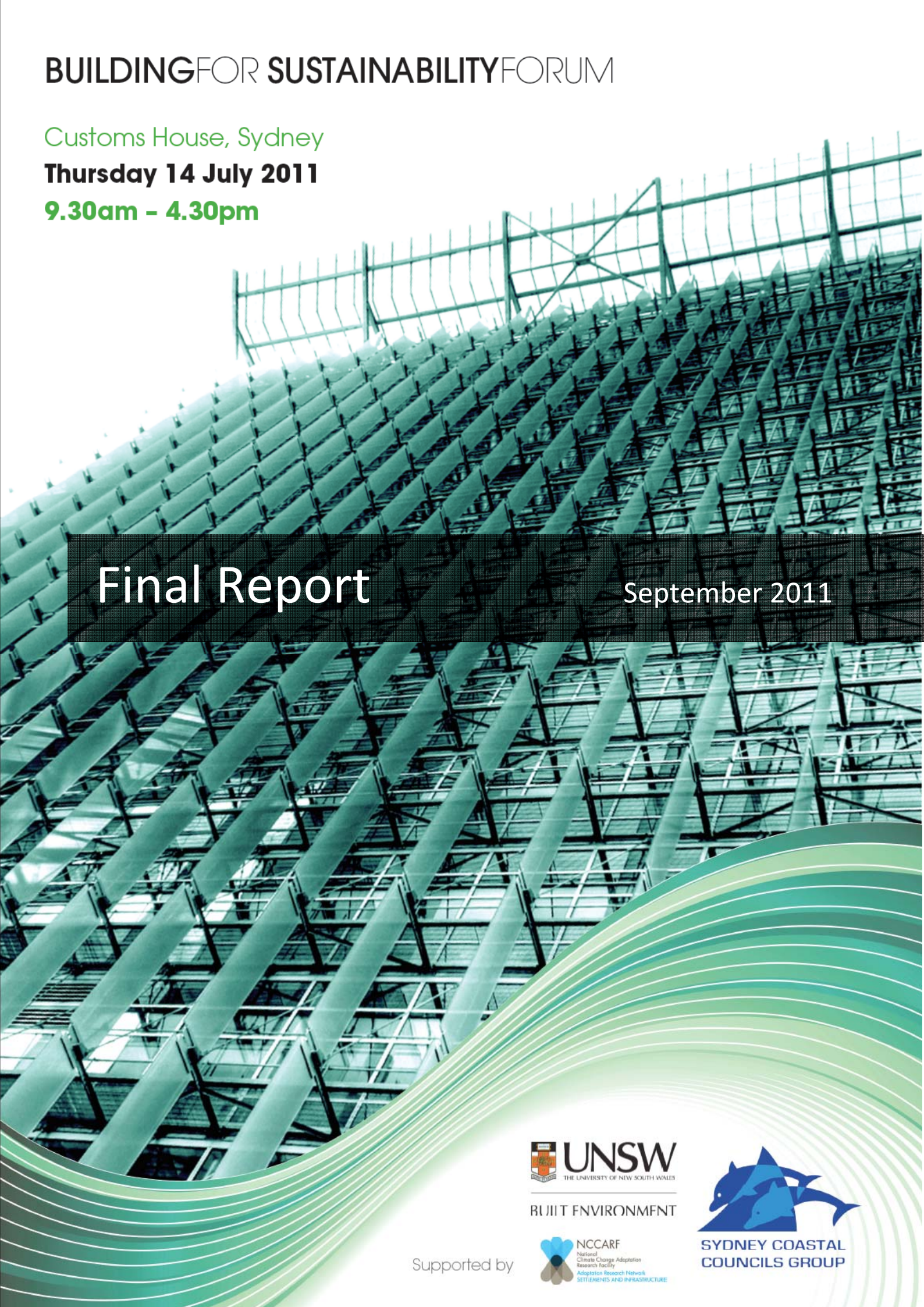
BUILDING FOR SUSTAINABILITY FORUM

Customs House, Sydney

Thursday 14 July 2011

9.30am – 4.30pm



Final Report

September 2011

UNSW THE UNIVERSITY OF NEW SOUTH WALES

BUILT ENVIRONMENT

Supported by

NCCARF National Climate Change Adaptation Research Facility

Adaptation Research Network SETTLEMENTS AND INFRASTRUCTURE

SYDNEY COASTAL COUNCILS GROUP

PUBLISHED SEPTEMBER 2011

SYDNEY COASTAL COUNCILS GROUP INC.

Level 14, 456 Kent Street
PO Box 1591
Sydney, NSW 2001
www.sydneycoastalcouncils.com.au

N.B. Sections 4, 5 and 6

Prepared by the Faculty of the Built Environment, University of New South Wales

For the Australian Climate Change Adaptation Research Network for Settlements and Infrastructure (ACCARNSI) – a Network of the National Climate Change Adaptation Research Facility (NCCARF) and the Sydney Coastal Council Group. September 2011.

The SCCG thanks to the City of Sydney Council for providing the venue at Customs House, Sydney.

Contents

Theme Two: Managing Development

What are the roles and responsibilities of government, developers and other stakeholders in addressing climate change and urban sustainability.

Theme Three: Building & Urban Design

The role of buildings in municipal responses to climate change – getting to net zero emissions and energy.

Theme Four: Metrics and Indicators

How do municipalities measure progress on climate change mitigation and adaptation?

The full report and all presentation slides can be found at

www.sydneycoastalcouncils.com.au/Event/Building_for_Sustainability

Introduction and Welcome to the "Building for Sustainability Forum"

Approximately 80 - 90% of Australians are now living within 50 km of the coast. More than 700,000 homes and billions of dollars in assets and infrastructure are at risk from rising sea levels and storm surges[1]. At the same time, coastal settlements are becoming increasingly important in terms of population growth and investment. Australia therefore must resolve competing pressures on the coastal zone as an economic driver on the one hand, with the sustainability of coastal settlements and the well-being of their residents on the other.

For any city, the scale of the risk from climate change is greatly influenced by the quality of buildings and infrastructure in that city, the extent to which urban planning and land-use management are responding through control of urban construction and expansion, and the adaptive capacity of the city's population. The question for today's forum therefore is what role does 'Building' sustainably play in addressing climate change in urban coastal communities.

'Building' is used here as a verb because potential for the building sector to deliver cost-effective climate change mitigation and adaptation exist throughout the building development life-cycle and is interdependent with urban policy. Today's speakers are eminent researchers in urban policy and sustainable building and practitioners in Local Government. They each have expertise in different aspects of the building process as reflected in the sequence of their presentations and will offer strategic insight and examples of how building for sustainability is a feasible and powerful strategy for tackling climate change.

In addition to presentations the afternoon workshops provide the opportunity to go deeper into the issues raised by the speakers. The workshops also offer an opportunity to develop research priorities that can form the basis for on-going collaboration between the Sydney Coastal Councils Group (SCCG) Member Councils and the University of NSW, Faculty of Built Environment (FBE) on building sustainability and climate change issues.

On behalf of the SCCG, the UNSW FBE and the National Climate Change Adaptation Research Facility – Built Environment Node we welcome you to this important forum.

[1] Australian Government, Department of Climate Change, 2009

BUILDING FOR SUSTAINABILITY FORUM

SYDNEY COASTAL COUNCILS GROUP

Thursday 14 July 2011

The Barnet Long Room, Customs House
Level 1, 31 Alfred Street, Circular Quay, Sydney

0900 REGISTRATIONS OPEN

0930 INTRODUCTION & WELCOME
Geoff Withycombe SCCG Executive Officer

0945 KEYNOTE: SUSTAINABILITY IN GLOBAL CITIES
Professor Michael Neuman Sustainable Urbanism, UNSW

1015 THE METRO SCALE: IS THE METRO STRATEGY POSSIBLE/FEASIBLE AND DEALING WITH CLIMATE CHANGE ADAPTATION
Professor Bill Randolph, Associate Dean of Research, UNSW

1045 THE DEVELOPMENT SCALE: BARANGAROO – ADDING SUSTAINABILITY & ADAPTIVE CAPACITY TO SYDNEY
Professor James Weirick, Director, Urban Development & Design Program, UNSW

UNSW THE UNIVERSITY OF NEW SOUTH WALES BUILT ENVIRONMENT

1115 MORNING TEA

1130 THE BUILDING SCALE: LOWERING THE CARBON IMPACT AND MAKING BUILDINGS MORE ADAPTABLE
Professor Deo Prasad, UNSW

1200 WILLOUGHBY CITY COUNCIL CASE-STUDY: THE CONCOURSE AND INTEGRATED WATER MANAGEMENT
Geoffrey Douglas, CBD Project Manager, Willoughby City Council

1230 CHALLENGES, OPPORTUNITIES, FUTURE & LOCAL GOVERNMENT
Robin Mellon, Executive Director - Advocacy and International, Green Building Council of Australia

1300 INTRODUCTION TO AFTERNOON WORKSHOPS (UNSW)

UNSW THE UNIVERSITY OF NEW SOUTH WALES BUILT ENVIRONMENT

WILLOUGHBY CITY COUNCIL

green building council australia

1305 LUNCH

1345 WORKSHOPS FACILITATED BY UNSW
Theme one: Metro Policy
Theme two: Development Planning
Theme three: Building & Urban Design
Theme four: Metrics and Indicators

UNSW THE UNIVERSITY OF NEW SOUTH WALES BUILT ENVIRONMENT

1530 AFTERNOON TEA

1545 CONCLUSION , EXPERT PANEL DISCUSSIONS & WORKSHOP SUMMARIES

1630 FORUM ENDS & LUCKY DOOR PRIZE

For further details visit
www.sydneycoastalcouncils.com.au/Event/Building_for_Sustainability
and to register visit http://buildingforsustainability.eventbrite.com

3) Presenter Biographies and Synopsis of Presentations

Professor Michael Neuman, Sustainable Urbanism

Faculty of Built Environment, UNSW

Michael Neuman is Professor of Sustainable Urbanism in the Faculty of the Built Environment at the University of New South Wales, Sydney, Australia. Prior to joining UNSW, Michael was Associate Professor of Urban Planning at Texas A&M University, where he was founding Chair of the Sustainable Urbanism Program and former director of the Master of Urban Planning program. He is also founding principal of the Michael Neuman Consultancy.

He received his Ph.D. in City and Regional Planning from the University of California at Berkeley and an M.C.P. with a post-graduate Certificate in Urban Design from the University of Pennsylvania. His research interests include sustainable regions and communities, network infrastructure, governance institutions, and coastal planning.

Dr. Neuman served as Coastal Planning Manager for the State of New Jersey and as environmental planner in the Florida Keys, among other positions.

He is the author of numerous articles, reports, and plans translated into eight languages; and author/coauthor of *The Futures of the City Region* (2011), *The Imaginative Institution: Planning and Governance in Madrid* (2010), *Building California´s Future* (2000), *Rebuilding a Sustainable Gulf Coast: A Regional Plan for New Orleans and Environs* (2006), and *Coordinating Growth and Environmental Management Through Consensus Building* (1994).

Professor Neuman has been awarded Fulbright and Regents Fellowships, and best article awards in *European Planning Studies* (2005) and the *Journal of the American Planning Association* (1999). His professional and scholarly work has won numerous awards ranging from the National Endowment of the Arts and the National Science Foundation to the American Institute of Architects and the Spanish and Catalan governments.

Sustainability in Global Cities – Synopsis:

Half the planet's population today is urban, totaling 3.5 billion, seventy percent projected for 2050, totaling 7 billion. The fate of cities, certainly Australian ones, is in our hands. What can we do about it? We will take a whirlwind tour of what a few leading global cities are doing in terms of sustainability, and highlight strategic research that illustrates what we can do to know and govern the complex beast of the contemporary city region, and how we can act to improve them in ways that leverage the fact that sustainability is a potent economic growth engine.

Presentation available at www.sydneycoastalcouncils.com.au/sites/default/files/B4S_Michael_Neuman.pdf

Professor Bill Randolph, Associate Dean of Research

Faculty of Built Environment, UNSW

Bill Randolph joined the Faculty of the Built Environment at the University of New South Wales in August 2004 as Professor and Director of the City Futures Research Centre. He was appointed Associate Dean Research in mid-2009. At City Futures he leads a research team specializing in housing policy, housing markets and affordability, urban renewal, sustainability and metropolitan planning policy issues. Bill has 35 years experience as a researcher on housing and urban policy issues in the academic, government, non-government and private sectors and holds a PhD from the London School of Economics.

The Metro Scale: Is the Metro Strategy Possible/Feasible and Dealing with Climate Change Adaptation – Synopsis:

The presentation will review the environmental sustainability content of the recent revised City of Cities planning document for the Sydney Metro area. The challenges facing the city in delivering adaptive changes in the light of other pressing urban issues will be considered. The difficulties of achieving more sustainable outcomes from higher density housing that will drive major urban renewal policies will be considered.

Presentation available at www.sydneycoastalcouncils.com.au/sites/default/files/B4S_Bill_Randolph.pdf

Professor James Weirick, Director, Urban Development & Design Program

Faculty of Built Environment, UNSW

A graduate of Harvard University, Professor James Weirick taught at the Boston Architectural Center, University of Massachusetts/Boston, University of Canberra and Royal Melbourne Institute of Technology, prior to his appointment as Professor of Landscape Architecture at the University of New South Wales in 1991. Professor Weirick has served as Head of the School of Landscape Architecture at UNSW; and as Director of the Graduate Program of Urban Development & Design since 2007. He has taught the core course, Sustainable Development & the Urban Environment in the UNSW Master of Sustainable Development Program since its foundation in the 1990s. His research interests include the history of architecture, landscape architecture and urbanism, with an emphasis on the 'politics of design', particularly the work of Walter Burley Griffin, the history of Canberra, and the urban landscape of Sydney. He is actively engaged in issues of contemporary urbanism throughout Australia as an educator, critic, and commentator. Professor Weirick currently serves on the Design Advisory Panel, City of Sydney and the Design Excellence Review Panel of the Barangaroo Delivery Authority.

The Development Scale: Barangaroo – Adding Sustainability & Adaptive Capacity to Sydney – Synopsis:

In the controversy surrounding the Barangaroo Development, East Darling Harbour the sustainability initiatives embedded in the project from the outset, augmented through the commercial tendering phase and incorporated in planning approvals to date, have tended to be overlooked. This presentation will place the sustainability aspects of the Barangaroo project in comparative perspective, highlight the significance of its 'climate positive' commitments at urban precinct scale, critically review the remediation planning process, outline the significance of the green space initiatives and reflect upon the global/local controversies stimulated by the ambition of the project, its relationship to the NSW Government's Metro Strategy and the City of Sydney 'Sustainable Sydney 2030' Plan – and above all, its extraordinary location on Sydney Harbour.

Presentation available at www.sydneycoastalcouncils.com.au/sites/default/files/B4S_James_Weirick.pdf

Professor Deo Prasad

Faculty of Built Environment, UNSW

Professor Prasad is an international authority on sustainable buildings and cities. Deo won the 2006 RAIA National Education Award for contribution to '*sustainability education, research and design*'. In 2004 he won the NSW State Government's individual GreenGlobe Award for '*showing leadership and commitment to the supply of renewable energy*'. He has also won the Federal Government's national award for '*outstanding contribution to energy related research*'. Deo sits on numerous Boards and Advisory Committees in this field including the Canadian Government's Solar Buildings Research Network (Concordia Montreal), UNEP Eco-Peace Leadership Centre (Seoul), UNEP-Tongji Institute of Environment for Sustainable Development (Shanghai), UNEP (Asia Pacific) Special committee on sustainable cities (Bangkok), International Solar Energy Society (Freiburg) and chairs the Standards Australia committee on energy in buildings. Deo chairs the Asia Pacific Global Civil Society Forum and represents the region at the Global Ministerial Forum on the Environment in Nairobi annually. He chaired the 2008 ANZSES/ISES Asia Pacific Conference on Solar Energy, 2001 ISES Solar World Congress (Co-chair - Adelaide) having chaired the 2004 ANZSES Annual Conference and numerous similar events. Deo was the Chair of the Standards Australia Technical Committee EN/3 on Energy Efficiency in Buildings and has been a member of another 4 such committees. In 2009 Deo was one of two Australians (of a total of 18) named as 'champions for green developments' in Asia Pacific by the highly regarded Singapore based journal 'FuturArc' (published by BCI Asia). In 2009 Deo has also been named as a Sydney Ambassador by the NSW Government for promoting Sydney as a destination for high end scientific events.

The Building Scale: Lowering the carbon impact and making buildings more adaptable – Synopsis:

This talk will present research and development on both effective means of lowering the carbon impact of buildings and making them more adaptable to the consequences of climate change.

Presentation available at www.sydneycoastalcouncils.com.au/sites/default/files/B4S_Deo_Prasad.pdf

Mr Geoffrey Douglas, CBD Project Manager

Willoughby City Council

Geoffrey Douglas a project manager with 30 years experience in a wide range of projects in Australia and parts of SE Asia.

His current role for Willoughby City Council has seen him involved in various stages of the Concourse Integrated Water Management System, including the ground breaking 5 ML Flood Mitigation and Stormwater Reuse Scheme. Additionally Geoffrey is undertaking masterplan studies in regard to future directions for the Willoughby Leisure Centre owned by Willoughby Council.

Prior to this Geoffrey has worked as a client side project manager delivering various commercial office buildings, hotel refurbishments, shopping centre master plans, commercial office fitouts and represented a shopping centre owner dealing with up to 100 tenant fitouts per annum across four shopping centres. In Malaysia he provided the high level project management direction and planning to the construction contractor for the 50Ha KLCC Park, at the base of the famous KLCC Twin Towers.

Geoffrey holds an honours degree in Architecture, and worked briefly as an architect in his early career before moving into project management.

Willoughby City Council Case-study: Delivery of "The Concourse" Flood mitigation and Stormwater Reuse Scheme – Synopsis:

The Concourse is a major new $160m community and performing arts centre developed by Willoughby City Council in the heart of Chatswood. The project has been under construction for four years and is due to open in September 2011.

The Concourse comprises of a 1,000 seat Concert Hall; 500 seat Theatre; 5,000 sq/m Public Library; 500 sq/m Civic Pavillion for community events and corporate functions; 150 sq/m Studio Space which can be used as a recital room; and various retail outlets.

As part of this exciting project, Willoughby Council initiated what we understand to be the largest urban Stormwater Harvesting and Reuse Scheme undertaken by local a government organsation to date. There are many examples of Council operated stormwater harvesting and sewer

mining schemes across the country, but mostly these focus providing irrigation to parks and golf courses. The challenge at The Concourse was to take potentially highly polluted urban runoff into a primary storage tank without the benefit of any primary biofiltration, and then treat it for immediate reuse primarily as cooling tower top up water where the risk to humans of airborne pathogens was real, although not entirely predictable.

In addition, the scheme has another key objective of flood mitigation for parts of the Chatswood CBD, with the construction of a 5 ML underground tank in Ferguson Lane, behind The Concourse development.

The scheme was developed in an emerging regulatory environment where no like examples or similar projects could be found on which to model our scheme. In essence we felt that in undertaking this Stormwater Reuse and Flood Mitigation Scheme that we were the 'inaugural example' of this type of scheme, and that probably others would be interested in how we went about it, what went well, what went wrong.

This talk will feature focus on the project management of the scheme, including the various procurement approaches that we tried, and the final approach taken, and less on the engineering or science, as the presenter is a project manager and not an engineer.

Presentation available at
www.sydneycoastalcouncils.com.au/sites/default/files/B4S_Geoff_Douglas.pdf

Robin Mellon, Executive Director - Advocacy & International

Green Building Council of Australia

Robin is the Green Building Council of Australia's Executive Director for Advocacy and International. Robin was raised in the UK and, after training in valuation, worked around Europe specialising in heritage property and the environment. Always a passionate gardener, he then worked with a London-based landscape designer before moving to Sydney to undertake a Masters in Real Estate, concentrating on sustainable development. After many years running a landscape management, horticulture and green-keeping business in Sydney, he decided to bring all of these jigsaw pieces together and joined the GBCA. Robin currently steers the GBCA's advocacy and strategic agenda at local, state and federal government levels, talking with each and every department to achieve those goals. He teaches Green Star courses around Australia, represents the GBCA on sustainability committees, and regularly presents at national and international conferences to encourage the industry towards better practice. Robin also leads the international work undertaken with other green building councils (GBCs) and affiliates world-wide, as Australia plays a key collaborative role with established GBCs such as the UK and US, as well as with emerging GBCs. In addition, he has helped mentor the Israel GBC and GBC Indonesia, sits on the WorldGBC Policy Task Group and is Chair of the WorldGBC's Asia-Pacific Network.

Challenges, Opportunities, Future & Local Government

During this presentation, Robin will be outlining the work of the Green Building Council of Australia and the role of the Green Star suite of rating tools, discussing some of the challenges facing organisations and sharing some of the opportunities available both nationally and globally, and ending with a summary of the resources available today.

Presentation available at www.sydneycoastalcouncils.com.au/sites/default/files/B4S_Robin_Mellon.pdf

4) PLENARY SESSIONS - THE BIG ISSUES

More than eighty participants representing municipalities, researchers and policy makers attended this important forum that aimed to:

- Share best practice knowledge,
- Discuss key challenges facing cities in general and coastal councils in particular; and
- Identify research priorities as we adapt to climate change.

The forum was organised into a plenary and workshop sessions. Speakers in the plenary sessions addressed climate change adaptation from different policy perspectives and urban scales.

Internationally global cities are facing the challenge of adapting to climate change, but this is just one of a number of key sustainability issues that urban policy makers face. Experience from natural disasters such as Hurricane Katrina in New Orleans, and best practices in districts of Stockholm, demonstrate the fundamental importance of governance, regulations and resilience of social networks are to the adaptive capacity of a city.

At the metropolitan scale the forum heard of the need for better integrated planning which also deals more effectively with urban dynamics. Better data on the impacts of climate change is therefore required. However, this data collection needs to be on-going and systematic, as a process of monitoring the effect of policies addressing key metropolitan challenges such as urban retrofitting, integrating spatial scales from building, to site, to precinct, and integrating finance, and supply chains.

One of the recommendations for encouraging innovation at the metropolitan level was to promote landmark green building projects. This raised the question of the role that major developments and their proponents within the development industry play in leading a city's responses to climate change.

As the largest new development project in the City of Sydney, the Baragnaroo development deserves some scrutiny as to whether it is likely to improve the climate change adaptability of Sydney, and be a catalyst for more sustainable urban development in general. The forum heard that the aspiration for Barangaroo as a showcase for low-carbon and environmentally restorative major development has been possibly undermined by changes to the project as it moves from concept through to realisation.

This is a common problem in property development, where procurement and governance processes often reinforce unsustainable norms and create operational islands of jurisdiction of elements of the development process, from finance through design, and then to construction etc. It is important for cities to be visionary with major projects, but the 'soft' infrastructure for governance, regulation, financing and procurement need to be equally innovative if these projects are to effectively play a role as catalysts for climate change adaptation.

Where vision, leadership and governance stand out as key top-down issues for municipalities tackling climate change, the role of buildings can be addressed from a more bottom-up perspective. It is estimated that about 30% of global energy-related greenhouse gas emissions can be avoided by 2030 at net zero cost or economic savings by investing in low energy buildings. This includes increasing the stringency of building energy performance regulations and encouraging deep retrofitting of existing building stock. Indeed, unless the abatement potential of building stock is realised it will be difficult for society to avoid exceeding the 2 deg. C increase in global temperature considered a tipping point for the worst-case scenarios of climate change.

Mitigation of building-related greenhouse gas emissions should also be seen as a foundation for municipal climate-adaptation strategies. Minimising resource consumption of the building stock increases the choice and feasibility of innovative technologies and integrated urban infrastructure. For instance, lower operational energy demand makes distributed photovoltaic electricity supply more feasible. Similarly, buildings can actually help improve access to scarce resources like water, through efficiency and integrated urban design. Examples from Europe and Asia show that careful planning and close stakeholder engagement can enable governments to implement policy pathways for low-carbon and zero-net energy buildings.

Municipalities in New South Wales have often been pioneers of integrated urban approaches to addressing climate change. As a contemporary example, Willoughby City Council presented the Chatswood Integrated Stormwater Management Scheme under the Civic Place Concourse. Two subterranean tanks the size of four Olympic swimming pools collect stormwater from Chatswood's urban catchment and store it for reuse in irrigation, cooling towers and toilet flushing. The project not only provides access to more water resources, it also solves Chatswood CBD's flooding problems, thus reducing its vulnerability to extreme weather events.

Lessons learned from such innovative projects need to inform capacity building and decision-making tools so that rapid mainstream climate change adaptation is possible. This challenge was discussed by the Green Building Council of Australia with particular reference to the development of a 'Green Star – Communities' rating tool. The tool intends to help decision-makers position green buildings and building retrofitting as key elements of climate adaptation strategies.

Overall, the morning presentations showed that making progress on urban climate change adaptation is not being held back by a lack of desire for innovation, nor lack of technological capacity. Indeed, innovative projects demonstrate that much of the 'low-hanging fruit' in terms of building design, master planning and decision-making is being harvested. Yet, mainstreaming such innovation remains a challenge for metropolitan strategy, development management, and urban and building design. Developing appropriate metrics for defining and measuring progress is also critical. These issues were the subjects of the rest of the day's proceedings.

5) WORKSHOP OUTCOMES - RESEARCH NEEDS

The objective of the workshop sessions was to determine opportunities and research needs to overcome barriers to mainstreaming municipal climate change adaptation and mitigation. The key issues identified in session one, namely: metropolitan strategy, development management, urban and building design and metrics for measuring progress were each the subject of focussed workshops. The following are the key outcomes of these workshops.

Note: Complete workshop notes and detailed reports are available on request.

Theme One: Metropolitan Policy

Lead by: Professor Bill Randolph & Dr. Simon Pineagar – City Futures Research Centre, UNSW Faculty of the Built Environment.

The workshop discussed policy and master planning issues and research required to better tackle climate change and sustainability issues at the metropolitan scale. Nineteen issues were identified and a vote taken to determine the top priorities for future research. These are:

1. Governance, implementation and assessment: Vertical policy integration - How to link the metro and local plan? Horizontal integration issues- between councils. How to get councils to buy in to more green development? How to monitoring outcomes?

2. Encouraging broader community engagement: How to spread community benefit from addressing climate change issues? How to encourage community to buy in these green strategies? What about the role of public open space?

3. How to project future needs? Population/transportation/waste? Counter check old projections and current numbers? What data set are needed to monitor outcomes? Needs for statutory reform?

Theme Two: Managing Development

Lead by: Professor Michael Neuman - Professor of Sustainable Urban Development, UNSW Faculty of the Built Environment.

This workshop addressed the roles and responsibilities of government, developers and other stakeholders in addressing climate change and urban sustainability. The workshop decided to examine this issue from the perspective of local government, and specifically the Sydney Coastal Councils Group (SCCG).

Two themes emerged from the workshop discussion. The first focused on the issues and opportunities relating to the legislative planning mechanism and its influence on achieving sustainable development. The second explored the issue of how to successfully 'market' sustainability to help drive change within

the community. The group chose to present the themes using the rubric of "problems and solutions", listing a number of each, out of which came the following research questions:

Legislative Process:

- Is it possible/desirable to decouple strategic / metropolitan planning from the political process?
- If the NSW Planning Act was to be reformed – how could sustainability be embedded? Does this present a real opportunity for improvement?
- What are the currently limitations of the Strata Title Act in limiting the ability to retrofit or improve the energy efficiency performance of existing building stock?

Delivering the Sustainability Message:

- Why aren't the communities getting the sustainability message?
- What are the 'triggers' for the community to take positive action on climate change?
- Which case studies may offer the best or most positive demonstration of effective policy and/or sustainable development practices?
- What are the best ways to "broadcast" local sustainable development success stories?

Theme Three & Four: Building and Urban Design & Metrics and Indicators

Lead by: Professor Deo Prasad - Director Master of Built Environment (Sustainable Development), Professor James Weirick, - Director of Master of Urban Design and Development, and Dr. Paul Osmond UNSW Faculty of the Built Environment.

Issues three and four were combined. The discussion focused on the disconnection between developers, Local government Authorities and communities. Overall there was seen to be a need for an on-going process for being able to define and communicate adaptation needs and priorities, measure progress and provide feedback to stakeholders. Benchmarking of best practices and trying to award positive behavior were considered very important. Overcoming barriers associated with lack of and access to key data is also necessary. There are currently gaps in data between community perceptions and council priorities, a lack of metric for considering climate change impacts in strategic planning. The cost of some proprietary assessment and monitoring tools is considered prohibitive. Key questions and projects for further research included:

- How power grants can be shared to enhance implementing changes at the LGA level?
- What mechanisms can lead to motivate changes, particularly for private sector, e.g. residential housing development?
- Council's access to outdoor facilities (council assets for the future), e.g. sport fields, which may be subject to the consequence of climate

change in the future (e.g. flooding, higher temperatures). The question is where to locate these facilities in the future?

- How to define best practice and champion sustainability projects to help facilitate change?
- What kind of data should be collected at local level and what should be measured? How to measure the community perception and the reality (e.g. a survey showed 40% residents in Gosford prefer to buy green power, but the council was unaware of the number of residents who have purchased green power).
- How to use triple bottom line (plus governance) to measure the performance of governments, with regard to consistency and scale issue (federal, state and LGA)?
- How to adapt public buildings (e.g. library) to higher temperatures and heat waves?
- Investigation of sea level rise. How can the state government and local councils predict the rise of sea level?

Strategies and tactics

- Create a type of toolbox, which shows members of community and developers, what benefits and green building standards could be.
  - Benefits
  - Incentives
  - Calculated
- Advocate/work with the participants willing to champion projects.
- Local council owned infrastructure is a big issue and should be given more emphasis (e.g. lead by example) .
- Using technologies such as Smart Phones.
- Australian Building Sustainability Council & GRI (global reporting initiatives) at local level.
- Develop community indicators (e.g. CHECH website)
- Utilising decision-making tools that can help trade-offs between different development considerations.
- Develop relationships between UNSW and LGAs to assist in providing the research, science, and information to make informed decisions.

6) FINAL PANEL SESSION – Cross Cutting Issues

The final panel session heard reports back from each workshop on their priorities. Cross cutting issues and higher level strategic questions were discussed.

1 - International research is necessary to reduce the gap between science and governance. How can we create and manage a process to encourage more effective relationships?

A number of opportunities exist to forge closer links and partnerships between municipalities, the private sector, communities and researchers. These include:

The National Climate Change Research Facility, Australian Coastal Settlements & Infrastructure Network hosted by UNSW and in particular the Built Environment Node, hosted by the Faculty of the Built Environment. These networks do provide opportunities for funding. These opportunities will increase if the CRC for Low Carbon Communities bid is successful in 2011.

Through UNSW and the Faculty of the Built Environment, municipalities have access to applied research from one of the top universities in the world. Climate Change is the most urgent and crosscutting topic linking all scales of urban concern. This requires a kind of applied research partnership incorporating councils, students, and community in real work projects from which can emerge real solutions. UNSW FBE are happy to partner with the organizers and advocate such relationships.

2 – Decision-makers need capacity building to understand research and to develop policies. How can academics best present the solutions?

We need to understand the pressures of the political cycle and that it is not just a matter of providing facts and quality information. It needs to be provided at the right time, to the right people in the right format to be influential. In short the research needs to be relevant to the political agenda and offer realistic and implementable solutions.

Good policy and politics is evidence of good information. While a key strategy of municipalities is to promote successes in Sustainable Development projects, researches must also promote their projects. We must communicate clearly so communities can understand the insights provided by research. The job falls on us to coordinate and communicate clearly.

3 - **Universities are increasingly under pressure to provide economic benefits as research outcomes. Is that a barrier to implement projects?**

This is a myth that is commonly accepted as wisdom. Evidence indicates that doing what's good for the sustainability can also be good for business. Companies that lead the way in creating the 'green economy' are likely to be more profitable. We apply same thinking to research. That said, there is nothing wrong with research that aims at providing knowledge to support short-term benefits, as long as it also contributes to long term innovation.

Although there are constraints on research funding for more blue-sky projects we get smarter because funding is scarce. Although there is a more applied

focus right now, there are also opportunities to get research funding for projects that have potential long-term benefits.

4 – Urban populations are growing. How to understand and integrate local, state and federal positions?

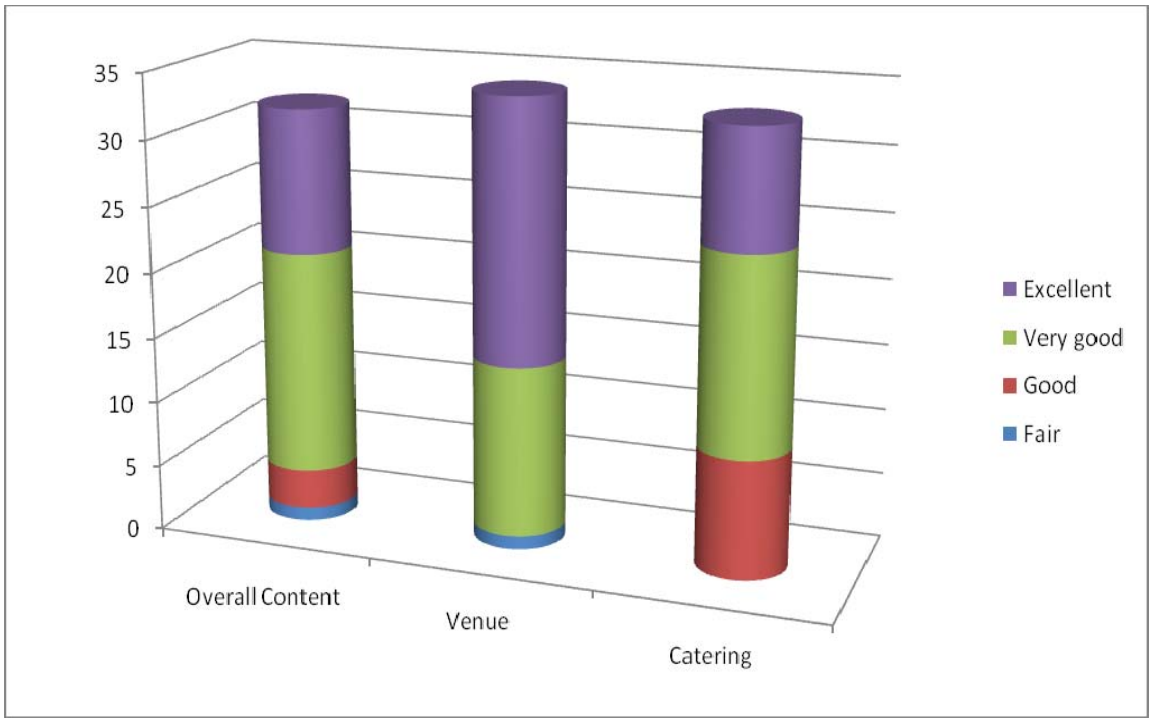
The federal government has invested so much in policy that affects every day life in cities but state government doesn't dictate population migration. However, state governments must get involved into urban planning.

There should be more work done on integrating federal and state policies for urban planning. Best practices from the USA and EU show that when policy makers at different levels of government think in terms of spatial planning there are can be higher levels of integration and positive implications in terms of sustainable development.

7. Evaluation Results

Evaluation was conducted at the end of the Forum to assess the value of the day and investigate future opportunities / topics the SCCG could address in relation to building for sustainability. 33 out of 86 attendees completed the evaluation forms providing the following results.

Question 1) Please rate the Overall Content, Venue, and Catering.



Question 2) What did you feel was the most valuable part / highlight of today's Forum?

Overall participants felt the morning presentations were of a high calibre and brought inspiring new perspectives to start of day. Many found Professor Michael Neuman's keynote presentation the most valuable part of the day giving a global perspective. A high number also felt the local scale case study from Willoughby Council very thought provoking. Learning about the Green Building Council of Australia and hearing academics critique of the Sydney Metropolitan Strategy were also highlights of the day. The forum was commended as an excellent opportunity to obtain new information and networking.

Question 3) Please rank the presentations overall relevance to you?

Participants ranked Professor Bill Randolph's presentation on the Sydney Metropolitan Strategy as the most relevant to them. Closely followed by Professor Michael Neuman's on Sustainability in Global Cities and Mr Robin Mellon's presentation about the Green Building Council of Australia.

Question 5) Would you like to have more information on any of the above workshop themes?

There was evenly distributed interest in having more information on three of the workshop themes: Metro Policy, Managing Development, and Building and Urban Design. Some specific requests for more information were:

1) The community engagement element of the Metro policy.
2) The application of DCP's in Managing Development.
3) What are the leverages and mechanisms available for Local Government to encourage best practice in development?
4) What are the development industry responses verses motivations?
5) Use of ACCURATE as a measure of performance instead of BASIX for residential developments

Question 6) Are there other themes relevant to Building for Sustainability we have not included that you would like more information on?

Other themes people would be interested in hearing about relevant to Building for Sustainability were:

1) Material design, industrial / commercial and community design (SEPP65
2) Risks and the role of the insurance industry.
3) Making metrics consistent and useful across scales
4) Governance structures, delivery models for getting precinct scale developments, implementing adaptation plans.
5) Adaptation for new buildings in rating tools
6) Adaptation of regions to Sea Level Rise
7) Measure of thermal performance of existing domestic residences

Question 7) Other comments:

- I would like to see more case study examples of implementing sustainability through planning process
- It was great to hear the commonality of issues between councils
- The workshop component was invaluable and highly worthwhile.
- State Government should have been included, maybe on the speaker list. Plus business and industry.
- The workshops should be put on first.
- Discussion should facilitate solutions to problems. Our workshop tended to concentrate on problems. Speakers should focus on relevant solutions, relevant to the audience, e.g. not just developers like lend lease operations in Sydney (high end). Include business and industry to bridge the gap.
- Green stars and BASIX – can theses be integrated for both residential and commercial development?

UNSW
THE UNIVERSITY OF NEW SOUTH WALES
BUILT ENVIRONMENT

Supported by

NCCARF
National Climate Change Adaptation Research Facility
Adaptation Research Network
SETTLEMENTS AND INFRASTRUCTURE

SYDNEY COASTAL COUNCILS GROUP