard	2-3%	N	1.2%
Insulation	2-3%	N	1.2%
Glass	4-6%	Y - 94.5%	0.1%

* The Government is set to reduce its assistance by 1.3% p.a over the course of the scheme, triggering further cost increases.

The introduction of labour costs and the EITE assistance plan would significantly reduce any initial costs associated with the carbon price, suggesting a limited pain barrier for contractors and developers during the initial years of the scheme. The impact of the 1.3% permit reduction is dependent on the energy efficiency improvements companies make in the carbon price era, which will ultimately provide additional cost benefits to key stakeholders.

When using the tabled figures to help analyse the carbon price's impact on the cost of a building, it is necessary to consider the particular building type. An office block, for example, uses significant amounts of concrete for its structure, but the need for internal walls is reduced as an open plan structure requires smaller quantities of materials such as block-work and plasterboard. Residential developments with a high ratio of internal walls and architectural facades featuring aluminium and glass will have a variant cost impact. Essentially, each building should be analysed on a project by project basis, with consideration for materials, specification and functionality in order to ascertain a complete and accurate cost forecast. At this stage, we would recommend conducting an analysis including statistics on the flow on cost increase for each building material, product and assembly used in a new development. We anticipate this analysis will require input through the various stages of production, manufacture and fabrication, with consideration for the fuels used at each stage (electrical, gas, coal, oil). Ultimately, a more robust assessment of the carbon price impact would be available.

Considering the above, Altus Page Kirkland is of the opinion that the initial overall cost impact will be restricted due to the level of industry and Government assistance that has been promised. Key stakeholders at this time should be reassured that there will be a relatively small impact in the early years as costs for suppliers, contractors, developers etcetera will be limited by the buffer/price stability period provided by the EITE. We feel that companies in the building and construction industry should take advantage of the initial benefits provided to appropriately assess processes and material selection for future use.

For further information, please contact Barry McBeth, Associate, on (02) 9283 7311 or at Barry.mcbeth@altusgroup.com.

Barry McBeth MRICS is an Associate with Altus Page Kirkland - the leading multidisciplinary provider of independent real estate consulting and professional advisory services worldwide.



A graduate of the University of Ulster in Northern Ireland, he began working with Altus Group in Canada as a Quantity Surveyor/Construction Bank Loan Monitor. Having relocated to Australia, he now provides a similar role in addition to research and analysis of the sustainable built environment.

The movement towards low or zero emission buildings is gathering momentum in the Australian residential sector, with a number of existing and new demonstration projects highlighting clear pathways towards this increasingly popular objective. As the Australian Sustainable Built Environment Council (ASBEC) has identified however, it can be difficult to qualify what 'Zero Emissions' actually means, with a plethora of interpretations and definitions being put forward to explain the term, both here in Australia and overseas. One thing is certain though – with residential buildings estimated to contribute around 17% of greenhouse gas emissions in Australia and Australians living in the largest homes in the world (the ABS estimate the average floor area of new homes is 214 m²) there are significant gains to be made in reducing that output, both for our existing residential stock and for new development. Regardless of the environmental benefits associated with reduced emissions, as the cost of energy continues to rise, the savings to households can be enormous.

it can be difficult to qualify what *Zero Emissions* actually means

The concept of the low emissions house is not new. The German Passivhaus standard, one of the earlier forays into low energy residential design, has been around for nearly 25 years. Despite the obvious advantages associated with this type of residential development, there are still only an estimated 25,000 Passivhaus buildings worldwide, predominantly located in Germany and Scandinavia. Arguably, the up-front cost of implementing such design has been one of the most significant barriers to the wider adoption of these standards, but given the increasing costs of traditional fossil fuels, that cost differential is rapidly shrinking. Evidence would suggest that there is a shift taking place, bringing the concept of low energy housing further into the mainstream, as a sustainability agenda continues to gain momentum around the world. Home owners and residential developers are embracing the potential of low emission housing for a range of reasons and as a result, we are seeing an upsurge in the number of demonstration homes and



Image: Chris Reidy, using Wordle (<http://www.wordle.net>)

more mainstream residential developments taking significant leaps towards low or zero emission profiles.

While it could be said that this movement is still in its inception here in Australia, the international community is demonstrating clear signs that low emission housing is the way of the future. The revised 2010 European Directive on the Energy Performance of Buildings, dictates that by 31 December 2020 all new buildings, including residential, will be 'nearly zero-energy' and that targets will be established to stimulate the refurbishment of existing buildings towards the 'nearly zero-energy' objective. Setting an even higher benchmark, the UK Government recently announced a target for all new homes to be 'zero-carbon' by 2016, as outlined in the UK Code for Sustainable Homes 2010.

While North America does not have such strong regulatory provisions, there is an abundance of voluntary action. Canada's Net Zero Energy Home Coalition is engaging the building sector end-to-end, from architects to consumers, in a holistic approach to encouraging awareness and proactivity across the market around zero emissions housing. South of the border, the Clinton Climate Initiative, in conjunction with the US Green Building Council, is promoting urban development aimed at achieving a 'below zero emissions' standard and there are a number of local initiatives, such as the Habitat for Humanity Affordable Passive House project in Vermont and GE's Net Zero Energy Home project in New York.

In Switzerland, the voluntary Minergie standard is recognised and supported by the Swiss Confederation, local cantons and trade and industry as the benchmark in sustainable building design and seeks to promote the know-how required to achieve low emissions outcomes. These are a just small but representative sample of what is going on around the globe, but type 'zero emission housing' into an internet search engine and you will be astounded by what you will find.

Australia however, is by no means sitting on its hands, though a lack of regulatory provision does mean that action remains voluntary at the current time. A range of relatively high-profile initiatives exist. For example, the Australian Zero Emissions House (AusZEH) project, involving a diverse collaboration of government and industry partners,



Image by Geraldine Liew.

**there are few concrete
market incentives to
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This is where ASBEC
comes in.**

is an initiative of the CSIRO's Energy Transformed Flagship's Low Emission Distributed Energy research program, which focuses on developing low-emission technologies. The AusZEH Demonstration House at Laurimar in Victoria is a 4-bedroom detached home that aims to deliver residential accommodation with a net zero carbon footprint. This will be achieved through a combination of energy efficient design and building practices, on-site renewable energy supply and an advanced energy monitoring and management system. The property recently closed to the public and will be inhabited by a family for the next twelve months to monitor the performance of the property towards achieving net zero objectives.

Mirvac has also consolidated its energy efficiency credentials with the unveiling of its Harmony 9 concept home on the site of the former VFL Park at Waverly in Victoria in 2010. Having already constructed a number of energy efficient homes, rated at 6 Star+ under the Nationwide House Energy Rating Scheme (NatHERS), the developer has built a net Carbon Neutral home that has not only earned a 9.2 Star rating but which has been constructed utilising low embodied energy materials, sourced, wherever possible from within a 100km radius of the property, to reduce the emissions involved in the construction phase of the property. With anticipated energy cost savings of some \$1,200 per annum, when compared to an average 5 Star-rated home in Victoria, the property sets an outstanding benchmark for design, construction and occupancy.

On a broader scale, ASBEC member Sustainability Victoria is working with a number of partners on the Zero Emissions Neighbourhoods (ZEN) project, to develop precincts in Victoria that aspire to significantly reduce their greenhouse gas emissions. Looking across a diverse range of neighbourhood types, including greenfield, infill, retrofit and brownfield development, the project will address the market barriers to implementing sustainable urban design on a precinct scale and will seek to build capacity within the urban development industry to assist in removing those barriers.

Taking a more 'pop-culture' approach, the South Australian Government is funding the Zero Carbon Challenge, a competition to create the design for a zero-carbon house at the Land Management Corporation's green village at Lochiel Park in Adelaide. Constrained by a \$300,000 budget, participants will design homes that are not only affordable in the construction phase but also deliver zero-emissions through the operational lifecycle of the home.

But as with so many aspects of sustainability, zero emissions housing continues to effectively reside in the realms of concept in this country, with increasing numbers of demonstration properties popping up to highlight what can be achieved, but there are few concrete market incentives to push the zero emission standards into the residential mainstream. This is where ASBEC comes in.

ASBEC itself has also been working in this space for some time. After discussions with the Commonwealth Government in 2009 and with support from the then Federal Department of Climate Change, ASBEC, as the peak body representing sustainability interests in the built environment sector, undertook to host an industry meeting to discuss a national agenda for reducing energy emissions in the residential sector, at least cost to the economy. As a result of that meeting, ASBEC established the Zero Emissions Residential Task Group (ZERTG), drawing upon a wealth of expertise from within its existing membership. The development of a discussion paper in 2010 identified a number of areas on which the ZERTG should focus its energy, resulting in an Action Plan to guide the Task Group's efforts through the current year and into 2012.

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One of the major areas of contention identified by the Task Group was the wide variety of language employed in describing low or zero emission housing. Such differences in language are often due to the political climate. For example, the US focus is on energy efficiency rather than emissions reduction due to the fact that energy policy is far less contentious than climate policy. By contrast, climate policy in Europe is better established and legislated and thus, less contention exists around reference to emissions and the setting of greenhouse gas reduction targets

The emergence of regulatory programs however, such as those previously mentioned in Europe, signals growing interest in the standardisation of terms that can be commonly understood and effectively utilised by government, industry and the consumer alike. But the current variety of language renders the landscape somewhat murky. It is often difficult even for industry to appreciate the difference between 'near-zero energy', 'zero energy', 'zero net energy', 'passive house', 'energy plus', 'fossil fuel free', '100% renewable', 'zero carbon', 'net zero carbon', 'carbon neutral', 'climate neutral', 'climate positive' and 'positive development'. So what does that mean for the consumer, the ultimate end-user in the process, who will often, in a voluntary market, be a major driver towards low emission housing? This sort of variety is potentially confusing and without doubt, poses problems for effective communication around low or zero impact buildings, to the point of being a deterrent, particularly to the general public who are not easily able to identify the differences between such closely aligned yet slightly nuanced terms.

Acknowledging the need to streamline this language in order to progress other areas of work on the Task Group's Action Plan, the ZERTG, with support from Sustainability Victoria, recently commissioned research from the Institute of Sustainable Futures at the University of Technology Sydney, looking at both international and domestic markets to clarify the definitions and metrics associated with zero emissions housing. The final output of this work will inform other elements of the ZERTG Action Plan and will provide a foundation on which further dialogue with industry, government and consumers can be based. After much collaboration with the Task Group membership, ASBEC is looking forward to receiving the final report, which will be presented to the ASBEC Council before being released to a broader audience later this year.

Further to this, the Task Group, supported by the Property Council of Australia's Residential Development Council, is also undertaking a mapping of international regulation and incentives to provide a clearer picture of the global landscape for zero emissions housing. Certainly, if ASBEC is to continue developing the dialogue with government in this area, it is invaluable to understand what's out there, what's worked and what hasn't, in order to make informed recommendations as to how the Australian model should be developed.

As technological innovation paves the way for this revolution in residential building practices, it is clear that non-regulatory drivers are having an impact in the marketplace and the rising cost of fossil fuel-based energy production is perhaps one of the strongest. Australia has long been the beneficiary of its abundant coal supplies and the relatively cheap energy which has been afforded by our mineral wealth.

As Australians come to understand the true cost of energy production, the dream of owning a home free of energy costs, through the efficient utilisation of our other equally abundant, yet renewable sources of energy such as sun and wind, becomes increasingly appealing. Similarly, clever changes in the way we think about residential design, accounting for the diverse environmental conditions that this country has to offer, will undoubtedly drive the innovation needed to bring zero emissions housing into the mainstream.

We are no stranger to this kind of adaptation in our built environment. Australia went through a similar shift in residential design in the years after colonisation, as European settlers quickly came to recognise that the designs they had imported from their colder northern hemisphere climates were highly impractical in the often harsh Australian landscape. Residences quickly moved from traditional European designs with small windows, low ceilings and shallow eaves to large, airy homes that made use of the light and airflow and were shaded by deep verandas that cooled the air before it entered the home through large open windows on those hot summer days. We adapted our designs successfully, to create a residential character that is uniquely Australian and much better suited to our climate.

ASBEC established the **Zero Emissions Residential Task Group**, drawing from a wealth of expertise from within its existing membership



Image by Geraldine Liew.

As that climate continues to change in the face of global warming however, the need for adaptation presents itself once again. Higher average summer temperatures, intense and enduring heat waves and more frequent extreme weather events such as those witnessed in Victoria, Queensland and NSW over the past 2 years highlight the need to ensure that we design and construct our homes to maintain our desired comfort levels in the face of such extremes.

ASBEC is also working closely in this space, with the Climate Change Task Group currently undertaking work to develop a policy framework to guide and support the adaptation that our built environment will require to withstand those changes. The residential sector will be one beneficiary of that work encouraging government to take up the challenge of ensuring that Australia's high standard of living is not compromised under increasingly confronting environmental conditions. Adaptation is in our nature, and with the right support and incentives, we can adapt again. And who wouldn't want to live in a home with no energy bills? I know I would!



Jayne Paramor is the Executive Officer of ASBEC. After an extensive international career in marketing, PR and communications in the FMCG, Travel and Tourism sectors, which saw her based in the UK, Europe, Latin America and even a summer in Antarctica

as a Hotel Manager aboard a Russian Expedition vessel, Jayne had an epiphany and decided to use her skills to help protect the amazing world that she'd been so privileged to see. Jayne graduated from a Masters in International Law in 2010, focused on International Environmental Law, while heading up the Marketing and Events program for the Total Environment Centre's corporate engagement program, Green Capital. After a period as a Policy Advisor to the NSW Government prior to the 2011 state election, she stepped into the built environment sector to continue the pursuit of her passion for the environment and sustainability earlier this year, when she joined ASBEC as Executive Officer. Jayne brings with her a wealth of experience, which she is happily dedicating to the cause of improving sustainability across the building and construction sector.

Dockside Green,
Victoria BC,
Canada



The Architecture of (Net) Zero emissions

Article and photography by **Caroline Pidcock**

After many years involvement in a wide range of industry organisations, including being president of the Australian Sustainable Built Environment Council and the NSW Chapter of the Australian Institute of Architects, I thought it was time to focus on research into an area I think is critical to the future of architecture. I was delighted to be awarded one of the 2009 Byera Hadley Travelling Scholarships to consider the architecture of (net) zero emissions housing. My key motivation was to develop a broad understanding of the regulatory, technical and design aspects of such architecture occurring in various parts of the world, and see if they might be appropriate for Australia.

Broadly speaking, net zero emissions housing aims to result in net zero energy consumption and net zero carbon emissions annually. The definitions mainly vary around the boundaries of what is included in the calculations.

Can and should Australia look towards the idea of net zero emissions housing? And if so, what are the major issues particular to Australia that should be considered? The places and people I visited were chosen for reasons of excellence in their own right and relevance to Australia with regards to climate and culture.

During my research it was pointed out that I should change the title of my research to the Architecture of Net Zero Emissions Housing. This focuses on the outcome of annual energy use, recognising that most houses are part of larger systems to which they sometimes contribute, and at other times take from. I became convinced that achieving net zero emissions over the year is a more sustainable and achievable objective in the urban world in which most of us live.

Even while I undertook the research, the environmental, economic and political landscapes of various countries were changing, and will continue to adapt to their diverse circumstances in the future. There are also many countries that I was not able to visit in the time I had. My report is therefore not a complete compendium on the subject, but does give a strong flavour of what is happening in a number of key areas in the world, relevant to Australia.

As a result of my research, I have been convinced that Australia is very well placed to be able to achieve net zero emissions for its residential sector. I believe this will be essential in the provision of affordable, comfortable housing in a low carbon future; a well trained workforce with exportable skills; a building industry able to compete in a global economy; and the development of effective renewable energy systems.

I believe that we will need to regulate to achieve net zero emissions housing. This regulation will need to be carefully designed to anticipate and deal with the many complexities that surround this issue. The overarching framework for regulation should be designed to equitably account for the collective impact of the emissions over the life of a building, including those resulting from operational and embodied energy. The issue of household transport energy is one being discussed in car-reliant America, and seems relevant (and difficult!) here in Australia.

In order to achieve net zero emissions, renewable energy needs to be provided for the energy use that cannot be avoided. I believe this should be required to be provided on-site or near-site, as the costs for doing this will help prioritise energy efficient construction. Regulations need to encourage and enable the successful installation of renewable energy options in these locations, with more work to be done on assisting in the provision of collective solutions.

It is critical that the solutions for zero emissions are applicable at all levels of the housing supply chain – most particularly for those on lower incomes. When considering what “affordable” means, we need to consider all the costs that contribute to the weekly bills – mortgage / rent; energy; water; transport; and food. This is particularly relevant to the development of more compact urban planning to support this direction.

Successfully operating a house to achieve net zero emissions is ultimately down to the people who occupy them. People need to **choose** to live in more efficient houses and be **willing** and **able** to operate them in their most optimal way. Architects need to design and develop desirable homes, that are spatially and thermally efficient, and that are intuitive and clear in their operation. Good design seems to be the most important investment to be made in order to create a sustainable future, and enabling this needs to be embedded in all regulation to do with the built environment.

The outcomes of the research and discussions with key individuals raised a number of ideas that have prompted me to think about and refine how we practice architecture – both regarding how we work and how we design. This is an important work in progress that I hope to continue to develop over the coming years.

03: O'Neill Passive House, Sonoma County California



01



02

01: BRE Innovation Park. 02: BEDZED - Beddington Zero Emissions Building outside London, UK.

Good design seems to be the most important **investment** to be made in order to create a **sustainable future...this needs to be embedded in all regulation**

Caroline Pidcock is an architect with genuine interest and experience in sustainable built environments. This has been developed and enhanced through her involvement in a wide range of professional, academic and other commitments. This has included previous roles as President of the Australian Sustainable Built Environment Council; President of the Royal Australian Institute of Architects in NSW and National Councillor; Industry Representative on the Australian Building Codes Board; Member of the NSW Architects Registration Board; Member of Bicycle NSW Board; and adjunct professor/lecturer at a range of universities in NSW. She is interested in working through architecture to be proactive in developing a positive sustainable future for us all to live in. 2010 saw a planned re-focus on her practice, while undertaking travel and research involved with her Byera Hadley scholarship “The Architecture of (Net) Zero Emissions Housing”. She is now in the process of implementing the outcomes from this into her practice.

Seagram Lofts, One Open by ryanjamesanderson, <http://www.flickr.com/photos/ryananderson/223193295/> available under a Creative Commons License



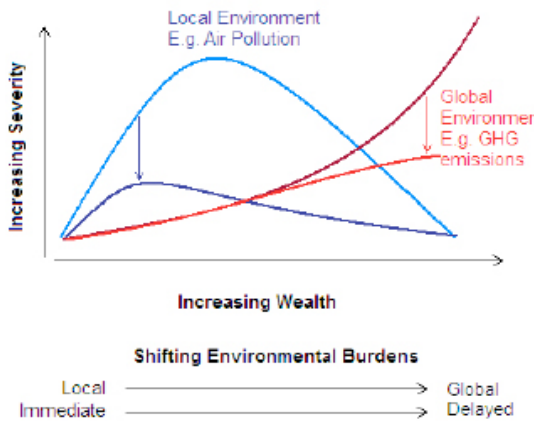
Windows of opportunity

*Urban development with co-benefits:
a project of the United Nations
University Institute of Advanced Studies*

Article by **Christopher Doll** and **Osman Balaban**

The United Nations University (UNU) is the academic arm of the United Nations supporting their activities around the world through research and education. The University was inaugurated in 1973 as an autonomous organ of the United Nations (UN) General Assembly. Its headquarters are in Tokyo, the only UN agency to have its headquarters in Asia. The UNU comprises 15 institutes in 13 countries, each focusing on a different thematic area of sustainable development such as global health, development economics, software technology and water resources. The United Nations University Institute of Advanced Studies (UNU-IAS) is based in Yokohama and focuses on policy making for sustainable development in areas such as biodiplomacy, traditional knowledge, the International Satoyama Initiative, Education for Sustainable Development (ESD) and Science and Technology policy.

This article describes a major project of the Sustainable Urban Futures Program called Urban Development with Co-Benefits, which covers five countries - Japan, India, Indonesia, China and Brazil and five sectors - energy, buildings, land-use, transport and waste. Here we lay out the concept behind the project and give examples of various case studies related to the built environment (buildings, land-use and transport) to demonstrate how co-benefits may be conceptualised and achieved during the planning process of infrastructure projects.



01: The traditional development path and the aim of the co-benefits approach for global environmental concerns (e.g. GHG emissions (red line)) and local environmental concerns (e.g. air pollution (blue line)). Adapted from Mc Granahan et al. (2001).

the rapid pace of urbanization especially in developing countries and the increasing demand for comfortable, safe and new buildings, it is expected that global and local environmental impacts (e.g. carbon emissions and air pollution) of the building sector will increase in the near future. In order to constrain such impacts and increase the contribution of the building sector in tackling environmental problems, principles of sustainable development should be applied to the entire cycle of construction activity. Sustainable construction and green buildings are the most recent concepts reflecting the concerns to reduce the adverse impacts of buildings on the environment. One of the purposes of the co-benefits research of UNU-IAS is to focus on buildings (more specifically green buildings) to find out how and what kind of co-benefits can emerge as a result of policy initiatives in the building sector. The case city of the research in the building sector is the city of Shenyang in China. China has recently become one of the biggest consumers of energy and emitters of GHGs in the world and its building sector is the second largest consumer of energy in the Chinese economy. According to the latest statistical yearbook of China released in 2009⁴, primary energy consumption and carbon emissions in China in 2008 were 2.656 million tons of standard coal equivalent and 6.500 million tons CO₂ equivalent respectively. Recently there have been significant developments in terms of issuing of new legislation in China to tackle the rapid increase in energy consumption and associated carbon emissions in the building sector. As part of the 11th Five Year Plan of the Chinese government, China's first national standard on energy consumption in buildings started to be implemented since August 2008. The standard requires residential, commercial and public buildings to reduce their overall energy consumption by 50% compared to 1980 levels. Besides, China has also launched the Three Star Green Building Evaluation Standard, which sets voluntary guidelines for building construction that raises standards above the previous building code. Despite being the largest heavy industry city in China with a population of 7.6 million inhabitants Shenyang was nominated by the central government in 2009 as the only national environmental model city based on the recent developments in the city to tackle global and local environmental problems. Shenyang city has implemented policies and introduced measures to create a more pleasant and comfortable living environment better integrated with the wider environment. Among these policies is the development of a green ecological corridor, which is 10 kilometers long, located along both banks of the Hunhe River, to create a waterfront city, as an exemplar of an ecological urban quarter. Shenyang is also one of the 56 local governments in East Asia that are currently members of the international network of cities named ICLEI – Local Governments for Sustainability. The co-benefits research aims to achieve an understanding of how co-benefits can emerge as a result of initiatives in the building sector and to develop a methodology to quantify the co-benefits of green buildings. Moreover the research is intended to shed light on the policy drivers and governance-related factors that facilitate and intensify co-benefits.

The Co-Benefits concept

Relentless urban development continues across much of the developing world and Asia in particular. In countries where economic growth is high along with the level of poverty are high, development priorities are geared towards providing infrastructure with little regard to climate concern.

Although co-benefits can have many meanings, in development terms it usually means achieving more than one outcome with a single policy. More specifically, in terms of sustainable development, we refer to the development and implementation of policies, which simultaneously pursue incorporation of both global climate (greenhouse gas emissions) and local environmental (e.g. air pollution) concerns into the development process. This is especially pertinent for developing countries that often pay little regard to their carbon emissions during the development process arguing that the need for development outweighs the concern to address climate change. In doing so, a classic development trajectory is embarked upon where countries set out to develop at the expense of local conditions such as air pollution. At some point in the development process, local conditions are addressed through investment and technological improvement. This is often referred to as the environmental Kuznets curve but crucially does not apply to carbon emissions which rise ever higher. The co-benefits approach attempts to tunnel through both curves (Figure 1), mitigating the local effects earlier and a lower level (blue line) whilst also constraining global greenhouse gas emissions (red line). The end result is that the settlements have smaller environmental footprints than would have otherwise been the case. Whilst the transfer of clean technology can address some of this, there are many multipliers that can be applied through the process which can enhance this effect.

The building sector: Shenyang case city

Urbanization is the movement of people from rural towns to cities, and the most direct outcome of this process is transformation of natural environment into urban built environment to meet various needs of urban residents. Buildings accommodate a wide range of functions, such as residential, commercial, office, industrial, etc. and constitute a significant part of the built environment in cities. At the same time, buildings can have significant environmental impacts and hence contribute to the overall environmental footprint of cities due in large part to the energy and resource consumption to construct, use and maintain buildings. For instance, over 10% of the world's freshwater withdrawals and 25% of its wood harvest are consumed by the building sector². Besides, 37% of total carbon dioxide (CO₂) emissions (671 million tons of carbon in 2003) and 10% of global emissions per year in North America are from the building sector³. Given

co-benefits means *achieving more than one outcome with a single policy*

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02: The elevated yellow line 6 of the Delhi metro connecting central Delhi to the satellite city of Gurgaon in the neighbouring state of Haryana.

03: One of the elevated lines of the Delhi metro and Kailash Colony station. Photography by Osman Balaban

it is the *linkages* between urban transportation & land use strategies where *large gains* can be made to *mainstream the co-benefits approach* into urban policy-making

Urban transportation infrastructure: The case of Delhi Metro

Current applications of the co-benefits approach are found mostly in the form of initiatives in specific sectors, such as transport and solid waste management. The transport sector accounts for 21% of world's energy-related CO₂ emissions, which is expected to increase up to 23% by 2030¹. Alongside GHG emissions, the transportation sector is also a major cause of air pollution. In Delhi, vehicular pollution is the major contributor to worsening of air quality, with 64% contribution to total pollution in the city in 1991 and 70% in 2000-2001². However, the pivotal role of the transport sector in the functioning of the city means it merits special attention not only due to its high contribution to environmental problems but also because of its potential to act as a multiplier for the co-benefits approach. Beyond the technical aspects of transport modes, it is the linkages between urban transportation and land use strategies where large gains can be made to mainstream the co-benefits approach into urban policy-making. The Delhi Metro Project in India has been selected as a case to understand the nature and extent of various co-benefits stemming from a transport infrastructure project and in particular, the role of transportation and land use integration in scaling up co-benefits.

Delhi, the capital city of India, has been exposed to major urbanization challenges since 1960. The population of Delhi was increased from 2.6 million in 1961 to 13.7 million in 2001³ and as per the projections; the city will accommodate 23 million people by 2021⁴. The massive growth of population in a short time span in Delhi has had significant outcomes, most importantly the rapid increase in number of motor vehicles and its associated problems. Between 1957 and 2002, despite the seven-fold increase in urban population, automobile population was increased 60-fold⁵. The increase in motorized transportation and the chaotic traffic situation on Delhi roads have resulted in serious problems such as air pollution, noise pollution, extreme traffic congestion, road accidents and last but not least GHG emissions.^{2,3,4}

Since mid-1990s there have been significant attempts in Delhi to address mobility-related challenges. In 1998, the Supreme Court of India decided to make CNG a mandatory fuel in public transportation in Delhi and ordered the state government of Delhi to complete the necessary changes in city's entire bus fleet by March 2001.² After 2000, initiatives were shifted towards mass transit-oriented infrastructure investments. The major initiative in this regard is the construction of a metro rapid transit system financed in large part by the Japanese Government.

Phase I and II of the metro system that consist of 6 lines with a length of 190 km have already been completed and presently carry 1.5 million passengers daily. The target is to complete the four phases of the metro covering 414 km by 2021. The expected ridership by then is 10.8 million passengers per day. Due to the concerns over total project cost, Delhi metro has been designed and developed to run primarily on an elevated-track above the main streets of the city (Figure 2 & 3). Only very short sections of the current network are underground in the centre of the city.

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04: Two examples of buildings with green curtains in Tokyo, Japan. Photography by Meltem Senol Balaban and Raquel Moreno-Penaranda.

The co-benefits of the Delhi metro can be quantified based on two features of the system. Firstly, the metro's rolling stock is equipped with a regenerative braking system, which generates electricity when brakes are applied feeding it back into the system. The electricity generated by trains in braking mode is used by trains in other modes of operation and in this way around 35% of electricity consumed by the Delhi metro is regenerated by the system¹. Co-benefits in terms of reduction in CO₂ emissions due to the regenerative braking system has already been calculated and formulated as a CDM project. As per the calculations and estimations made by the Delhi Metro Rail Corporation, the Delhi metro will help to reduce 41,160 tones of CO₂ emissions per annum between 2007 and 2017.¹ The existence of the regenerative braking system has made Delhi metro the first railway and metro rail project in the world to be registered as a CDM project.¹

The second feature of the Delhi metro to generate co-benefits is that the project has been improving the urban transportation infrastructure in Delhi in a way to reduce car and two-wheeler ridership. Since the start of the project, significant numbers of car and two-wheeler riders have shifted to the metro, which is more efficient than private modes in terms of energy consumption and average travel time. Modal shift from private modes to a metro system can help to reduce carbon emissions and pollution load of CO, HC, NO_x, PM and SO₂ in the atmosphere.

A third indirect benefit comes from the so-called transit oriented development, which concentrates development around metro stations, which if sensibly planned, can further decrease emissions by reducing the need to travel. As the co-benefits come through more indirect routes, it becomes increasingly difficult to precisely calculate the co-benefits as they are subject to ever increasing feedbacks from a larger number of actors. This research aims to develop a methodology to quantify the co-benefits generated by modal shift and also to find out the extent to which land use policies can enhance the co-benefits of such projects.

Green spaces as green infrastructure

An often overlooked part of city infrastructure comes in the form of natural elements that can be incorporated into the city layout as well as individual buildings. Urban development implicitly means the transformation of space from green to grey areas but policies and strategies regarding how green and blue (aquatic) spaces in the city are (re)created and managed can also yield co-benefits. Green areas not only make for more pleasant urban environments but play a role in cooling the city thereby lessening energy demand as well as sequestration of carbon through trees and soils.² Moreover green areas can absorb air pollution bringing accompanying health benefits.³ This is because trees can affect the microclimate in cities, which in turn affect the local production of certain pollutants. Ozone forming pollutants are also temperature dependent, making such strategies particularly pertinent for cities in warm climates. Urban cooling of this nature has been shown to reduce air-conditioning demand by up to 30% with the associated saving in energy generation.⁴ The presence of trees in New York city have been estimated to have mitigated some 1,820 tons of air pollution⁵ with urban forests sequestering some 800 million tons of carbon.⁶

The inclusion of both green roofs and green curtains are elements of this strategy that can be considered at the building scale. In Japan the Kyocera group, grows morning glory and goya (bitter melon) to form green curtains, which grow over trellises shading sections of the outer walls and windows of manufacturing and office buildings of the company throughout Japan (Figure 4). Having started in 2007, green curtains grown at their locations stretched a total length of 294 meters (965ft), covering a total area of 775m² (8,342ft²). According to company estimates, these green curtains will absorb an estimated 10,651kg of CO₂ (roughly similar to that of absorbed by 761 cedar trees) throughout their annual growth cycle.

**35% of electricity *consumed*
by the Delhi metro is
regenerated by the system**

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An 8m patch of *lawn* is estimated to produce the same *cooling* effect as one day's operation of an *air conditioning* unit.

On rooftops, plants release moisture and provide insulation, lowering temperatures both inside and outside buildings. An 8m² patch of lawn on a rooftop is estimated to produce the same cooling effect as one day's operation of an air conditioning unit¹. In early 2001, the Tokyo government enacted an ordinance that requires builders to plant greenery on the rooftops of new or reconstructed buildings of a certain size. According to government sources, the total area of green rooftops the city had reached some 19 hectares by June 2001. One of the largest projects in Japan is located in the Kansai-kan of the National Diet Library in Kyoto. In Singapore, a survey by the National Park system showed that rooftop gardens, (also known as skyscraper greening), was shown to effectively reduce ambient air temperatures by as much as 4°C². This insulation is important for cities which have a strong seasonal climate and high demand for both heating as well as cooling.

An additional indirect co-benefit of green curtains and rooftops is local food production, which besides providing a cooling function can also be a source of food³. Local food production helps reduce transport-related emissions from food (so-called food miles) and can also present new business opportunities (e.g. restaurants serving on-site produce on their menus capitalizing on increasing consumers' preference for "local" foods). Despite being one of the world's largest business concentrations, Tokyo city hosts significant amount of agricultural activities, lands and households that provide multiple social and environmental benefits. According to the estimations made by BILA (Bureau of Industry and Labor Affairs), vegetable and fruit production in Tokyo in 2005 were equivalent to 680,000 people's consumption⁴.

Cross-sectoral, multifunctional linkages emerging from green and blue space and infrastructure management can be especially relevant for mega cities of developing or emerging countries, as big shares of their urban residents are particularly vulnerable to climate change, pollution and derived health impacts, while enduring the lack of inclusive development.

Making use of storm water is one way to achieve co-benefits through blue infrastructure management. Storm water runoff ponds are an increasingly common method to collect and store urban waters. Sumida city is a district in Tokyo that concentrates the largest amount of rainwater collection and storage systems. The initiative was a collaboration between local government, NGOs and private sector⁵. Flooding is a major problem in many cities and the city of Curitiba (Brazil) provides an interesting example of an effective blue infrastructure management. Instead of controlling storm water flow by structural and concrete measures, the city has benefitted from natural drainage systems by converting former flooding zones into parks and lakes to contain and gradually release floodwaters⁶. The co-benefit potential of urban rainwater storage is because it can be used locally for irrigation (and thus improving urban green space), whilst reducing the need of drinking water dams. Dams are important contributors to global warming, which release 104 million metric tons of methane each year, about 4% of total GHG emissions⁷. Likewise, land use policies can lead to compact urban forms that facilitate the preservation of nearby resources (water catchment areas, forests, agricultural lands, etc.)

Coordinating approaches to maximize the co-benefits

Co-benefits can be generated through policy initiatives and projects in many different sectors of an urban system. However the conventional sectorial approach is where policy initiatives in different sectors are generally developed and implemented in

isolation from each other. At best this may end up with limited co-benefits at higher costs. At worst, a lack of coordination between policies in different sectors may even bring about conflicting outcomes. Co-benefits generated in one sector can be offset by policies in other sectors that are developed with little attention to the co-benefits approach. For instance, co-benefits originating from the development of a public transport infrastructure would be minimized in case of simultaneous initiatives that encourage private transport, such as provision of free of charge parking spaces in city centers. Therefore in order to scale up the co-benefits, it is advantageous to combine and coordinate initiatives across many sectors. The opportunities for co-benefits arising from integrated and coordinated approaches would be much greater than that of independent policies and projects. Such an approach could be achieved through an urban planning framework within which land use, spatial and transportation policies can be defined in a coordinated manner.

Besides the co-benefits approach, more fundamentally, sustainable development has the best chance of succeeding when consideration is given to the many elements of the city and the processes they embody. This article has laid out one line of current thinking in how to link the inevitable urban development that is occurring across the developing world and link it to wider considerations of both the local environment and global climate. Addressing this is a complex matter, in part because currently, city management is often not optimized to understand city processes and implement strategies in the way that has been described here. But also because it is not always the case that successful strategies in one city can be implemented elsewhere with similar results. Considerations on the wider governmental dimensions of co-benefits forms the next stage of the research, which aims to understand why things are successful in some places but not in others. The 'no one-size fits all' mindset is apposite here. Above all, city managers need a good understanding of their city and their capacity to implement change when considering which strategies to pursue. The co-benefits project aims to provide tools and insights which support this process.

Christopher Doll joined the United Nations University as a JSPS Postdoctoral Fellow with joint affiliation to the University of Tokyo. His primary research interest focuses on using spatial and temporal datasets to



understand the impacts of global urbanization at different scales with a view to developing sustainable development policies at the city level. Originally from the UK, he has a PhD from University College London in Remote Sensing where he specialized in extracting socio-economic information from night-time satellite data. He has held research positions at Columbia University (USA) and IIASA (Austria). Chris can be contacted at doll@ias.unu.edu

Osman Balaban is a Postdoctoral Fellow at the United Nation University - Institute of Advanced Studies. His fields of interest and research include urban planning, urban political analysis, sustainable and climate-friendly urban development. He is currently participating into research activities focusing on understanding what processes are important to make local and global environmental issues a policy priority for cities. He is a Turkish national and received his PhD degree from Middle East Technical University (Ankara, Turkey) in Urban Planning. Prior to joining UNU-IAS, he worked as an instructor at the same university.



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2. Singapore National Park Boards, personal communications.

3. Examples of food-producing rooftops include: (1) The True Nature Foods "Rooftop Victory Garden" for localized agricultural production was begun as Phase I in 2006. This project received a "City of Chicago Green Roof Grants Program 2005: Residential and Small Commercial Buildings" grant from the Department on the Environment toward realization of the vegetated roof, and has become a "poster project" of sorts for the grant program.

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The unmistakably
Zen Torii gates of
Japan. Photography by
Christopher Doll.

SHAKEN BUT NOT STIRRED

*Young researchers from around the world
come to Japan to exchange ideas on urban
sustainability challenges*

Sixteen PhD students were awarded scholarships to participate in the 2011 ProSPER.Net Young Researchers' School (YRS). Following the success of the first YRS held in RMIT Vietnam in 2010 the 2011 YRS was an interdisciplinary intensive school held in Hosei University, Tokyo, Japan from 1-12 August under the theme of "Learning from Japan's Experiences on Urban Sustainability". Four participants write about their experiences at the YRS and what they each took away from their two weeks spent in Japan.

Article by **Jessica Siva, Khalid Hossain, Tolu Muliaina** and **Richa Sharma**.

Jessica Siva, RMIT University

The 2011 YRS participants were diverse; originating from different countries and disciplinary backgrounds. Participants came from Australia, Bangladesh, China, Ethiopia, Fiji, India, Japan, Kenya, Malaysia, Pakistan, Samoa, Singapore, South Africa and Thailand. Their backgrounds were wide-ranging and included health, entomology, business, public policy, education, engineering, geography and construction.

I was one of sixteen lucky participants who were provided the opportunity to learn firsthand from Japan's experiences on urban sustainability. As we all know, on 11th March this year Japan experienced its most powerful earthquake on record at a magnitude of 8.9, triggering destructive tsunami waves which in turn caused a number of nuclear accidents. Many of us experienced the devastations through the media as we watched in shock and sadness countless videos and images of the terrifying explosions at the Fukushima nuclear plant and the relentless tsunami washing through the streets. But no amount of video watching seemed to prepare me for the reality of experiencing an actual aftershock. On our first night in Tokyo we experienced a 6.1 magnitude earthquake – I was asleep in my hotel room on level 9 when it happened. The country's rigorous earthquake building codes ensured that the vibrations I felt were minimal. Nonetheless it was enough to unsettle me, keeping me up for most parts of the night.

Despite the worry of earthquakes sitting at the back of my head I was excited about the start of the YRS and couldn't wait to meet the other participants. The YRS was officially opened by the President of Hosei University and the Programme Head of the UNU-IAS at Hosei University, Ichigaya campus which is located in the heart of Tokyo. Fresh-faced and enthusiastic we listened keenly to a welcome speech by the Deputy Director-general, Environmental Policy Bureau and a keynote speech by the Former State Minister, Director – General of Environment Agency. A public conference and panel discussion was held in the afternoon which included a presentation by the Mayor of Shinjuku district – one of the most popular wards of residence for foreigners in Tokyo.



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01 Public conference and panel discussion held on the first day of the YRS. 02 Opening ceremony at the Skyhall. 03 The view from the Skyhall, Hosei University Ichigaya campus. Photography by Aurea Christine Tanaka and Christopher Doll.

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Following a fairly intensive fieldtrip on the second day, we made our way to Hosei University, Tama campus where we spent our next ten nights. Although only over an hour of driving from central Tokyo, the Tama campus felt like it was a world away from the hustle and bustle of the city. Over the following ten days a series of lectures and fieldtrips were conducted to provide context and content for us to develop research proposals in groups on the challenges and opportunities in transferring sustainability practices across geographical and disciplinary boundaries. We formed three groups, each developing a research proposal in the areas of policy, technology and knowledge. Apart from the development of research proposals we also took part in a 3-minute thesis competition where we presented our PhD research in under three minutes using only one PowerPoint presentation slide each. We were accompanied by a core team of resource persons throughout the entire programme, who coordinated and facilitated group work sessions and presented a number of lectures.

Quite quickly we found ourselves settling into a happy daily routine of morning lectures, discussions over rather long lunches and regular forest walks. We maintained a consistent enthusiasm in our mission to learn and contribute to the sustainability debate, sharing research ideas (and the occasional break-up story!) over countless cups of coffees. By dinnertime each day I was often amazed by the amount of energy people still had particularly as we got closer to the end of the programme when group discussions would sometimes continue till well after dinner.

We moved back to central Tokyo on the final day which coincided with International Youth Day where more than 40 young scholars from Germany and 16 from throughout Asia came together to exchange ideas on challenges relating to global sustainability. The event which was aimed at inspiring students to engage with sustainability research was co-organised by the UNU-IAS, Hosei University and the German-based NGO iuventum and held at the United Nations University's Headquarters in Tokyo. Based on a "youth speaking to youth" approach the day's programme centred around academic work and encouraging stories to demonstrate how young researchers can develop practical solutions within their own spheres of influence to address global sustainability problems. Towards this end, three of the key activities included the PhD Panel discussion, 3-Minute thesis competition and research proposal presentations. It was indeed an inspirational day and a most fitting way to end the YRS.

There was much to be learnt from our time spent in Japan. For me, the YRS definitely achieved its aims and then more. Two weeks may seem brief but the bonds developed between participants will last a lifetime. Camaraderie develops very quickly when you spend so many waking hours together particularly when days are as long as they were at the YRS. The stimulating conversations shared will stay with me for a long while. Something else that I've taken away with me is the Japanese spirit of resilience – the capacity to bounce back and positively deal with adversity. There seemed to be a common theme running across the various lectures and discussions where disasters and challenges were often discussed and presented as "opportunities for change". The recent earthquakes, tsunami and nuclear disasters may have shaken the nation but there are hardly signs of its people being stirred!



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01 The "knowledge" group working on their research proposal one night. 02 YRS participants and resource persons on one of the many fieldtrip bus rides. 03 Inside the lecture theatre, Hosei University - Tama campus with the forest view as a backdrop. 04 During one of the afternoon discussion sessions. Photography by Aurea Christine Tanaka and Christopher Doll..

Khalid Hossain, RMIT University, Australia

As discussions concerning greenhouse gas emissions of large cities continue to escalate, the efficient use of public transport systems is increasingly seen as a viable solution to reduce emissions. During my visit to Japan, I was very keen to learn about how the Japanese government encourages the use of public transport in terms of policies and measures towards reducing emission. Little did I know that I was standing in the busiest train station in the world while I was visiting Shinjuku train station. I have since uncovered that Shinjuku is registered with the Guinness World Records as the busiest train station in the world in terms of number of passengers using the station. It was hard for me to distinguish Shinjuku from any other train stations in Tokyo as each station I visited seemed very busy to me. I also thought that the railway network and public transport system seemed to be delivering the services with very high efficiency.

Over the course of my two weeks in Japan it became obvious to me that many of the supportive measures in place to encourage public transport use in Japan are based on sound policies. One such policy is to invest heavily in the development of infrastructure for public transport and ensuring adequate maintenance of the infrastructure. In this regard, Japan is a pioneer in the efficient use of limited space in how transport networks are built at different levels including underground rail network, ground level rail and bus networks and elevated rail and bus networks. Through this integrated network system, a large number of passengers are served without causing unnecessary delays in traffic jams. The Japanese government also imposes high tax rates on gasoline purchase through its fiscal policy. This works as a disincentive to the use of private transport in comparison to the cheaper and more efficient public transport. Moreover, the Japanese Government places strict car parking controls by charging very high parking fees and prohibiting parking on street in front of houses.

When Japan started to build its public transport network its main objective was not concentrated on reducing greenhouse gas emissions. However, given the current global climate change problem, Japan's supportive policy and measures to encourage public transport use is significantly contributing the country's efforts to reduce greenhouse gas emissions. This is a very important learning that many newly emerging economies can take from Japan as they increasingly move towards developing more urbanised populations.



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03 The PhD Panel speaking at the International Youth Day. 04 Official welcome and opening of the International Youth Day. Photography by Aurea Christine Tanaka, Christopher Doll and Bee Ting Low.

01 The finalists of the 3-Minutes Thesis Competition. 02 The "technology" group presenting their research proposal. Photography by Aurea Tanaka.



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Richa Sharma, TERI University, India

India being a developing nation is facing many challenges in its path towards sustainable development. I am working on the phenomenon of Urban Heat Island (UHI) that is an outcome of typical urban climate wherein urban areas experience higher temperatures as compared to the surrounding sub-urban and rural areas. The YRS provided me with a platform where I was able to explore how my research can contribute in achieving a Sustainable Urban Society.

Going by the theme of the school of learning from Japan's experiences on urban sustainability, I learnt many lessons through the YRS. Given my personal interests and background I was particularly impressed by the measures undertaken for the UHI mitigation in Japan. For instance, the use of DHC or District Heating and Cooling system which produces heating and cooling energy at one or more sources and subsequently via pipelines to 'district' users. This also keeps the building roofs vacant and makes space for green roofing, thus creating dual ways to mitigate the heat island effects. Also there were good examples of green roofs and green walls in the city. Apart from these the Japanese also try to conserve and employ the concept of Satoyama, which is a community-managed attempt to preserve greenery in the area. Apart from fostering biodiversity these also immensely contribute in reducing surrounding temperatures. These measures help minimize the effects of UHI and thus reduce the energy consumption of buildings. Ultimately decreased energy demands by buildings helps to reduce its urban footprint in the long run.

The effective waste management system of the Japanese in particular attracted my attention during my stay there. The separation at source system (SaSS) has been demonstrated to be very effective in contributing to a resource re-circulating society. The in situ waste separation system is highly commendable as it saves a lot of energy use that goes into waste separation processes. Taking inspiration from this, our group worked on the development of a research proposal for policy transfer to encourage the application of the separation at source system in India. Our group proposed the framing of a policy that seeks promotion of the separation of waste at source and to generate energy from the waste.

Tolu Muliaina, University of South Pacific, Fiji

On one of our fieldtrips we visited the Urban Design Centre Kashiwa-no-ha (UDCK). The UDCK is involved with the planning and development of the Kashiwanoha Smart City, which is meant to be an environmentally friendly city. The Kashiwanoha Model has been created by a number of industry-leading companies to create a problem-solving city which makes maximum use of nature's power through coexistence with the environment and the use of state-of-the-art technologies resulting in a new way of life to the community. The Smart City Project is ultimately aimed at resolving global environmental and energy issues as well as social issues following disasters.

The UDCK is a testimony of Japan's continuous efforts to achieve Urban Sustainability. Having been born and raised in Samoa and then living in Fiji for the past 18 years, I think that the islands in the Pacific can definitely learn some lessons from the UDCK experiences. Firstly, the UDCK championed the involvement of the local residents in the various stages of the project planning and implementation. Such citizen engagement and partnerships with other stakeholders is crucial and can be particularly empowering for those involved. It also instills a sense of ownership and pride amongst the community, a prerequisite for success. Secondly, the commitment to an ecologically friendly city labeled 'Future City' is golden. Being ecologically conscious in our approaches to using the environment is not only necessary but key to keeping the environmental impacts of our actions to the minimum. Countries in the Pacific can learn from this accelerated passion for environmental sustainability. In pursuing this, we are not just committed to managing our small fragile urban areas to make them livable and sustainable in the short term but more so in light of the onslaught of sea-level rise in the future. Finally, while the UDCK experience may depict a 'rosy' and idealistic vision I hope that the use of the word 'eco' in this project truly reflects the planners' genuine environmentally friendly goals rather than being used as simply a marketing ticket to lure new residents to its high-rise condominiums and attract new consumers to what Kashiwa-no-ha's promises of new shopping and living experiences.



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01 The group of YRS resource persons. 02 The YRS participants' final night in Japan. 03 The Urban Design Centre Kashiwanoha. Photography by Magali Dreyfus and Bee Ting Low.



Jessica Siva is a recipient of an Australian Postgraduate Award to undertake a PhD in the School of Property, Construction and Project Management, RMIT University, Australia. Prior to this she obtained a Masters of Philosophy (Architectural Management) from the University of Newcastle.



Md Khalid Hossain is a PhD researcher in the School of Management, RMIT University, Australia with an Australian Leadership Award. He earned his Master of Diplomacy and Trade degree from the Monash University, Australia as an Australian Development Scholarship scholar in 2006.



Richa Sharma is a PhD researcher at the Department of Natural Resources, TERI University, India. She completed a masters in Environmental Sciences and has worked as a Project Executive for an EIA Consultancy. She is now a research fellow in the Department of Science and Technology.



Tolu Muliaina is a PhD researcher at the School of Government, Development and International Affairs at the University of the South Pacific, Suva.

MEMBER PROFILES

Three CIOB Members tell us a little about themselves - what they do at work and why they value their CIOB membership.



PENELOPE O'HAGAN

The University of Newcastle

After having taught for six years both in Queensland and the UK I decided that it was time to follow my childhood fascination with buildings and enrol in a Civil Engineering degree at the University of Newcastle. After attending a Women in the Built Environment Forum and listening to a young female Project Manager speak with such passion and enthusiasm for her career, I quickly realised that I was in the wrong degree.

I sought advice from a Senior Lecturer from the Construction Management faculty and organised to change my enrolment for the following semester. Seeking this advice was the best decision of my student career. Not only did I receive a new direction which better aligned with my strengths, I also gained a wonderful mentor who introduced me to the CIOB who have since provided site visits and additional resources to enrich my learning.

I have been very fortunate in both my student and work lives to find inspiring mentors. I began a cadetship with NSW Public Works in 2008 and was welcomed into two teams of people who genuinely care about - not only the work that they do but - the people that they work with. Whilst I have been involved in several teams within the organisation and have worked on several large scale projects, my career highlight to date was the opportunity to project manage two small school projects. This opportunity has opened my eyes to what is involved in the life-cycle of a project and the importance of emotional intelligence to manage those 'difficult' phases.

I graduate at the end of the year with a Bachelor of Construction Management (Building) Honours and have accepted a Graduate Cost Engineer position with Worley Parsons in Brisbane. I look forward to the challenges of this new position and the ability to attend networking events no longer as a 'student'.



LINDSEY PREHN

Collin Biggers Paisley (CBP) Lawyers

Having always been interested in the law and architecture my enthusiasm for both were cemented when I was taken on my first site visit to the construction of one of Sydney's major toll roads as a summer clerk in my penultimate year of law at university.

Upon graduating law in 2001, I joined Minter Ellison and was given a fantastic opportunity to explore both planning and environment, litigation and construction law and work with some amazing lawyers Australia wide on a range of different aspects of development.

From Minter's I spread my wings a little further and moved to the UK where I worked in London for Herbert Smith and Dundas & Wilson to get a taste of how they do things in the other hemisphere. That chance to experience a different jurisdiction, the size and complexity of different projects and the breadth of procurement methods used only further confirmed my love of construction and first exposed me to CIOB.

When I returned to Australia in 2009, I was excited to join CBP's Construction and Engineering Group which has the largest specialised construction and engineering practice in Australia.

As a Senior Associate at CBP, I regularly assist clients with issues arising in both the construction, engineering, infrastructure and mining industries. My typical day could involve negotiating, drafting or advising on project documentation or resolving disputes through arbitration, expert determination, adjudication or litigation.

Having been introduced to CIOB in the UK I knew it to be a highly respected industry body and was keen to become a member when I returned to Sydney to keep in touch with current industry issues and reconnect with those construction professionals I'd worked with before leaving for the UK. Since becoming a member I've had the opportunity to meet some great people both in NSW and from across Australia and look forward further developing my skills and knowledge through networking with other construction industry professionals.

In addition to CIOB, I'm also a member of the National Association of Women in Construction (NAWIC), the Society of Construction Lawyers Australia (SOCLA) and the Institute of Arbitrators & Mediators (IAMA).

since becoming a member I've had the opportunity *meet some great people* both in NSW and across Australia

CIOB has provided *site visits* and additional *resources* to *enrich my learning*



STEPHEN MARCH

SGA Property Consultancy

Although a construction manager by university degree, my current role is Senior Building Consultant for SGA Property Consultancy. Although we call ourselves building consultants at SGA, the role is similar to (and based upon) the UK model of building surveying. SGA Property Consultancy is one of the largest employers of Chartered Building Surveyors in Australia with offices in various cities throughout Australasia.

I started working at SGA Property Consultancy in 2004 when I commenced my third year at university. I was studying a Bachelor of Construction Management at the University of Newcastle and in my second year met with representatives of the CIOB. As I entered University straight out of school, I realised I did not have any contacts in the construction industry or any real experience and saw a student membership with the CIOB as an opportunity to meet with industry people in order to obtain my first job.

During a CIOB networking function at the end of 2003, I was introduced to one of the directors of SGA. We discussed about how difficult it is to 'get your foot in the door' in the construction industry; towards the end of the event I was offered a job interview. I commenced working in 2004 on a semi-full time basis, working four days a week and using the other days to complete my studies by correspondence. I finished my final year of university by correspondence as I was relocated to Auckland to assist in developing our Auckland office. I completed my bachelor degree with honours in New Zealand. I can therefore say that utilising a student membership to any industry body is a fantastic way to meet possible future employers.

Since commencing work with SGA, I have seen the company grow from 5 people in a 80m² office, to about 40 people over 6 offices. As discussed previously, I assisted with the development of our Auckland office; I have more recently been involved with the expansion of our Brisbane office. I have been the project manager of the fitout of our Sydney and Auckland offices and currently issuing the contract for our new Sydney office.

Although a typical day does not exist in the role of a building consultant, regular tasks or roles can include meeting with clients, reviewing reports, understanding client requirements or briefs and developing fee proposals, undertaking inspections of existing building stock and construction sites and preparing reports. The various types of reporting involved as a building consultant (Building Surveyor) can include schedules of condition, schedules of dilapidations and technical due diligence reporting.

We are also heavily involved with undertaking project management or contract administration roles for construction projects of various sizes and complexities. Whether it be the installation of an inter-tenancy wall, or making good or refurbishment of a commercial office or industrial warehouse. The various roles involved with being a project manager or contract administrator involve;

- Understanding the client's requirements and preparing scopes of work for tender
- Issuing and reviewing tenders
- Awarding and preparing contracts for work
- Chairing site meetings issuing minutes
- Review and certification of variations and progress claims
- Inspections of work progress and associated reporting to clients
- Defect reporting
- Certification of practical completion certificates.

I look at my association with the CIOB as a window for opportunities to meet new people and colleagues in the construction industry; as well as an avenue to develop a greater knowledge of the new practices, tools and directions which the industry is going. I would also like to one day improve work further outside of Australia (maybe even the UK) and I believe that being associated with the CIOB will assist in greater recognition of my abilities/capabilities in whatever country I choose to work in.



Image by Geraldine Liew.

I look at CIOB as a *window of opportunities to meet new people in the industry*' as well as an avenue to develop a *greater knowledge of the new practices, tools and directions* the industry is going

professional & industry news

Building Energy Efficiency Disclosure: it's now mandatory to go green

What is the Building Energy Efficiency Disclosure Act 2010?

The Building Energy Efficiency Disclosure Act 2010 (BEEDA) builds on existing benchmarks for energy efficiency by imposing mandatory obligations on owners and lessees to disclose certain information when selling or leasing office space. While the full effect of the provisions in BEEDA will not be in force until 1 November 2011, the 12 month transitional period commenced on 1 November 2010, so it is important to be aware of how this legislation might affect your business' obligations and office space.

Why is it important?

BEEDA requires owners or lessees of "affected" commercial office buildings to disclose information relating to energy efficiency prior to a sale, lease or sub-lease of the premises. The purpose of BEEDA is to enhance the amount of meaningful information available to prospective purchasers and lessees of commercial office space and to consequently encourage owners to be more energy efficient in the maintenance of their buildings.

Does BEEDA apply to me?

Commercial office spaces with at least a net lettable area of 2000m² that are for sale, lease or sublease are covered by BEEDA. The following are exceptions to BEEDA:

- buildings that are new or have had a recent major refurbishment (Building Energy Efficiency Disclosure Determination 2010) and a certification for occupation was issued less than 2 years ago;
- strata titled buildings;
- buildings with total office space comprising less than 75% of the

building by net lettable area;

- sale of a building through the sale of shares or units;

- short term leases of 12 months or less.

By way of example, an average large office building of 40 or so floors may have a net lettable office space of anywhere up to 70,000m², which would fall within the ambit of BEEDA.

What do I have to do?

During the transitional period, owners and lessees are required to obtain a National Australian Built Environment Rating System (NABERS) energy star rating before the proposed sale or lease of an affected building and are required to display this rating on all advertisements. The NABERS rating is based on information collected about the building over a 12 month period and is assessed by an accredited assessor. After 1 November 2011, a Building Energy Efficiency Certificate (BEEC) will need to be obtained before the property is offered for sale or lease, advertised or promoted. The BEEC will include the NABERS rating, an assessment of lighting and general energy efficiency guidance.

How do I obtain a BEEC?

An accredited assessor will carry out an assessment and submit this information to the issuing authority to obtain the BEEC.

What happens if I don't comply?

BEEDA imposes a range of penalties for failing to comply with its provisions. In particular, a civil pecuniary fine of up to 1000 units (\$110,000) can be imposed for not obtaining a BEEC (or NABERS rating during the transition period). For every day that the contravention continues, a separate contravention occurs

to a maximum of 100 penalty units (\$11,000) each day. If an owner or lessee does not comply with a request from a purchaser or lessee under section 12 to view a copy of the BEEC, a penalty of up to 350 units for an individual (\$38,500) and 1000 units (\$110,000) for a corporation may apply. Infringement notices with pecuniary penalties may also be issued.

What is the "Tax Breaks for Green Buildings" scheme and how do I become eligible?

While BEEDA is considered to be an important step towards raising awareness of energy efficiency in commercial office buildings, one of the impediments is the cost of retrofitting existing buildings to improve their NABERS rating. To alleviate these concerns and encourage refurbishment, the government has announced the Tax Breaks for Green Buildings program. \$1 billion in tax cuts has been set aside for the program across 4 years to 30 June 2015. It proposes a one-off bonus tax deduction of 50 per cent of the cost of eligible improvements, on top of the normal capital allowance deduction. There is a stringent application process to be followed and the tax deduction will apply only when the NABERS rating increases from 2 stars to 4 stars or more. The program is currently in the consultation and reporting phase and further details are expected to be announced soon.

Lindsay Prehn, Senior Associate

Tracy Kingsbury, Graduate at Law
CBP Lawyers

Environmental ratings for buildings

The NABERS - National Australian Built Environment Rating System - rating scale has been extended from 5 to 6 stars to recognise market leading performance. NABERS is a national program, administered by the NSW Office of Environment and Heritage which includes tools for Energy, Water, Waste and Indoor Environment. A 6 star rating is awarded for Market Leading performance and represents a 50% reduction in greenhouse gas emissions or water use from a 5 star rating. To find out more about the introduction of the NABERS 6-star rating and buildings which have earned 6 stars visit www.nabers.com.au.

Certification fees

The NSW Department of Planning and Infrastructure implemented a fee for the issuing of a BASIX certificate. BASIX - the Department's Building Sustainability Index - was introduced in July 2004 and has been highly effective in reducing the energy and water usage of residential development throughout NSW. The fee for BASIX certificates issued for new dwellings began on July 1, 2011 and for alterations and additions on August 1, 2011. For more information visit www.basix.nsw.gov.au

Residential Building Mandatory Disclosure

In 2009 the Council of Australian Governments (COAG) committed to the introduction of a residential building mandatory disclosure scheme across Australia. The COAG is working to investigate the benefits and costs of implementing legislation which would require that energy, water and greenhouse gas information be disclosed when a property is placed on the market for sale or rent. The scheme is expected to commence in 2012 with an extensive public consultation process in 2011. For updates visit www.mce.gov.au.

Software tools for rating energy efficiency

The NatHERS - Nationwide House Energy Rating Scheme - National Administrator is currently reviewing the modeling results of new versions of BERS Pro and First Rate 5, two software tools used to rate the potential energy efficiency of Australian homes. In the meantime the current versions of First Rate 5 (Version 5, Build 215) and BERS Pro (Version 4.1) provisional accreditation will be extended from the current expiry date of 31 March to a date no later than 30 September 2011. For updates on expiry of provisional accreditations and information regarding new versions of software tools visit www.nathers.gov.au.



Image by Geraldine Liew.

Security of Payment: Are you at risk of being served?

Emails have become an increasingly frequent means of communicating in the building industry, including the sending of documents such as payment claims and payment schedules issued under Security of Payment legislation. The increased use of email has in many cases created uncertainty for both the senders and recipients of payment claims, payment schedules and other documents. With that uncertainty comes greater risk (including potentially serious financial consequences) depending on whether there has been valid service by email.

In New South Wales, where Security of Payment legislation has been in force for over ten years, whether a document sent by email has in fact been validly served will, in general terms, turn on the relevant facts in each case.

In the Australian Capital Territory, where Security of Payment legislation came into force for the first time less than a year ago, the position on service by email is clearer, but potential recipients of documents must exercise great care to ensure that documents received by email are actioned within the appropriate time periods after receipt.

New South Wales
Section 31 of the Building and

Construction Industry Security of Payment Act 1999 (NSW Act) identifies various methods of serving documents under the NSW Act but does not explicitly refer to service by email.

However, section 31(1)(e) of the NSW Act provides for service "in such other manner as may be provided under the construction contract concerned." If the construction contract in a given case provides for service of documents under the contract by email, it may be argued that service by email is a valid method of service. To minimise uncertainty, a term in a construction contract permitting service by email would ideally indicate that payment claims and other documents issued under the NSW Act may be served by email (not just progress claims or other documents issued under the contract) and would designate specific email address(es) for service. The contractual term would also ideally set out the parties' agreement as to when a document sent by email is to be treated as having been received.

Whether or not the parties have made provision in the contract as to specific matters relating to service by email, disputes may still arise between the parties as to whether a document was validly served by email and whether it was served in

time, depending on the facts in each case.

If the construction contract does not permit service by email, it may still be possible to establish by other laws relating to service that a document sent by email was validly served under the NSW Act. If it can be shown that:

- the recipient consented to the information in the document being given by email; and
- it was reasonable to expect at the time the email was sent that the information would be readily accessible to that person to be used for later reference, a sender may argue that the Electronic Transactions Act 2000 applies and that a document sent by email has been validly served under the NSW Act.

In this regard, "consent" may be established if it can be inferred from conduct (such as the regular exchange of payment claims and payment schedules by email). If the provisions of the Electronic Transactions Act 2000 apply (and unless the parties agree otherwise)

- a document sent by email to a designated email address (such as one provided for in a contract) is received when it becomes capable of being retrieved by the recipient; and
- a document sent by email to an email address other than a designated email address is received when:

- the electronic communication is capable of being retrieved by the recipient at that address; and
- the recipient becomes aware that the communication has been sent to that address.

In the absence of any agreement by the parties as to when an email is received, then, an email attaching a payment claim, for instance, would likely be considered to have been received at or shortly after the time that the email is sent to the designated email address. It would not be necessary for the individual with the designated address to be aware of the email having been sent.

In summary, the position in NSW regarding validity and timing of service by email is largely dependent on the particular facts in each case. Great care must be taken when documents under the NSW Act are sent and received by email.

Charles Brannen
Senior Associate, CBP Lawyers

To read the full article visit: <http://www.cbp.com.au/Portals/0/052611%20Construction%20Newsletter%20JUNE.pdf>

Templates for environmental rating

The Green Building Council Australia (GBCA) recently released the first series of standard templates to provide clear guidance on format and content requirements, making it easier for project teams to compile Green Star submissions. The first suite of templates for the Innovation category can be downloaded from the GBCA website at www.gbca.org.au.

NZ National

Infrastructure Plan
New Zealand's National Infrastructure Plan was released in July 2011 which outlines the Government's intentions for infrastructure development over a 20 year timeframe. The plan sets out six guiding principles to respond to infrastructure challenges in five key sectors including transport, telecommunications, energy, water and social infrastructure. For further information visit www.infrastructure.govt.nz

New Work Health and Safety Laws

In May 2011, the NSW Government introduced the Work Health and Safety Bill. Currently there are nine different work health and safety laws across Australia. All states and territories have committed to working towards uniform safety standards across Australia (NSW WorkCover Authority of NSW). For more details on the changes visit www.workcover.nsw.gov.au



RMIT CIB Student Chapter Launched

The CIB Student Chapter Committee recently approved the establishment of a CIB Student Chapter at the School of Property, Construction and Project Management, RMIT University. CIB - International Council for Research and Innovation in Building and Construction - was established in 1953 with the support of the United Nations to stimulate and facilitate international cooperation and information exchange between governmental research institutes. CIB is a worldwide network of over 5000 experts from 500 member organisations with research, university, industry or government background. There are over 50 CIB Commissions extending over all areas of building and construction research and innovation.

The CIB Student Chapter was officially launched on 6th September 2011. It seeks to provide a support network for postgraduate and undergraduate students in the dissemination and sharing of research interests, skills, experiences and capabilities. It serves as a platform to showcase the research identity, work and activities of its members and to engage with the wider academic community and industry.

Membership of the RMIT Student Chapter is open to all postgraduate and undergraduate students (Honours level) involved with research-based activities. The Chapter runs regular meetings which are chaired by the President, Jessica Siva and minuted by the Secretary, Peng Zhang. The election of the Committee Members was held in March and will take place on an annual basis. Three RMIT staff members act as Student Chapter Advisors and they are Professor Kerry London, Dr Tayyab Maqsood and Dr Malik Khalfan.

For further information on the CIB visit www.cibworld.nl. For more details on the RMIT CIB Student Chapter visit rmit_cib_student_chapter@googlegroups.com



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Bond University student wins Scholarship

Georgina Pye from Bond University has been selected to receive funding for the Queen Elizabeth II Jubilee Fund Scholarships 2011. The CIOB Queen Elizabeth II Jubilee Fund Scholarship is granted for academic excellence and leadership potential to bright, motivated and ambitious individuals who show the potential to succeed in the construction industry. These awards are made to students who have shown potential in the early part of their studies and are intended to provide study support during their final year.

A requirement of each scholarship is that the recipient and host institution agree to undertake and submit to the CIOB, for possible publication, a major piece of work undertaken during the final year, as part of the programme of studies. The scholarship does not require the recipient to carry out work over and above that required to attain their degree award. The total value of the scholarship is the sum of £500.00 and a CIOB engraved medal. Congratulations to Georgina on receiving this scholarship award!

Research on anti-corruption

CIOB Incorporate member James Polkinghorne recently submitted a dissertation as part of an MBA in Construction and Real Estate. The following abstract has been provided by James:

"This dissertation was focused upon the construction industry of East Asia and attempts to demonstrate that ethical companies face increasing opportunities to be successful due to the region's reduction in tolerance levels towards corruption. A combination of research questionnaires, interviews and comprehensive desktop study were undertaken to prove this theory to be correct.

This study proves that a shift in mentality is taking place within East Asia. It demonstrates that increasing levels of transparency are being attained within the industry with a high degree of optimism is held for the further success of ethical companies. It reveals that a powerful combination of factors are reducing tolerance levels towards corruption within the region, such as legislative reform and enforcement, greater empowerment of whistleblowers and more focused industry participation in promoting anti-corruption initiatives.

It also reveals that a strong correlation exists between economic development and the corresponding corruption levels within a country, disproving the theory that corruption is a natural cultural trait common within East Asian society. The simple outcome of this research sends a clear message to companies operating within East Asia's construction industry: ethical practice makes good business sense".

For further details please contact James at James.polkinghorne@gmail.com



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01 The RMIT CIB Student Chapter members

02 The President and Academic Advisor at the recent launch of the RMIT CIB Student Chapter.

Free access to journal articles

Construction Management and Economics (CME) is the leading international refereed journal that publishes original research concerning the management and economics of building and civil engineering, while also including the management of built facilities. The publishers of CME offer one paper per issue available for free download for three months in each case. To download these free articles as well as to keep up to date with current developments visit: <http://cmeforum.wordpress.com/category/free-access/>

Events

2011 Dates for Your Diary: Events and activities presented by CIOB Australasia and our network of associated organisations.

For further information please contact your Centre Chair. Contact details are found in the About Us section on our website or visit <http://www.ciob.org.au/about>

For other queries regarding our events please email events@ciob.org.au or telephone 612 9816 4700

NEW SOUTH WALES

14 Sept
CIOB Social Networking Night - **SYDNEY**

Contact your Centre Chair for further details

27-28 Sept

Integrated Policy & Planning Metropolitan Development. For further details visit <http://www.metropolicyplanning.com/index.php>

Citigate Central Sydney, 169-179 Thomas St, Sydney

12 Oct

NAWIC MCA Site Tour. For further details, please visit www.nawic.com.au

140 George St, The Rocks, Sydney

12 Oct

CIOB Social Networking Night - **SYDNEY**

Contact your Centre Chair for further details

26 Oct

NAWIC 'The Great Debate', hosted by Laing O'Rourke - **SYDNEY**. For further details visit www.nawic.com.au

9 Nov

CIOB Social Networking Night - **SYDNEY**

Contact your Centre Chair for further details

28-30 Nov

Tonkin's 'Retrofitting for Commercial & Environmental Sustainability' 3 Day Conference. For details visit <http://www.tonkincorporation.com/>

Grace Hotel, Sydney

14 Dec

CIOB Social Networking Night - **SYDNEY**

Contact your Centre Chair for further details

QUEENSLAND

14 Sept

CIOB Social Networking Night - **BRISBANE**

Contact your Centre Chair for further details

9-12 Oct

AIPM 25th IPMA World Congress. For further details visit <http://www.ipma2011.com/>

Brisbane Convention & Exhibition Centre

12 Oct

CIOB Social Networking Night - **BRISBANE**

Contact your Centre Chair for further details

9 Nov

CIOB Social Networking Night - **BRISBANE**

Contact your Centre Chair for further details

21-23 Nov

Tonkin's 'Retrofitting for Commercial & Environmental Sustainability' 3 Day Conference. For details visit <http://www.tonkincorporation.com/>

Park Regis Hotel North Quay, Brisbane

24-25 Nov

Urban Congestion Summit - solving the urban transport crisis. For details visit <http://www.acevents.com.au/urbancongestion2011/>

Hilton Brisbane

14 Dec

CIOB Social Networking Night - **BRISBANE**

Contact your Centre Chair for further details

VICTORIA

7 Oct

NAWIC VIC/TAS 2011 Awards for Excellence Dinner. For further details visit www.nawic.com.au

Grand Hyatt Hotel, Melbourne

7 Oct

AGIC National Conference 2011: Our Brave New World. For further details visit <http://www.agicconference.com/index.html>

Intercontinental Melbourne Rialto, 495 Collins St, Melbourne

25-27 Oct

Retrofitting for Energy Efficiency. For further details visit <http://www.retro-fitting.com.au/>

Tenancy 15, Docklands, Melbourne

17 Nov

The Energy Efficiency Council National Conference. For further details visit http://www.eec.org.au/events/National_Conference_2011

Hilton on the Park, 192 Wellington Parade, Melbourne

WESTERN AUSTRALIA

14 Sept

CIOB Social Networking Night - **PERTH**

Contact your Centre Chair for further details

15 Sept

AIPM One Day Conference and PMAA Cocktail Party. For further details visit www.aipmwa.com.au or email wa_chapter@aipm.com.au

Perth Convention & Exhibition Centre

21 Sept 4-5pm

CIOB and Curtin University Construction Industry Information Evening and Awards Presentation

Curtin University, Chessell

Drive, Perth

7 Oct

NAWIC 2nd Crystal Vision Awards Night. For further details visit www.nawic.com.au

Bells Functions, Barrack Street Jetty, Perth

12 Oct

CIOB Social Networking Night - **PERTH**

Contact your Centre Chair for further details

9 Nov

CIOB Social Networking Night - **PERTH**

Contact your Centre Chair for further details

14 Dec

CIOB Social Networking Night - **PERTH**

Contact your Centre Chair for further details

NEW ZEALAND

14 Sept

CIOB Social Networking Night - **AUCKLAND**

Contact your Centre Chair for further details

12 Oct

CIOB Social Networking Night - **AUCKLAND**

Contact your Centre Chair for further details

9 Nov

CIOB Social Networking Night - **AUCKLAND**

Contact your Centre Chair for further details

16 Nov

Joint CIOB & ICE in NZ 'Risk Management' Workshop - **CHRISTCHURCH**. Visit www.ciob.org.au/events for further details.

23 Nov

Joint CIOB & ICE in NZ 'Risk Management' Workshop - **WELLINGTON**. Visit www.ciob.org.au/events for further details.

24 Nov

Joint CIOB & ICE in NZ 'Risk Management' Workshop - **AUCKLAND**. Visit www.ciob.org.au/events for further details.

14 Dec

CIOB Social Networking Night - **AUCKLAND**

Contact your Centre Chair for further details.

INTERNATIONAL

11-12 Oct

International Construction Conference on Sustainability & Green Technology for Project Excellence. For further details please visit www.ciob.org.my

Grand Seasons Hotel, Kuala Lumpur, Malaysia

13 Oct

CIOB-NUS International Conference 2011 For further details, please visit www.ciob.org.au/events

Goodwood Park Hotel, Scotts Road, Singapore

REGIONAL COUNCIL

15 Sept 10-11.30am

CIOBA Resgional Council Meeting **Teleconference**

24 Nov 10-11.30am

CIOBA Resgional Council Meeting **Teleconference**

The newly elected and outgoing CIOBA Regional Council at the AGM, Sydney in May.



2011-12 ciob australasia

REGIONAL COUNCIL & CENTRE REPRESENTATIVES

Regional Council

President	Kerry London
Vice President	Niall McSweeney
Vice President	Daniel O'Riordan
Treasurer	Zubin Marolia
Education Panel Chair	Willy Sher
Publications	Jessica Siva

Centre Committees

NSW CENTRE

Centre Chair	Nick Marston
Committee Member	Steven Fischer
Committee Member	David Foletta

QUEENSLAND CENTRE

Centre Chair	Peter White
Committee Member	John Liddington
Committee Member	Andrew Ash
Committee Member	Brian Howard (Gold Coast)
Committee Member	Jonathan Wood (Central Qld)

VICTORIAN CENTRE

Centre Chair	Ron Webber
Committee Member	Stephen Ellis
Committee Member	Jonathan Fuelling

WESTERN AUSTRALIAN CENTRE

Centre Chair	Gary Faulkner
Committee Member	Barry Cooper-Cooke
Committee Member	Declan White

NEW ZEALAND CENTRE

Centre Chair	Peter Cunningham
Committee Member	John Tookey
Committee Member	Jim Collier
Committee Member	Patrick Hanlon
Committee Member	James Rotimi
Committee Member	Gareth Thomas (Christchurch)

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CIOB Publications

Contact Australasia: <http://www.ciob.org.au/newsletter>
iCON Review: <http://www.iconreview.org/en/home>
Construction Manager: <http://www.constructionmanager.co.uk>
Construction Research & Innovation Journal: <http://www.ciob.org.uk/resources/cri>
Construction Books Direct: <http://www.constructionbooksdirect.com>

CIOB Australasia CBC Members



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Allen.
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consultancy.
Senior Director:
Niall McSweeney.
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construction
consultancy.
Principal: Philip
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Building
Construction and
Maintenance.
Director: Wayne
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NEW CIOB MEMBERS

Fellow members (FCIOB)

Wayne Dixon Daniel O'Riordan

Chartered members (MCIQB)

Simon Barrow Peter White
Benny Or

Incorporate members (ICIOB)

Michael Beck Eugene Maguire
Rick Best Andrew Miller
Robert Burke Tadhg O'Connell
Joanne Chaina Lindsay Prehn
Damien Hertslet Pratheepan Saravanapavan
Jennifer Irwin Clifford Yong
Xiaohua Jin Hao Yu
Craig Langston Jian Zuo

Student members

Kartina Alauddin Jianxiang Li
Haira Alilio Mei Li
Emma Bevan Haoming Lin
Simon Burley Sophie Lindner
Chun Chan Nichole Louie
Boutros Chedid Tendai Makuwatsine
Neelam Chittoo Tshepo Maloka
Limin Chu Elise Miller
Nilaksha Cooray Lindsey Mulroy
David Curren Georgina Pye
Weishun Fan Scott Robinson
Ranez Farokhi Christopher Royle
Jody Fauth Mitchell Scott-Fell
Kyle Foley Brett Selmes
Jamie Fry Ravneel Sharma
Marco Fuentes Matt Shea
James Furci Thomas Sheridan
Afaf Geneid Damien Sibio
Steven Goh Jessica Siva
Jessica Greves Joel Spira
Nathan Harris Daniel Stankovski
James Hastie Steve Trinh
Kevin Joe Ruben Veerabudren
Sarah Jones Sudha Venkatesh
Ertunc Kandemir Weijian Yang
Neil Kelly Rodrigo Zavala
Liwen Kuang Qing Zeng
Jamie Lau Peng Zhang
Daniel Leblanc