

BOOK OF ABSTRACTS & POSTERS

Mantra on Salt Beach, Kingscliff, NSW

9 – 11 July 2014

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7th Making Cities Liveable Conference

Healthy – Sustainable – Resilient – Cities





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Mr Gavin Ashley

Manager - Sustainable Urban Development, Moreland Energy Foundation

Urban development built now and into the future will have a lasting effect on the sustainability of our cities

A strategic approach to the delivery of best practice sustainability measures in design, technology and place creation is critical to ensure that urban development can systematically address environmental impacts in a cost effective manner.

However, competing pressures can make delivery of truly sustainable development difficult to achieve. The Sustainable Urban Development component of Moreland Energy Foundation's delivery of the Solar City program worked with key developers and local council to develop and test practical tools to embed sustainability into new developments of all scales, from the initial concept phase right through to occupancy.

Building on this experience MEFL recognised a need for a more structured process for considering how sustainability was approached at precinct and building level.

We felt there was a clear need for a unifying framework – a 'green' decision support to help developers, architects and urban planners tackle sustainable developments across three critical components:

- Initial recognition and analysis of sustainability opportunities
- Planning for their staged delivery from the earliest stage possible
- The ability to simply and effectively communicate the potential impact and place of the identified sustainability opportunities in current practice

The Sustainable Urban Development Framework (SUDF) was developed as this approach to link the motherhood objectives (which every project tries to take on) with what that actually means for delivery on the ground. It has now been applied to projects from as small as 18 dwellings to major urban growth precincts of 95 hectares.

This presentation tells the story of its development using a case study approach, which focuses on key influences in the framework's development.



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Mrs Veronica Aster

Planning Officer (Environmental Management), Ipswich City Council

Co-author: Mr Shannon Mooney, GIS and Information Manager, SEQ Catchments

Planning for the Impacts of Climate Change within a Local Government Area - An Ipswich City Council approach in collaboration with SEQ Catchments Ltd

The impacts of climate change have never been more evident as it has been in the past decade. Severe weather events such as droughts and flooding have been on the increase as our climate warms. So what can local government do to reduce the impacts of potential catastrophic events on local biodiversity as a result of climate change?

Ipswich City Council prides itself in being a forward thinking innovative council. Council takes its role as manager of the natural environment seriously and for the past decade has invested heavily in the securement of core habitat areas within the City. The strategic direction for nature conservation, and the safeguarding against climate change impacts, is greatly focused on the identification, protection and enhancement of the City's ecological network.

Core habitat areas play an important role as climate change refugia in the City and will be critical in their role to shelter native flora and fauna species from some of the effects of a changing climate. Building on existing work and with knowledge gained from latest scientific advice, Council engaged the expertise of SEQ Catchments Ltd to develop an approach for mapping climate change refugia, taking into consideration aspects such as: slope of rainfall, remnant vegetation tracts/forests, landscape roughness, regional ecosystem variety and wetlands. The resulting map, in combination with other identified environmental values, such as: ecosystem functions; matters of local environmental significance; and connectivity has assisted Council in the identification of the ecological network.

As a result, Council are utilising identified climate change refugia as a basis and justification for the establishment of management intents for nature conservation across the City. The approach will assist Council in the implementation of existing programs such as the Conservation Partnerships, EnviroPlan Acquisition, strategic delivery of Environmental Offsets, and the Ipswich Planning Scheme.

Mr David Barnard

National Urban Design Manager, Stockland

Measuring Success: Stockland's Liveability Index

Stockland takes the design and sustainability of communities very seriously. It can be challenging understanding the ultimate specific needs of the new-town being created. To better understand, we are now measuring how our communities perform at a rich level from the perspective of our residents.

This talk will outline how and why the Stockland Liveability Index was created, how it is being implemented, and what are the early results.

At a time when the buzz of 'big data' is starting to inform many decisions, we like to think of this as 'little data' to inform very local decisions for our designers, developers and sustainability teams.





Mr Tony Barnden

Manager Community Development, Blacktown City Council

Co-authors: Mr Peter Smith, Director Sustainable Living, Blacktown City Council

Making community facilities more sustainable

Located in the heart of Western Sydney the City of Blacktown will grow to approximately 500,000 people as its new release areas are developed.

Instead of providing suburb-based local level community facilities Council has recently moved to a Community Resource Hub model of facility provision that provides spaces for communities to come together for social, life-long learning and human service activities and services. Council has \$31m of Community Resource Hubs either in design, under construction or opened/operating.

The facilities are high tech, high spec and carbon neutral. With community gardens, social enterprise cafes, technology labs and state of the art meeting and office accommodation the facilities have proven popular increasing the level of community activity and use at Council's facilities.

Council has also established a Developer Agreement model whereby Developers contribute to human service delivery in new release communities by employing community developer workers, running seeding grants funds, funding community facilities and community harmony / connection events which activate these new buildings.

The presentation will highlight how a Council can take a leadership role in providing socially sustainable community facility infrastructure that helps to build community and social capital in new release area communities.

Mr Mark Barrie

Sustainability Project Engineer, Wood and Grieve Engineers

Co-author: Mr Glenn Alman, Sustainability Section Leader, Wood and Grieve Engineers

Precinct Energy Centres:- Low Carbon Solution or Infrastructure Nightmare?

Australia's carbon dioxide emissions per capita are the highest of all the OECD countries. With the increased prevalence of fracking within the USA supported by a 20% electrical power generation through (low carbon) nuclear power, Australia now has a higher carbon footprint per capita than America, with no formal plan to address this disparity.

Australia's recent ratification of the Kyoto Protocol (2007) committed the country to limiting the amount of annual carbon pollution. However at current pollution levels, Australia will need to cut carbon emissions by 20% within the next 6½ years to achieve its minimum pollution reduction commitments.



While central (precinct) energy networks, integrating energy-from-waste strategies, are common-place in Europe the current economic argument in the State of Victoria is that it's cheaper to continue producing energy at the existing (brown) fired coal power stations than convert to gas-fired turbines or integrate renewable philosophies. As a result of this approach, Victoria has the highest carbon intensity of any OECD country.

With Melbourne seeking to increase its current population by 20%, to 5 million people by 2030 is there an opportunity to embed precinct networks within burgeoning development areas to deliver low carbon power and assist in Australia's country wide reduction of carbon emissions or will it be easier to continue with business-as-usual and pay other (energy efficient) countries to off-set our high pollution levels?

Finally the paper closes with a number of integrated philosophies scaled in terms of involvement, capital cost and community benefit, extrapolated to demonstrate the potential infrastructure influence/carbon displacement by taking a proactive but relevant resilient energy strategy for our growing cities. Final aspirational section suggests what a non-fossil fuel powered Australia might look like, technical limitations and capital costs associated with a low carbon (energy generation) economy.

Ms Bronwyn Buksh

Project Manager, The Digital Work Hub Project, Regional Development Australia

The Digital Work Hub Project, a catalyst for urban and regional revitalisation in SEQ

A 2013 collaborative Regional Development Australia project between the Sunshine Coast, Moreton Bay, Logan/Redland, Brisbane and the Gold Coast, which examined opportunities and challenges for establishing a network of digital work hubs across South East Queensland.

The global megatrends influencing the future of work as highlighted by Deloitte & AMP Capital 2013 Its (almost!) all about me. Workplace 2030: Built for us, concludes that workplaces of the future will be designed to connect and facilitate as interconnected hubs providing the catalyst for diverse, vibrant work precincts. Presently however, Australian cities with their agglomeration of knowledge workers and innovative high value added enterprises, coupled with housing affordability and lifestyle factors, are diverging structurally, economically and culturally from regional locations with fewer opportunities for all.

The Digital Work Hub Project addresses wide policy issues to capture productivity and societal gains from offering workers the opportunity to work in, or much closer to, their region of residence as part of an Active Work Model. Digital Work Hubs are a network of highly curated collaborative workspaces that co-locate a number of activities including coworking (freelancers, entrepreneurs, start-ups) and teleworkers (public and private sector professionals) into vibrant urban clusters.

The project illustrated that when combined with lifestyle choices of knowledge workers, co-location of businesses in regional digital hubs will contribute significantly to regional agglomeration strategies aimed at reducing the economic divide between cities and regional centres.



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The research provides data at the both the SEQ and individual regional scale for initial demand modelling for digital work hubs. The research examined commuter flows, skilled and knowledge intensive worker patterns, and the potential cost savings, job and capital creation, and health and wellbeing benefits such collaborative workspaces could provide. In addition the key components required for success were investigated including design, curation and connection to a wider urban and workplace policy platform.

In 2014 the second stage of the project commenced with an SEQ Activation Plan working across the public and private sector to establish the network of digital work hubs across SEQ.

Mr Steven Burgess

Principal, MRCagney

Co-author: Mr Michael Stott, Director of Masterplanning, Ramboll

Streets across the Globe: Our most important public space

Streets are possibly one of the most misunderstood and mismanaged part of our urban and regional infrastructure. They have been around for thousands of years providing space to gather, move and exchange.

A significant part of our intellectual and financial effort now goes towards making streets safe and accessible for car travel. Naturally this has come at the expense of some of the other traditional street activities, such as gathering and exchange. We design our streets as small (some not so small) roads. The art of designing a street for its original intended use with a balance of movement and exchange space is disappearing.

This paper by Steven Burgess and Michael Stott explores the techniques for and implications of restoring the art of designing streets for people, as part of the open space network, as a place for gathering and exchange, for social and commercial betterment. They will discuss new user hierarchies and new place hierarchies which are independent from traffic volumes and designed to support prosperous and vital land use and sustainable street activity. The intended outcome is a new paradigm for street design that serves and balances the needs of all users.

The paper not only explores a new design philosophy but also a new design methodology to break the nexus between street design and traffic volume and reinforces the universal link between streets and people. This new approach requires the coming together of transportation planning/engineering, street design, public realm design and land use in order to provide more diverse transportation systems and accessible land use patterns: Complete Streets.



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Mr Rob Cawthorne

Chief Executive Officer, The Carbon Reduction Institute

Co-author: Mr Keith Mcilroy, National Certification Manager, The Carbon Reduction Institute

Carbon reduction strategies for local government

Local government has a complex role to play in responding to the challenges of climate change while staying realistic and pragmatic on outcomes.

This oral presentation will address the two key areas of change for providing an effective response that is economically realistic.

Technological change

Technologies are changing rapidly in both the generation of renewable energy and efficiency improvements in using that energy. Marginal carbon abatement analysis can identify economic trigger points for reducing emissions for least cost and providing greater certainty for long term planning.

This talk will review some of the latest technological breakthroughs and demonstrate how Marginal Abatement Cost Curves (MACC) can be used to plan the timing of the introduction of new technology to reduce carbon emissions.

Behavioural change

Behavioural change programs for staff and residents can be implemented easily and quickly to provide a flexible response to climate change. These programs can also provide positive social benefits through community involvement. The talk will identify simple tips and techniques for putting together behavioural change programs for minimal effort and maximum results.

These two change areas can provide credible and transparent actions to demonstrate your leadership in combatting climate change in your city.

Ms Sue Cooke

Promoting Health and Climate Solutions, Community Climate Network

Co-author: A/Prof Julie Davis, Senior Lecturer Early Childhood Education, Queensland University of Technology

Healthy cities for children and communities in an era of climate disruption

This paper examines interactions between climate disruption and healthy child development. It discusses profound challenges posed by changing ecologies of childhood for the health of children and communities. Based on analysis of several established and emerging child-centred change movements*, it identifies practical approaches to building healthy communities for children and young people and proposes success criteria underpinning good practice. These criteria will be valuable in local and city based efforts to meet the health and wellbeing needs of children and families. They include: facilitating critical thinking, and hands-on involvement in real-life, action-based change, especially outside 'in nature'.



The paper argues that, along with the necessity for international and regional cooperation in addressing global sustainability problems, local childhood and community learning in kindergartens, schools and community gardens, for example, offers practical opportunities for linking health and sustainability concerns, and meaningful action. Such initiatives can facilitate liveability, and build capacity for change that supports human and planetary health. Other examples include young people's involvement in legal challenges for climate action, and climate action recommendations to government from Children's Parliaments.

Such opportunities are central to counteracting the sense of helplessness felt by many children, young people and adults in the face of global and local challenges, and have clear implications for building mental health and resilience. These approaches also support the cultural shifts required to build healthier communities, cities and societies. What is good for young children's healthy development also supports healthy societies, liveable cities, and a planetary ecosystem in which people live in harmony with nature.

* including for example, Health Promoting Schools, Sustainable Schools, Child Friendly Cities, Transition Towns, Coal and Gas Free Communities, the Scottish Children's Parliament Children's Climate Change Project, and 'Our Children's Trust' legal actions.

Mr Robert Cooper

Coordinator Design, Melbourne City Council

Consensus at last? Australian Standard AS 5334: Climate change adaptation for settlements and infrastructure

AS 5334 was published in the same month as the 2013 Healthy Cities Conference. Subtitled 'a risk based approach', the scope and basis of this document refer directly to the roots of the 'Healthy Cities' movement, health, sustainability and resilience. Significantly, the Green Infrastructure sector is recognized and dealt with as a fundamental form of infrastructure.

The Standard's drafting committee reflected the broad business, environmental and governance issues relevant to climate change adaptation (including representatives from Property Council Australia, Housing Industry Association, Australian Green Infrastructure Council and Commonwealth Attorney General's Department).

What should we know about this Standard to ensure we adopt best practice? Is it a significant leap forward in community consensus or has it merely sidelined disagreement?

In this paper an environmental designer reviews, and calls for broader dialogue on, this nationally significant document. The logic and structure of the recommended approach to adaptation are analysed and found to be couched in terms that appeal to the mechanisms driving our market economy and systems of governance; indeed they offer the encouragement needed for a rational, unified approach to climate change.

However the Standard is risk-based. The author contends that asset managers will need greater persuasion to apply established norms of risk management to the Green Infrastructure described by the Standard than they will for other sectors. Drawing on the author's previous Healthy Cities work on ecosystems services, urban health and green infrastructure costs and benefits, the paper reviews what the IMF has recently referred to as the increasingly important externalities of our market economies.



Recent work by the ABS to promote Environmental-Economic Accounting and by the Productivity Commission on Non-Market Valuation is discussed and future directions for this thinking are suggested.

Some clear advice emerges as to the need to consult and act on this best practice document.

Andreanne Doyon

The University of Melbourne

Co-authors: Dr Dominique Hes, Senior Lecturer, The University of Melbourne

Positive buildings an opportunity to increase the resilience of small and rural communities

The buildings we build currently are still having an impact on the environment, resource stocks and having impact such as adding to climate change. Though our cities have been increasing the number of Green Star rated buildings, these buildings are not sustainable either there are more efficient in most cases but still have a net negative impact.

Creating less bad buildings is not a way to sustainability, the question is given we still need new buildings for our increasing population, can we actually create good buildings? Build buildings that do not impact on the environment, climate change and resource depletion over their lives?

This paper explores the opportunity of supporting the design and construction of these types of buildings for schools, office buildings and homes. The discussion will focus on at the latest developments and research in the design and construction of buildings that use net zero energy and water in operation, are healthy and add to the vitality and beauty of their contexts.

Finally, arguing that creating positive buildings could be a tool for the revitalisation of our smaller communities outside the major cities; providing an opportunity for development that contributes positively and improves the potential for resilience.

Dr Rory Eames

State Manager, Viridis

Co-author: Mr Stephen Choi, Senior Consultant, Viridis

Working on non-resilient cities: Sustainability Auditing for people in buildings and what it can do for creating liveable cities

This paper demonstrates that work currently being undertaken under the name 'sustainability auditing' is a necessary step in moving towards liveable cities. An explicit "yet inherently organic" approach to working on non-resilient cities at the people and building scale, sustainability auditing replaces the traditional model of standardised, linear, and purely technical energy auditing, and in so doing breaks many of the tenacious problems of scale, creativity, inclusiveness, and robust decision making.

Part 1 describes the context in which sustainability auditing sits. The existing built environment, particularly commercial and institutional buildings and public and private infrastructure make up our cities, and their current condition is necessarily a key focus when working towards healthy, resilient cities and communities.



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While there is an apparent wealth of tools, methodologies, and technologies claiming to ‘make them sustainable’, none seem to solve inherent problems of scale, the use of creativity, real stakeholder engagement, or the need for robust decision making.

Part 2 uses recent examples to show what sustainability auditing is. We present case studies and share their outcomes as examples of both process and product. Importantly, we show the difference in outcome when compared to traditional models of energy auditing, but also show how quality, engagement, and creativity produce very robust information for decision making, rather than merely technical data.

Part 3 explores what the sustainability auditing approach means for the work required to move to resilient communities and healthy cities by presenting a few lessons from this work. Tenacious problems such as quality, competing and contradictory interests, and decision-making will be addressed as the thorny aspect to the hard work which is required to shift our current cities to a more liveable, sustainable environment

Dr Dean Economou

Technology Strategist, NICTA

Co-author: Mr Rob Fitzpatrick, NICTA

Cities in the age of analytics

Today we have more information available than ever to help us understand how our cities operate, how they might operate in future, and how we might improve them. New analytics and optimisation methods make it possible to use this information to analyse and model much larger systems than ever before, with more realistic constraints.

In this presentation we will share examples of how advances in analytics (particularly predictive analytics) and optimisation are able to improve the performance of urban systems in areas as diverse as logistics, safety, water supply, road and rail transport, and ports.

In particular we will share Australian case studies showing how new analytics techniques can help us predict traffic incidents (and deal with them faster and more safely), design intelligent transport systems, improve the accuracy of water pipe maintenance, show how to better protect critical infrastructure and, using optimisation, redesign an entire city's bus transport system or respond to a flood. We also describe a case where we have modelled and optimised the supply chain of a major port.

While these examples of applied technology all have benefits we propose going further and asking how we can design technology solutions in a liveability framework that encompasses dimensions of economic, social and environmental benefit. The framework is being developed by NICTA, CSIRO and Arup.



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Prof Hisham Elkadi

Chair of Architecture, Deakin University

Regiopolis: Rethinking Australian Regional Cities

Regeneration of many cities is essential to enable their sustainable re-development but importantly to maintain their viability and creativity in this global and rapidly changing world. The predominant focus of Australian planning and design literature is concentrated upon its coattail cities and the problems and challenges these burgeoning metropolises presently. Even state and commonwealth government policies preference these places against the rest of the Australia's urban and regional centres biasing the focus of the majority of research activities and interrogations. For example, the recent round of the Commonwealth-funded National Climate Change Adaptation Research Facility (NCCARF) (2010-2013) projects concentrated over 80% of their projects on the south-eastern urban fringe of Australia.

Regional Cities in Australia are lacking the equity of attention and inquiry. These are port cities of between 150,000 to 300,00 in population that are major industrial or single-industry-dominated centres that also serve a major regional service centre role aided by the physical distance from their respective capital city. They are usually located outside but close to capital cities but increasingly provide driving forces for development in their regions. Regiopolis usually have smaller scaled centers with a high functional importance for their hinterland. This group of cities is also characterized by good infrastructure, a high economical importance and hosts a University.

These particular group of Regional Cities have historically been overlooked in planning discourses, and policy making, and continue to be as demonstrated by the Rudd-Gillard and Abbott commonwealth administrations. The reference to 'regional cities' in federal and state governments policies covers small regional cities and towns and fails to reflect the importance of this major cities as centres for urban growth and contemporary sustainable living.

One has to venture back to the 1970s era to witness any solid infrastructure, and planning and design investment in these centres by state and commonwealth governments, and then the imperative was to underpin and aid decentralization of Australia's population and long-sightedly prevent the present wave of peri-urban expansion to better and more equitably distribute Australia's urban population across the continent that to concentrate it in 4-7 growing megalopolises.

The merit of this innovative policy is now lost as we witness Melbourne's tentacles or urban wedges sprawl, Sydney's wave of suburbia subsume the Nepean Plains, Brisbane becoming connected to the Gold Coast, Adelaide quietly expanding in the Adelaide Hills, Willunga Basin and the Gawler-Salisbury Plains regions, and Perth trying to control its 'Boomtown' city ethos as epitomised in Weller's writings as it sprawls north and south on the Darling Plains.

Regional Cities like Newcastle, Wollongong, Townsville and Geelong are however confronting major issues about their futures especially because of the cessation of down-sizing of their industrial bases that essentially underpin their employment viability. Each is historically highly dependent upon their industrial ad port roles, and their corporate repositioning in an increasingly global market place has meant that they are more often not viable especially due to the high human resource costs.



Thus, dependency upon heavy industries like OneSteel, BHP/Billiton, Ford, GMH, Alcoa, NryStar, Australian Defence Forces as a major user, Vterra, and associated coal and container exporters and ship building industries are all impacting upon the situation in these regional cities. One change in corporate policy oversees immediate impacts upon these communities because of the higher percentage of employment dependency in these regional cities.

Interestingly, each has because of this orientation witnessed major urban design renovations of their foreshore edges in the 1990s largely funded by Commonwealth regional development funds in partnership with the state government as a secondary party. Thus, both Townsville's and Cairn's foreshores have witnessed major transformations in the 1990s-2000s, Geelong reinvented its maritime industrial foreshore in the late 1990s at the same time that Newcastle and Wollongong reinvented their foreshores. Thus, it was only because of a conscious Commonwealth-level policy initiative that regional cities obtained strategic economic renewal funding to undertake major regeneration projects that would otherwise be outside of the economic scope and capacity of the respective Regional City local government.

Lack of finance and economic capacity is a key issue for Regional City re development. Each is sizable but their financial resources are minimally spread to address normal 'rates-roads-rubbish' expectations of local governments but they lack the economic capacity and scale of ventures that Australian metropolitan local governments can engage with. So, large urban centre regeneration projects have limited capacities, are highly dependent upon large capital investments from their budgets, attract little matching state or commonwealth government funding support especially because these are invariably Labor-swinging electorates.

The dilemma with these patterns is that these Regional Cities are more often moribund and in desperate need of regeneration and inspiration. But, they lack the resources like the capital cities to drive this change, the policy commitment by state governments, coupled with resources, and the lack of exemplars that are regional-specific upon which to inspire this change.

This article proposes the need to develop a new tier of cities that respond to 'Regiopolis' development as the new growth urban centres in Australia's 21st Century. The aim is to develop their full (economic) potentials, with an appropriate federal and state policies and funding mechanism, that facilitate strong cooperation between this particular group of cities and their regional surroundings.

Mr David Engwicht

Director, Creative Communities International

The Paihia Story: how one community pulled itself up by its shoe laces

Paihia is a tourist town in the Bay of Islands, NZ, which suffered badly during the GFC. They thought the answer was a grand master plan. But Creative Communities convinced the town to try something new. Starting with just \$5000 and some "junk" that people were willing to donate, they created a town square that changed the mood of the town. They went on to create another six great public spaces, the latest a spectacular conversion of a car park into a community park costing \$150,000, all of the money raised by the community through an op-shop.

This presentation will discuss the secrets for these type of "co-created places" and the lessons learned from implementing this process in other towns and small cities. It is a process that works best in struggling small towns.



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Ms Julie Errey

Health Promotion Officer, Kiama Municipal Council

Implementing the Illawarra Regional Food Strategy - the Kiama way

The current food system faces many challenges of equity, sustainability, waste avoidance, human health, and animal welfare. We must address these challenges in order to secure a resilient food future. Local Government has a role to play in enabling access to adequate and nutritious food through our built and natural environment, planning, governance, program and service delivery, and policies. The Illawarra Councils recognise the important role of food in our lives, and its impact on our communities. Our region joins a growing movement focussed on rebuilding a relationship with good food, which is ethically produced, with minimal ecological impact. The development of the Illawarra Regional Food Strategy formed part of a 3 year funded NSW Environment Trust project.

This presentation will discuss the Strategy and how the 114 actions can and are being practically implemented. There are 4 themes in the Strategy.

Theme 1 - Building the capacity of our community through community education and providing skills in growing and preparing good food, encouraging food events to showcase local produce, supporting schools and community gardens, supporting emergency food relief and promoting food rescue initiatives.

The second theme is Planning, Infrastructure and Regulation which will be addressed through protecting agricultural land, ensuring suitable land for food production is available, addressing transport and distribution systems, and auditing existing infrastructure to understand barriers to access.

Theme 3 - Leadership, good governance and targeted advocacy strategies include researching local food production and distribution, developing policies to enable community and verge gardening and encouraging the emergence of food stallholders outlets.

The final theme is Supporting the local food economy through the development of new and existing community-based initiatives such as farmers markets, providing regional food to local communities and encouraging food tourism destinations.



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Mr Adam Garnys

NSW Manager, CETEC Pty Ltd

Co-author: Mr Jack Noonan, Queensland Manager, CETEC Pty Ltd

The Unintended and Emerging Consequences from Sustainability Initiatives

Often building developers, building owners, sustainability teams, property managers and tenants will undertake initiatives within the built environment that start with the very best of intentions, are sustainable, are green, and appear to be an improvement on the status quo. Unfortunately, the result of the initiative is quite different to what was intended.

This presentation will look at three main case studies, spanning over four years of personal and team research. All case studies involved initiatives that were classed as sustainable/green/etc. at the time, but following implementation led to consequences that would be detrimental to human health and occupant satisfaction. In order to achieve resilient cities, the long term consequences of sustainable initiatives and paramount and must be considered.

The case studies originated from work undertaken in Melbourne, Sydney, and Brisbane. Topics included trigeneration, HVAC/chiller upgrades, day lighting, and water efficiency/management.

Ms Jenny Goldie

National President, Sustainable Population Australia

An end to population growth critical to resilience

The next 20 years will not be like the last 20. There are at least two converging crises: climate change and growing oil vulnerability.

Climate change is already having an impact with more extreme weather events and temperatures inexorably rising. It is highly probable that more and more of a city's budget will have to be directed to adapting to climate change or into repairing damage after an extreme event such as a cyclone, bushfire or flood. Rising sea-levels and storm surges will be a problem as the century progresses. Higher temperatures will affect transport, for example, the buckling of rail lines in suburban Melbourne in the heatwave prior to the 2009 Black Saturday fires. More people will suffer from heat stress, putting a strain on the health system.

While electricity supplies can be maintained, particularly if there is a shift to renewable energy, maintaining supplies of liquid transport fuel is more problematic, however, as Australia's conventional oil production ends in 2020. Even now, 85% of our transport fuel has to be imported. There is no guarantee that there will be enough affordable oil on the global market, however, as growing conflict in oil-exporting regions makes distributing oil difficult. Closure of the Strait of Hormuz, for instance, would immediately cut off 35 per cent of the world's petroleum traded by sea, leaving Singapore, who refines our oil, and Australia highly vulnerable. Without oil, our society as we know it would cease to function.

Trying to accommodate ever more people in our cities undermines resilience to these crises. Stabilising population would mean that, rather than providing ever more resources for building new infrastructure (apart from seawalls to protect coastal cities, or electricity-based mass transit should car travel become unaffordable), resources can be used to maintain and repair existing infrastructure.



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Ms Paula Grant

Senior Lecturer, USQ

Co-author: Ms Marita Basson, Lecturer (Urban Design and Planning), USQ

Regional planning leadership in Queensland

Regional planning in Queensland has recently undergone a significant change in approach from statutory regional plans that covered regionally-specific policy to manage and coordinate growth and infrastructure to very specifically defined plans aimed at resolving land use conflicts between agriculture and mining. In effect the changes devolve regional growth management and planning responsibilities back to local government. The neo-liberalist rhetoric speaks of handing power back to local government with no discussion on the capacity of local government to exercise that power.

The regional governance literature points to the lack of a generally agreed upon definition of region and the emergence of new forms of governance to respond to regionalism and localism however it makes limited connections to the styles of leadership required to enable those governance structures.

The purpose of this paper is to identify what are the connections between emerging forms of regional governance and leadership styles relevant to the planning profession, particularly in local government. The approach will be to explore leadership models for regional planning using actor-network theory to analyse past and present regional planning documents. It is anticipated that the paper will identify a possible framework for leadership capacity building for the planning profession that will add value to planners playing an important role in the unfolding evolution of regional leadership and governance in Queensland.

Mr Philip Greenwood

AURIN, University of Melbourne

Co-author: Prof Richard Sinnott, Director, eResearch, University of Melbourne

Illustrating the Utility of the Australian Urban Research Infrastructure Network

The \$24m Australian Urban Research Infrastructure Network (AURIN) project (www.aurin.org.au) began in July 2010. AURIN has been tasked with developing a secure, web-based virtual environment (e-Infrastructure) offering seamless, secure access to diverse, distributed and extremely heterogeneous data sets from numerous agencies with an extensive portfolio of targeted analytical and visualization tools.

This is being provisioned for Australia-wide urban and built environment researchers itself a highly heterogeneous collection of research communities with diverse demands, through a unified urban research gateway (portal).

This talk describes these demands and how an advanced security-driven e-Infrastructure is being designed and implemented to accommodate this diversity of requirements, both from the user/researcher perspective and from the data provider perspective.

This talk will focus on the challenges facing AURIN and importantly the extended set of capabilities already supported. These include supporting research communities in health and well-being, transport, socio-economics and the changing population profile of Australian cities.



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The talk will include live demonstrations of tools and services that allow truly inter-disciplinary research to be undertaken that is at the heart of the challenges that must be tackled to establish truly liveable cities.

Ms Gail Hall

Project Coordinator, City of Melbourne

The Growing Green Guide: A guide to green roofs, walls and facades

Greening the rooftops and vertical surfaces of our buildings can play an important role in cooling, managing stormwater and increasing biodiversity in cities. However these outcomes may not be realised on all green roof, wall or facade projects if not designed at the outset.

This presentation outlines the importance of designing a green roof, wall or facade for the anticipated benefits, and highlights the key considerations needed to design for resilience. The importance of long term maintenance needs for these systems to continue providing benefits to the public realm will be explained.

The presentation also includes a discussion of the policy options that government agencies can adopt to support appropriate development of green roofs, walls and facades. Case studies will be used as examples and delegates can utilise all of the work from this project freely. The presentation is based on the Growing Green Guide for Melbourne project which was completed earlier this year.

See the website for more details: growinggreenguide.org

Mr Justin Hanrahan

Manager Recreation and Open Space, Yarra City Council

Creating new parks in an urban environment: identify the need, obtain the support, design for the community and bask in the warm feeling that follows

The City of Yarra is a vibrant, diverse municipality that includes many of Melbourne's iconic streets and neighbourhoods. While it includes several grand, Victorian era parks, many of its once-industrial neighbourhoods are severely lacking in public open space to serve the current and future populations.

Though the Open Space Strategy, adopted in 2007, identified opportunities for new parks, funding was scarce and momentum was lost until in 2009, when a new Council Plan set an ambitious target of creating five new parks by 2013.

Council embraced the opportunity to utilise funds collected from developers through open space contributions to resource the works and over a 5 year period, strategic objectives identified in the Strategy became reality.

Each project was the subject of extensive consultation which proved challenging in all cases and was combative in the extreme.



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What followed was a series of innovative solutions where leases were executed, existing parkland was extended, car parks were converted and roads closed - all with the aim of providing new, local parks for the community.

The resulting new open spaces - six completed and two more to be constructed by September 2014 - will provide a growing community with urban parks for the next century and will provide the platform for the projects to be developed over the next decade

Mr Matthew Harridge

Director, O'Brien Traffic

Sharing space - the key for sustainable transport

As congestion in our cities increases, it is clear that our focus should be moving people rather than moving cars.

This presentation will discuss:

- the current and future problems for transport;
- sharing / reallocating space so that we can address these problems;
- why we should share space;
- how do we share space; and
- why people are typically resistant to sharing space.

The presentation will provide recent examples of sharing space for different modes of transport (from local councils to international cities) and report on how this is creating a more sustainable transport system for cities. Examples will not only include sharing road space but also sharing our personal space (through ride sharing, car sharing and bicycle sharing).

The conclusion of the presentation is that we need to rethink about how we share / allocate space within our cities so that we can move people rather than simply moving cars.

A/Prof Kathi Holt-Damant

Head of Urban Design, QUT

Co-authors: Dr Mirko Guaralda, Lecturer in Architecture, QUT
Ms Miriam Taylor, Manager QCIDD, UQ & The Mater Hospital

Sensing the City: an approach to map sensory experiences for people with neurodiversity in Australian regional centres

The design approach of many urban environments focuses mainly on the visual experience. Public places, such as streets and railway stations, are often assessed against their physical attributes and our experiences of how comfortable or easy these places are to use. However, the engagement of other senses is fundamental to inform one's experience of place as well as enhance the way people relate to public spaces and navigate the built environment.



Smells, noises, tactile and spatial experiences of the body moving through space can be challenging for the general population, but even more so for people who are aging, young children and those with neurodiversity. Conditions that might be tolerable or acceptable for the majority of the population could be both painful and confusing for individuals with sensory differences the neurodiverse.

This paper documents a pilot project aiming to quantify sensory experiences in public urban spaces. Logan Central, only thirty minutes drive from Brisbane, has been investigated from this sensory perspective. The project team worked closely with Logan City Council, Queensland Police and a selected group of participants [neurotypical and neurodiverse].

This paper discusses the methodology applied, the preliminary assessment tool, and the challenges in collecting and selecting relevant data from the participants. The mixed method approach combined three different forms of data collection: a survey, a sensory profile and a guided designated walk through Logan Central. The findings from the study offers urban designers an opportunity to learn from people with neurodiversity what designing for inclusive public space might mean.

Mr Peter Ireland

Allen Jack + Cottier

Co-author: Mr Michael Heenan, CEO, Principal, Design, Allen Jack + Cottier

Could the Tsunami of the Aging Population be a Cause for Celebration?

The following topics from the conference program will be covered in a 20 minute oral presentation:

- Managing population growth and an ageing population
- Health promoting cities: ageing, children, safety, mental health
- Impact of new technology: how it will continue to drive change

In the presentation Peter will discuss the current challenges we face as a result of the aging population and the new approaches architects are thinking about and applying to their designs:

- A shift from traditional, single-use facilities accommodating only older people; to mixed-use developments which can accommodate all generations
- Adaptable or whole of life buildings which can be reconfigured as inhabitants age to fit their changing needs
- Mental health and integrating the elderly into the community
- Technological systems and how they have been developed to help people navigate around mixed-use developments
- GPS and Bluetooth technology used to help people find their way in the community outside their homes
- Monitoring technology used to assess a resident's behaviour and cognitive function over a period of time
- Intelligent control systems which use sensors, voice and facial recognition technology to help people with cognitive and physical impairments such as dementia, impaired mobility, hearing or sight loss.



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Dr Vivienne Ivory

Urban Scientist, Opus Research, Opus International Consultants

Co-authors: Dr Joel Burton, Researcher, Opus Research, Opus International Consultants

Dr Vince Dravitzki, Urban & environmental Scientist, Opus Research, Opus International Consultants

Testing for a future liveable central city following the Christchurch earthquakes

The earthquakes in Christchurch could provide the opportunity for a strong, vibrant central city lifestyle that offers a change from the existing, predominantly suburban environment. How might Christchurch people respond to new urban forms? What would they need to support good quality of life over the prolonged rebuild, and beyond? We present a recent study testing responses to different liveability scenarios as a means of anticipating future downstream effects of the central city rebuild.

The study focused on identifying factors that will encourage people to live in the central city over the rebuild (expected to take a number of years). Set as a 'virtual experiment', potential residents took part in scenarios of moving to the central city at different rebuild stages. Using computer assisted personal interviewing, responses to certain conditions were tested, including costs of dwelling features, amenity provision, and neighbourhood qualities. We also tested anticipated changes in everyday travel practices.

A total of 652 interviews were completed. Most important to potential residents were basic neighbourhood amenities and qualities that met everyday needs (such as food retailers and safety), even early in the rebuild. Analyses also identified a strong desire to live locally if moving to the central city, with participants anticipating they would shop, socialise, and use public places nearby. Our findings also showed that participants anticipate increasing active transport modes following a move to a more walkable environment, reflecting relationships seen in observational studies. This means the residential and commercial sectors should interact positively to strengthen the central business district.

Scenario testing can provide insights into future behaviours and therefore reveal how residents and cities may adapt to changing conditions. Findings can help identify potential roadblocks to a successful central city recovery, as well as policy and development opportunities to use urban design to prompt living well.

Mr Wayne Jackson

Energy Manager, Sydney Water

Co-authors: Mr Philip Woods, Principal Analyst Eco Efficiency, Sydney Water

Resource recovery from wastewater and trucked organic waste

Wastewater sludge is a very stable and productive feedstock for anaerobic digestion and the generation of biogas. Anaerobic digesters at wastewater treatment plants also have an untapped potential to cost effectively treat non-wastewater organic waste streams.

Sydney Water treats over 500 gigalitres of wastewater each year. Most of this wastewater is processed at plants that use anaerobic digesters. Eight of our wastewater plants produce sufficient biogas to generate enough electricity to significantly offset energy usage and to almost fully power our Bondi plant.



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This presentation discusses the value and effectiveness of co-digestion of wastewater sludge with organic wastes typically sent to landfill. Materials currently being tested or implemented on a small scale include industrial food wastes from dairy, brewery and soft drink manufacture, glycerol (a by-product of biodiesel manufacture), grease trap waste and commercial and municipal food waste. At full scale, the Australian wastewater industry has the potential to turn several hundred thousand tonnes of organic waste into energy and fertiliser each year. Numerous international examples of large scale processing of organic waste at wastewater treatment plants demonstrate the effectiveness of this approach.

The Australian wastewater sector provides a significant opportunity for the solid waste industry to find an environmental, social and financial solution to the increasing challenges of diverting organic wastes from landfill. Co-digestion of solid organic waste streams with wastewater sludge can increase energy recovery, reduce trucking distances for waste, reduce environmental risks and help make cities more liveable.

Ms Suzette Jackson

Director, Innate Ecology

Developing Food Resilience in Cities

Globally we face negative climatic and economic impacts on our food system, with more than one in every eight people going hungry daily (Source: FAO, 2013). As the Australian population living in urban areas passes 89% (UN 2102) there is a growing need to develop food resilience within our cities.

The degradation of urban food systems can be linked to urban sprawl, limited water resource, poor soil quality and reduced opportunity for productive landscapes within our urban and peri-urban areas. Australian city planning and development has been focussed on conventional approaches, curbed by economic value of physical assets and the current political determinant of planning for greater private vehicle use, population and urban growth.

To improve city resilience in our food systems we need to develop an integrated approach for productive urban landscapes, water cycles, food access and nutrition. In order to improve food systems in the urban ecosystem we look at the role of de-infrastructurisation in creating productive landscapes in urban and peri-urban areas. The paper outlines key issues associated with degraded urban ecological health and opportunities for increased productive landscapes in urban and peri-urban areas.

Mr Adrian Just

Director and Architect/ President, Archicology Architects/ Cleantech Industries Assoc

Is the Sunshine Coast the most sustainable region in Australia?

The Sunshine Coast is a peri-urban community just north of Brisbane which unashamedly aims to be the most sustainable Council or region in Australia. It appears to be living up to this claim after winning the coveted Banksia environmental award in 2013. Its motto for 'delivering a natural advantage' to business, matches the lifestyle and environmental quality of the coast.

This presentation explores the history and future of this claim through an exploration of the geographic, governmental, business and community sectors which all play a role in the rate and character of development on the coast.



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The geography and community have had a defining influence in the past, but the government and business sectors will need to play a more significant role in the future to control continuing development pressures. The results of these competing interests can be both impressive and frightening, and the vexed question of whether we love the place to death is currently being decided and will be borne out over the next decade.

The presentation is visually engaging and jammed with fascinating examples, facts, truths and hard truths. There is more than enough information for the audience to come to their own speculative conclusions about the future of the Sunshine Coast.

Mr Robert Keessen

Project Manager, Sydney Water Corporation

Smart water communities for a liveable city

Water is at the heart of a city's liveability, and Sydney Water is becoming increasingly aware that it must take an active role in planning the future of the city, to provide value to customers and stakeholders beyond the historic core services. In servicing growth, this means developing smart servicing options to support rapid urban growth at affordable prices.

Community scale decentralised systems have historically had their application in remote areas, small communities or individual allotments removed from conventional centralised systems. But these systems are now viable to the extent that they are being used in the urban fringe and in brownfields development sites. So can the use of community-scale decentralised systems be extended to mainstream suburban or urban settings?

Decentralised systems with recycled water supply offer liveability benefits, including the conservation of potable water sources, and reduced volume of surplus wastewater to be managed. The focus moves from wastewater effluent disposal to how to beneficially re-use water. If included in the early stages of urban planning, the liveability of the area can be enhanced through water features, drought-proofing open space, parks and gardens and sports facilities, thereby reducing the heat-island effect of urban development. Will these benefits be what change the servicing paradigm?

This paper sets out to provide insight into Sydney Water's journey in this emerging field. It started out with an high level investigations into alternative servicing strategies, a financial assessment of servicing the South West Growth Centre, a market sounding on the proposed delivery method, and a detailed feasibility for the Marsden Park development. Some thought provoking ideas are provided on the solutions which provide the best value to customers, and how they might be delivered in a future contestable market for water services.



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Ms Tiffany Key

Company Director, Mike Ritchie and Associates Pty Ltd

Halve Waste

3 years ago Albury Waste Management Centre received 200,000 tonnes of waste annually making it the the largest outside of Sydney. With Victoria's landfill levies increasing and the absence of a state imposed levy at the Albury site, much of Victoria's waste was jumping the border. Combined with low regional recycling rates, the Albury-Wodonga region was facing a waste crisis.

Run by the councils of the Albury-Wodonga region and managed by Mike Ritchie and Associates (MRA) Halve Waste's objective is to halve the volume of waste buried at the Albury landfill by 2014. This mutli-facetated and strategic education and awareness program is designed to engage every member of the community by giving them the tools and skills required for sustainable behaviours. Funded through a local Council imposed levy of \$2.50 on every tonne deposited every cent is spent on local waste education initiatives, tailored to businesses, schools and residents.

There has been a 24% decrease in waste to landfill, 38% if you consider where they would have been based on historical projections. Overall, there has been a 55% decrease in MSW to landfill. There is still a way to go, but considering the progress already made and with more Halve Waste initiatives and supporting Council changes still to occur the campaign is on track to its target. Other initiatives are currently being rolled out include an illegal dumping program.

There is no silver bullet to successful rural waste education campaigns but we argue that the Halve Waste model, with a self imposed levy to fund a wider program with the right mix of education initiatives and practical aid could be a blueprint for success in other rural areas.

Mr Jon King

Architect (Director), Design King Company Pty Ltd

Co-authors: Prof Steve Harfield, Associate professor, University of Technology Sydney

Mr Michael Hromek, PHD Candidate, University of technology Sydney

An incremental Rebuild - Post-quake Construction of a Liveable City in Christchurch NZ. A case study of the New Urban Village submission

The Breathe, The new urban village project international architectural and development competition attracted wide interest and set its sights on offering visionary and deliverable medium to high density housing models for Christchurch in the aftermath of the devastating earthquakes of 2010 and 2011. Run by Central and Local Government agencies in New Zealand as an initiative to develop, re-populate and re-activate the central city of Christchurch. The competition was predicated on the compulsory acquisition of private landholdings by the New Zealand Government (CERA) in order to provide the site for the competition and the long-term master plan for the city.



All submissions to the Architectural Competition had to be accompanied by a development partner and a financial offer to Government and Design King Company partnered with Ganellen, were one of four finalists in the Stage 1 and were subsequently invited to submit a Stage 2 entry and with the New Zealand Government now focused on how to deliver much-needed central city housing, the ideas generated by the competition are more relevant than ever.

Given the tragic dimension and scale of problems faced by the city the design team saw the development of any solution not just as a single piece of design on a particular site, nor as a design for mere reproduction on other sites, but a way of thinking that would create possibilities for design variations within a single set of ideas about community. This paper while reflecting on the design competition, will discuss our approach to the project from three perspectives. Firstly, what were the design team's initial aims, targets and aspirations for the project and what did the team understand a liveable city to be? Secondly, what was the process the design team undertook in attempting to realize these aspirations and what were the significant challenges to achieving these aims? And thirdly, given the New Zealand Governments desire to activate the rebuild in Christchurch, what opportunities might there be to re-balance the often conflicting forces that shape our contemporary cities and build a 21st Century city that is truly liveable and sustainable.

Mr David Klingberg

Chief Executive Officer, David Lock Associates

Meeting the Accessibility Needs of Developing Cities

Bus Rapid Transit (BRT) is leading the way in the sustainable development of great Asian cities. As a catalyst for sustainable growth and an integrator of urban areas it is proving to be an effective way of achieving and keeping pace with rapid urban growth in the Asian region. ITP in association with David Lock Associates are at the forefront of planning for and designing the BRT systems and associated urban areas that support and surround these transit opportunities.

During the presentation, David will discuss:

The growth of BRT in Jakarta, Cebu and Manila and how this is leading the way in the application of cutting edge design and technology.

How a relatively low cost mass transit solution can improve both the levels and quality of access to support growth.

Challenges associated with implementing BRT or improving bus transit.

What valuable and pertinent lessons can be gathered for the consideration when looking to implement this in an Australian market.

Attendees will gain insight into the current growth of the BRT system in Asian and how this can be harnessed for the future of potential polycentric city forms in Australia.



Mrs Nadya Krienke-Becker

Managing Director, BrandCatalyst

Engaging Communities on Sustainability

Although many cities, Councils and organisations have commenced implementing sustainability initiatives, few are maximising engagement with their stakeholders on their initiatives. Community and stakeholder engagement is key in reaping the rewards from implementing sustainable projects, gaining buy-in, motivating behavior change and in ensuring that sustainability continues to remain a key strategic driver for change.

The "Engaging Communities on Sustainability" session is designed to provide attendees with insights and procedures for communicating their sustainability activities within their key communities, in order to create real change through true engagement.

This Session Covers:

- National and international trends in sustainability and communication
- Opportunities gained through effective engagement (performance improvement, innovation, growth)
- The importance of communicating your sustainability journey
- Social media, how it has impacted the green and sustainable market
- What is involved in creating, executing and maintaining successful integrated engagement strategies

Mr Kevin Luten

Director, Behaviour Design Works

Using Social Networks and Behaviour Change to Strengthen Liveability

Over the past several years, the most trusted research organisation in Australia has successfully trialled the Energymark community energy efficiency intervention with over 2000 households, achieving reductions in household carbon emissions of 12 - 23%. Australia's Commonwealth Scientific and Industrial Research Organisation (CSIRO) designed this program to demonstrate the key role behavioural interventions can play in achieving significant energy efficiency outcomes. CSIRO is now leading the effort to scale this program through an implementation partnership with Behaviour Design Works, Australia's leading organisation delivering community-based behaviour change interventions.

This presentation will review the behaviour change approach at the heart of the Energymark program, summarise outcomes from the research trials, and outline how proactive behaviour change interventions should play a larger role in planning for liveable cities.

Energymark is an intervention program which incorporates a number of mechanisms known to facilitate behaviour change, including social support, goal setting, feedback, and provision of information from a trusted source. Energymark works through a range of small community-based groups who commit to a series of 'kitchen table' discussions related to energy, climate change mitigation and adaptation. 'Group Convenors', the leaders of each group, are the glue of the Energymark program - recruiting friends and family to participate and then liaising with program organisers.



Results of the program show substantial impacts. Positive shifts were found on measures of awareness, knowledge and values. Most importantly, there were significant behavioural impacts, with participants reducing household carbon footprints on average up to 12 - 23%.

Energymark is truly about neighbourhoods and how social connections and social support can become the heart of significant changes in the energy efficiency domain. More importantly, Energymark demonstrates the potential for a fully-scalable behaviour change model that should become a larger consideration in planning for sustainable and healthy communities.

Mr Colin Lyons

Economist, Department of Industry

Is population growth necessary to counter the impacts of an ageing population?

There is a widespread belief among many people, promoted by various commentators that population growth is necessary and important in order to deal with an ageing population. Business groups are especially prominent in fostering this policy stance.

There is clearly benefit to be derived by many in the business world from ongoing population growth and in some cases, the more the merrier. We are told that if we don't boost our population, especially with more people of working age, we will not be able to maintain the existing level of services. The argument is that there will be a shrinking tax base.

What will be an ageing population mean for the future planning of our cities? Will they become a less lively and interesting place in which to live? Will the relevant councils become increasingly unable to maintain the level of services that residents expect?

In this paper, I will examine how authorities in general and planning agencies in particular in overseas countries deal with ageing populations.

I hope to be able to answer the question posed in this abstract title.

Ms Sarah Maddock

Place Facilitator, Adelaide City Council

The People's Streets: Adelaide City Council's Place Led Approach

Adelaide City Council has adopted a placemaking approach to building One City, Many Places. The place led approach is about working with people to create great places. Great places for living and for community life to flourish. Great places for businesses to start up and grow. Great places for knowledge and creativity to develop.

This approach is a sustainable way to work. It is about working directly with the people that use and understand the place to ensure their needs and aspirations are the basis for any change and shaping priorities. It is also about how Adelaide City Council adapts as an organisation to embrace this approach and builds community capacity as it changes the way it operates. By working in this way it creates stronger ownership of a place, which in turn results in better place governance.



This paper will explore the three place pilot areas where Adelaide City Council is testing the placemaking approach. A placemaking team has been established to facilitate the place pilots and drive the change across the Council.

Engagement commenced in February 2014 using innovative ways to understand the existing identity of a place and identify what people would like to change and create. Engagement has ranged from conversations in pubs, recording ideas in phone booths through to one on one workshops.

Out of the engagement process the community have identified projects they would like to establish and we are now working with the community to identify priorities. Within the pilot areas new community leaders have been identified who are leading the change within the pilot areas.

In April 2014 some of the ideas that arise from the engagement will be implemented and trialled by the community and Council, following this a longer term action plan written by the community will also be established.

Mr Peter Maganov

Manager, Sustainability & Strategic Waste, Randwick City Council

Measuring the success (or otherwise) of environmental programs through jurisdictional State of the Environment reporting

Is there a way of determining the measurable and meaningful outcome of environmental policy implementation in Australia? Jurisdictional state of the environment reporting has been carried out across different tiers of government in this country for more than a decade, attempting in part to provide the definitive report card on the progress of sound management of our natural and urban environments.

How well are these findings referred and utilised in planning and designing for the conservation of our environmental resources and their management into the future? Have there been useful warnings heeded or hindered, or faced head-on, in relation to the environmental issues confronting our society and if so, what might be the implications for reporters and governments over decades to come?

This presentation aims to put into context the success (or otherwise) of environmental decision-making, the policies that flow from these decisions and the critical implementation paths as monitored, measured and reported in state of the environment reports at all levels of government in Australia.



A/Prof Alan March

Associate Dean (Undergraduate), University of Melbourne

Co-author: Mr Jorge Leon, PhD Researcher, University of Melbourne

A Policy Analysis View of Urban Planning Changes to Improve Disaster Resilience

The threat of disasters based in hazards such as bushfires, floods, tsunamis and other risk sources affecting urban areas is increasing internationally and in Australia. The ongoing expansion and intensification of human settlements, combined with more extreme weather and the prospect of climate change, mean that human based systems will increasingly be confronted with circumstances that can potentially overwhelm their ability to cope. This occasionally but catastrophically results in loss of life, damage to structures, roads and infrastructure, and impacts upon economic and social systems.

The discipline of urban planning has the potential to deliver advantageous urban and regional outcomes. It does so by using a range of tools and mechanisms that can bring about more favourable spatial and physical arrangements that, in turn, are associated with improved social, economic and ecological outcomes. Many of these mechanisms can also be used to improve resilience to disaster risks, although the means of doing so are currently still being developed, particularly as they often compete with other goals. Further, the integration and delivery of urban planning mechanisms to reduce disaster risks is often only undertaken in the immediate aftermath of major disaster events while political and budgetary will remains.

An ongoing challenge for urban planning is to continue to adapt and change planning policies and practices as understandings of disaster threats emerge, new technologies are developed, funding is sourced, or political will develops after a major crisis occurs. To examine this problem, this paper sets out ways of integrating urban planning mechanisms with those of disaster risk reduction. It then it employs policy analysis techniques to examine the mechanisms and circumstances that facilitated improved planning mechanisms for bushfire risk reduction in urban planning in Victoria, Australia.

Mr Will Marshall

Fire & Risk Engineering Manager, AECOM

Future Proofing Evacuation for an Ageing Population

The population is ageing and the way people use and interact with the buildings within our cities will be impacted significantly by this change. The way that our cities and buildings react to these changing demands and requirements of an ageing population will require consideration to avoid alienating a large demographic of the population from our cities, and these considerations need to be made now. A significant shift of the elderly out of the cities would vastly change the dynamics of our cities, resulting in more journeys to visit relatives as well as an altered demand for goods and services within our cities.

As the population ages the way people access and egress from buildings needs to be carefully considered, with additional provisions provided to account for the reduced mobility linked to ageing. Australia building codes approach the facilities for the evacuation of people with mobility difficulties differently to other parts of the world. While building evacuation provisions are rarely utilised, the consequence of them being inadequate are significant. A comparison of these code provisions and how the changing code demographics could influence changes in code provisions in the future will be made, showing where Australia compares to other countries in the world.



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Attitudes are starting to change towards the provision for facilities to aid the evacuation of disabled occupants within the building industry. I believe this change needs to be expanded to allow for the ageing population. We need to be aware of how quickly this change in demographic will arrive and what we should be doing now to plan for this to ensure that our cities remain liveable for all of the population and not relying just on past provisions.

Dr Annie Matan

Lecturer, Curtin University Sustainability Policy (CUSP) Ins

Active transport, urban form and human health: Developing the links

Walking and cycling, together referred to as active transport, are widely regarded as the healthiest and most sustainable means of transport. The health benefits, and subsequent economic benefits particularly from health-related productivity, of walkable, transit orientated urban forms are well established and are measurable. The relationships between human health and transportation choices are increasingly becoming an important focus in city planning and urban design.

This paper examines the relationships between human health, urban form and transport, looking at how urban form can encourage or discourage active transport and the potential human health impacts of these urban planning decisions. Urban form characteristics, such as density levels and mixed land uses, along with transportation indicators, such as vehicle kilometres travelled and access to public transport, are identified along with the provision of pedestrian and bicycle infrastructure. These indicators can be used to assess future and existing land use.

The paper then describes the development of a methodology to assess human health outcomes using transportation outputs from a typical urban development model. The methodology is discussed using a case study. The paper concludes that inclusive active transport requires a number of elements, particularly planning, infrastructure, evaluation and modification.

Mr John Maynard

Senior Project Coordinator, City of Sydney

Taking Space and Making Place - Developing Guidelines for a Safer City

In recent times much of the literature around what constitutes a safe city has had a particular focus on the application of Crime Prevention Through Environmental Design principles, that is that through careful assessment of the physical and social environment and a thorough understanding of place and context, safer places will be created.

Since 2001 NSW has had in place basic guidelines requiring developers to identify crime risk and to minimise opportunities for crime through the development assessment process. Research has revealed that the vague language, general information and limited direction in the guidelines coupled with few commitments on the part of the developer to implement site or setting specific CPTED advice has arguably produced limited outcomes (Clancey, Lee and Fisher 2011).



While other jurisdictions primarily Victoria (2005), Western Australia (2006) and Queensland (2007) have produced illustrated guidelines which speak to designers, architects, developers and planners a number of emerging crime prevention issues in contemporary practice such as the night time economy, increased security hardware, the green environment, wayfinding, urban structure and architecture in major renewal areas and social cohesion in apartment living settings have all presented new challenges to local authorities and their partners in producing safe, attractive and vibrant communities.

The presentation will aim to demonstrate how some of these challenges are being met through the development of illustrated guidelines for a safer city which provide advice and direction to a range of disciplines in coordinating efforts to increase perceptions of fear and improve community image leading to flourishing and more liveable cities.

Ms Caroline McLaren

Principal, CoActiv8

Co-authors: Mr Brad Krauskopf, Founder & CEO, Hub Australia

The pressing need and opportunity to shift to Distributed - Flexible - Collaborative Work

A national network of suburban and regional work hubs - or Smart Work Hubs - has the capacity to reduce city congestion, increase workforce participation, improve work-life balance and boost business productivity. Australia's first Smart Work Hub - Space&Co. Rouse Hill Town Centre - was launched in April 2014, with a number of others launching during 2014.

Caroline will share the importance of this shift to a distributed, flexible and collaborative work environment - from an individual, employer, government and property perspective - and the three phases of shifting to this new work environment.

- 1) Build the network of Smart Work Hubs and sales / accreditation network
- 2) Support large organisations to make the move to distributed work
- 3) Demonstrate to large organisations how to benefit from distributed, flexible and collaborative work world

A/Prof Caroline Miller

Associate Professor, Planning Programme, School of People, Environment

Co-author: Ms Hayley Millar, Graduate Student, Planning Programme, School of People, Environment

Maori Food Gardens: Revived Heritage and Community Food Resource

This paper will look at the role that traditional Maori Food Gardens can play in terms of reviving a cultural and heritage source which may also have a positive role to play in also providing fresh produce for use by the Maori community.

Food is central to many Maori cultural practices and providing food for a hui (meeting) or tangi (funeral) is an essential aspect of making guests welcome. Thus traditional Maori communities maintained extensive gardens to produce kumara (sweet potatoes) and other produce as part of the concept of manaakitanga (hospitality). Many of these gardens have disappeared as Maori moved from being a largely rurally based population to an urban one.



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The sites of these gardens are however still known and as such represent both a cultural heritage resource and a potential opportunity for Maori communities to re-establish a source of healthy food. We will, in this paper, look at the potential for reviving these gardens, the values they offer and the potential issue involved in re-establishing these gardens as a long term food resource.

Miss Celeste Morgan

Sustainability Director, E2Designlab

Exploring the Water-Energy-Food nexus: setting a vision for sustainable urban agriculture

The supply of food to urban communities is resource intensive, with large amounts of energy and water going into the production of the food that keeps us healthy and keeps our urban restaurants alive and buzzing. There are more and more initiatives striving to keep food miles down by supporting local growers and urban agriculture, but while this may reduce carbon content, a sustainable water source is needed to irrigate crops in urban areas and in the surrounding hinterlands.

In a water sensitive city, where all sources of water are well balanced with local demands, alternative water sources like recycled water and harvesting stormwater could be stored and distributed for food irrigation, providing a dedicated source which is less subject to restrictions in times of drought. In turn, greater application of urban agriculture could be a delivery mechanism for planners to introduce greenery and opportunities for self-sufficiency in communities, supporting economic and cultural well-being at a local level.

This presentation shares research on how urban planning can begin to support and locate sustainable food industries in and around urban areas by balancing needs for water and energy reduction. Case studies in Victoria, New South Wales and the UK will be used to demonstrate balanced urban food initiatives where energy and water benefits have been achieved. A series of lessons for urban planning and development will be shared, demonstrating that food-sensitive urban design and planning should be a major driver for cities in Australia.

Mr Richard Palmer

Associate Director, WSP Buildings Pty Ltd

Resource Intensity and Next Generation Urban Infrastructure

This paper is of a professional nature discussing the quantified analysis of urban resource intensity (energy, carbon emissions, water and waste) and potential urban infrastructure design interventions.

In the midst of the huge advances in new urbanism pioneered by leading urban designers globally, new thinking in municipal infrastructure has unfortunately been less evident. Urban designers and town planners have not traditionally been required to consider resource intensity as conventional urban infrastructure has been up to the task of supplying whatever is required.

However, the bio-physical planetary boundaries described by the Stockholm Resilience Institute (such as climate change) are forcing us to reconsider the environmental impact of the built. Next generation urban infrastructure is critical if our future cities are to adequately address these challenges.



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The focus of infrastructure engineering has typically been on peak demand ‘governing the size of pipes, transformers and treatment plants’ yet the principal environmental impact comes from the overall resource use of the built environment. The quantified assessment of resource intensity is missing from the master-planning process. This paper explores some concepts for assessing resource intensity through urban design.

Through alternative infrastructure (water re-use systems, decentralised tri-generation systems, wetland-based water treatment etc) the fundamental links between water, waste, energy and ecology can be optimised.

This paper explores some of the opportunities and benefits of next generation urban infrastructure and explores case studies in governance and finance models to deliver urban utility services.

Ms Fiona Plesman

Organisational Performance and Development Manager, Penrith City Council

Co-author: Ms Bernadette Riad, Sustainability Coordinator, Penrith City Council

Future proofing a regional city

This presentation explores Penrith City Councils work to embed sustainability within core council business and includes how a suite of strategies, including the alignment of the sustainability unit with Corporate Planning and Business Improvement within the OD department supports mainstreaming sustainability within local government.

The organisational strategies, initiatives and specific actions taken by the Penrith City Council Sustainability Team will be covered in an interactive, colourful presentation that will introduce you to ECO the gecko (mascot and awareness raising symbol), sustainability competitions and scholarships, education programs, building and other policy changes and local business engagement programs are explored as well as the new Ecological footprint of the Penrith LGA. The Penrith Ecological footprint was a major piece of research commissioned to assist planning and reporting for Penrith City, the presentation will cover how this tool will raise awareness and inform future strategies and programs to reduce the ecological footprint and future proof the City.

Penrith City is on the western edge of Sydney, it is one of the fastest growing cities in Australia and home to over 184,000 people whose median age is 34 years. 80% of Penrith is rural and rural residential and has identified flooding, extreme heatwaves, storms and bushfires as a significant risk to its future. Future proofing is important and core business, how tools such as a city specific ecological footprint will be used to help future proof Penrith City including the new initiatives this work generates, the partnerships formed and challenges faced to make Penrith City not only liveable but green, vibrant, healthy, happy and sustainable will be the focus of the presentation.



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Ms Lalitha Ramachandran

Senior Project Manager Sustainability, City of Port Phillip

Co-author: Ms Helen Scott, Director, CORE Sustainability Services

Building Community Resilience: The Weather Ready Program

This oral presentation will provide the research and analysis that led to the development of the City of Port Phillip's Community Climate Resilience Program and a key component, the Weather Ready Program, one of the first inner-urban community resilience programs in Australia. The presentation will demonstrate the impetus and development process for the program, the components of the Weather Ready program, and the learnings from the first pilot conducted in 2013.

About the Weather Ready Program a community weather preparedness program centred around local street or apartment based networks to create safe, informed and resilient communities. The Weather Ready program creates opportunities to bring neighbours together at street or block parties or barbeques, to get to know one another while learning how to help their households and each other better prepare for floods, storms or heatwaves, using 5 easy to remember emergency preparedness steps. This may be as simple as ensuring they have an emergency management plan, are prepared to check that elderly neighbours are ok or looking after a neighbour's property for them during extreme weather if they are on holidays.

Over a beer or cuppa, neighbours get to know each other, share stories and build links about how to support themselves and each other in the event of a flood, heatwave or storm. Weather Ready groups are supported with a range of training and support materials, and encouraged to find locally relevant ways to network and become good Weather Ready neighbours.

Ms Alianne Rance

Associate, Net Balance

Co-author: Ms Fiona Silke, Associate, Net Balance

Adaptation in property development: facilitating cross-sectoral knowledge sharing

Climate change is modifying the way we need to plan our cities and future human settlements. While current lack of regulation has left property developers in Australia with limited impetus for change, the viability of our future settlements and wider serious ramifications are of grave concern if adaptation is considered an option: not a requirement. There are however non-regulatory motivations that can be used to engage with the development industry and promote adaptation in new development.

A series of focus groups were run to engage the property development industry and associated stakeholder groups such as the legal sector, financial institutions, industry associations, insurance representative and developers themselves across the east coast of Australia. Stakeholders put forward their sector perspectives on why the property industry should adapt to a changing climate. These have been incorporated into an engagement model to more effectively motivate property developers to attenuate climate risk. This paper discusses the proposed model and facilitation of knowledge sharing using key perspectives from each sector group.



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Mr Ehsan Sharifi

PhD Candidate, University of South Australia

Co-author: Prof Steffen Lehmann, Head of School, Professor of Architecture, School of Built Environment, Curtin University

Green Urbanism: Comparative Analysis of Surface Urban Heat Island Effect in Central Sydney

This presentation explores the urbanisation of Australian cities into urban regions and strategies to future-proofing these cities by mitigating the urban heat island effect. Urbanisation is a defining feature of the 21st century. Between 2010 and 2030, some 85 per cent of total global urban growth will take place in developing countries projected to triple their entire urban area (UN-Habitat, 2008; The World Bank, 2009).

This unprecedented urban expansion poses a historic challenge and opportunity to cities and the international development community. However, it also provides an opportunity to plan, design, develop, build and manage new type of low-carbon city districts that are ecologically and economically sustainable, and socially more inclusive. To achieve this we need to design comfortable and inhabitable indoor and outdoor spaces. This includes the problem areas of water, biodiversity, green spaces and green roofs, community gardens, urban farming, street trees, urban forests, cool materials and public space networks.

All these topics are essential in the context of green urbanism and the need to mitigate increasing urban temperatures and energy transfer into buildings; however, their interplay and inter-connectedness is not always fully understood.

While at the micro-level, the formulation and orientation of built form is often an outcome of architectural design, at the macro-level, the planning lay-out of streets and green spaces, the applied density, compactness and configuration of urban blocks have a large impact on climatic efficiency of such new precincts.

The presenter will introduce two complex studies currently conducted at the sd+b Centre: the comparative study of urban microclimates of three Australian cities (Sydney, Melbourne, Adelaide) and the study of urban microclimates of three Chinese cities (Tianjin, Shenzhen, Shenyang); all with their unique climatic and cultural characteristics.

Results: The conclusion will present recommendations (principles) for future-proofing, retrofitting and transforming existing cities and for the possible urban development of green low-to-no carbon precincts.



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Mrs Eugenie Stockmann

Director, The Green Swing

Challenges for sustainable small scale infill developments - Case study: The Green Swing

How sustainable is The Green Swing's townhouse style development?

What were the hurdles encountered by The Green Swing to achieve sustainable outcomes?

What can Local Government and other Government organisations do to encourage more sustainable, small scale infill development?

In Western Australia there is a trend to increase density closer to the Perth CBD and other activity centres. Existing built up areas are re-zoned, often resulting in the house on the traditional quarter acre block being bulldozed to make way for a townhouse style development.

This paper uses The Green Swing as a case study. The Green Swing is a small scale privately owned housing development that claims to be pushing the boundaries of what sustainable town house style development at this small scale can be. The Case Study assesses the sustainability features of the Green Swing using the sustainability indicator tools developed by Ringvall (2012). It then looks at the hurdles and barriers to sustainable development by investigating the difficulties The Green Swing encountered in getting planning and building approval. These related to local government street scape policy (materials, orientation, setbacks, garages, location of front doors and form, mass and proportion); permissions for water saving measures such as shared rainwater tanks and grey water disbursement over commonly owned land; the combination of and requirements for class 1 and 2 dwellings under the BCA; and exclusive use and communal shared spaces.

The Green Swing is a ground breaking development that scores high on the sustainability indicator tools (Ringvall, 2012). Despite an increasing interest and focus on sustainability in residential housing development in Australia, The Green Swing experienced significant barriers to sustainable development.

These barriers highlight a number of policy areas to be addressed by Local Government and other Government agencies to actively encourage sustainable developments.

Mr Bruce Taper

Director, Kinesis

Rethinking the Urban Planning Toolbox: Discovering new quantitative tools to optimise the liveability of our cities

For too long we have been planning cities with an incomplete set of tools. To create truly liveable cities we need to further leverage the analytical power of big data in strategic urban design decisions.

In his presentation, the director of Kinesis Bruce Taper will share a range of case studies from some of Australia's most innovative councils and developers on how they have leveraged the analytical power of custom built software to make strategic urban planning decisions that have enhanced the liveability, affordability and sustainability of their cities and precincts.



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Dr Martin Tomitsch

Lecturer, The University of Sydney

Towards the real-time city: An investigation of public displays for behaviour change and sustainable living

This talk explores the opportunities of using new information technologies for delivering meaningful feedback on residential electricity consumption by making consumption visible and allowing for social comparison.

If well designed, energy feedback devices can encourage behaviour change and conservation in the order of 10 per cent . However, even when visualised, electricity consumption feedback remains somewhat meaningless without any form of contextual frame of reference. Consequently, research studies have proposed self-comparison and social comparison to improve the value of feedback and to encourage positive behaviour change. With the rise of social media, there are opportunities to harvest the dynamics of social online networks, such as Facebook, to encourage social competition. While this approach offers direct comparison with friends, it takes electricity feedback out of its physical context.

Based on these considerations we will discuss two studies we conducted that provide situated electricity feedback in the street. In our first study, we installed five blackboard displays at terrace houses in a Sydney neighbourhood. For a period of seven weeks, we updated the blackboards daily, to reflect the household's electricity consumption. In the second study, we installed two interactive feedback displays at two houses for a period of three weeks. The participating households further received access to a custom-built tablet application, which provided a number of visualisations of their electricity consumption.

The talk will discuss these two studies in light of their effectiveness for raising awareness about the topic of energy consumption and issues of sustainability. In particular we found that the situated displays encouraged an active dialogue on sustainability topics in the neighbourhood. The talk will conclude with discussing how our findings can be extended to other contexts, such as office buildings, as well as emerging opportunities for using public displays to improve urban liveability.

Mr Giro Villano

Chief Technologist, State Governments, HP Australia

Future of work: dispersing jobs and the urban impacts

Technology has had a profound impact on the placement of employment, we have seen through technological change, the growth of communications and the internet the dispersing of jobs away from the cities and into urban areas. It is this increase in communications capability, combined with the ability to move computing resources away from the 'office' has allowed jobs to become more dispersed (mobile).

Technology has also allowed companies to move away from city cores and follow residential expansion. Companies are locating in urban areas, where land costs are lower and regulatory hurdles are fewer. While technology allows us to work remotely, the role of the urban offices is becoming even more important. Companies [such as Google, Twitter] are finding that they need the vibrancy and density of an urban-style environment in order to collaborate, innovate and stay competitive.



The urban impact of job dispersal is that this dispersal is driven into areas where there is good transportation, educational institutions, health care facilities, low crime rate, low congestion and political and financial infrastructure for innovative companies to establish themselves. Thus to attract companies, mobile workers, governments local, state and federal need to understand what infrastructure and financial incentives [taxes, grants] are required to attract industry and people into an area. The challenge is most important in those areas where there has been a decline in both industry and investment due to high crime rates, poor infrastructure and a lack of good educational institutions and health care.

The urban impact of dispersing work is the need for Transport that increases efficiency, with a focus on alternatives to driving. Educational institutions must be responsive to the needs of the economy and provide the right kinds of training, Government investment either direct [taxation] or indirectly [grants] to stimulate business growth, while also investing in the provision of affordable housing.

Mr Tobias Volbert

Founder 7 Senses / Business Development Manager an, 7 Senses / Playscape Creations

Why the need of a City of 7 Senses

Current thinking has accessible and inclusive innovation largely driven by the notion of people depending on wheelchairs. However only 2.7% of the Queensland population has a physical disability that requires a mobility aid. They represent only a small fraction of physical disabilities. And what of non-physical disabilities? How are we planning for the whole spectrum of disability, which is actually a rapid growing health problem? How we consider disability today, significantly impacts the potential for community inclusion in the future.

But it's not just mental illness that is growing. So too are sensory disabilities. Currently 1 in 6 Australians are affected by hearing loss. It's projected to be 1 in every 4 by 2050. The numbers of people with low vision and blindness are projected to almost double by 2024. Sensory processing disabilities such as Autism are also on the rise. One in every 100 children in Queensland has Autism. This rate doubles every 5 years. And to add to it all, we know that disability prevalence is significantly higher as we age. Dementia rates are currently 1 in every 10 older person over age of 65. This is expected to triple by 2030.

Why are these facts and figures important?

If we aim to create an accessible, inclusive, liveable city, we need to consider who and how our community can readily participate in city centre spaces. For example, currently there are ~500 families in Brisbane Council catchment who cannot participate in our city centre due to their child having autism. The current design of our city centre places makes it near on impossible for these families to access and enjoy events held in King George Square or the Botanic Gardens. The accessibility ramp doesn't cater for an autistic child. We need to consider how everybody, also disabled people, can readily transit through our city centre. Take a person with a disabling mental illness. How does our city centre support their transit from Central Station to the Queen Street Mall Busway? Such transits are often vital for people accessing specialist health care. Barriers in transport accessibility are one of the primary reasons people 'drop out' of specialist tertiary care.

Finally, these facts and figures have a significant impact on the city centre economy. Small businesses lose potential revenue when entire families avoid the city due to one member of the family having a disability. Some facts



By 2030, the Australian population is expected to increase by 15%, but the rates of disability prevalence are exponentially growing. By 2030, at least 25% of the Brisbane population will have a non-physical disability. One in four people. Considering the growing rates of disabling mental illness, we shouldn't be that surprised by the figure. In fact, the World Health Organisation estimates that depression and anxiety conditions will be the number one health burden in both the developed and developing nations by 2030. Greater than cancer, greater than heart conditions or diabetes. Common disorders that can lead to crippling disability, such as anxiety conditions, are currently experienced by 14% of all Queenslanders. It's estimated that this will rise to as high as 30% by 2030.

Our cities and its design needs to move past current thinking on accessibility; move past thinking about wheel chair accessibility, and towards thinking about how sensory aware spaces. By considering the 7 senses, not only do we improve the accessibility and liveability of our city in 2030 for our growing disabled population. It will also enhance the experience for other 75% of the population fortunate to live without significant impairment.

Mr Aaron Wallis

Director, Playce Pty Ltd

Is it okay to just hang out? A social approach to planning for youth & others in the community

Teenage obesity is climbing and becoming a significant health issue. Depression and suicide in teens is also increasing. There is also a growing social disconnection across generations & communities that is impacting on the health and wellbeing of our youth. We have a responsibility and opportunity to take a lead role in instigating positive change.

Skateparks have and will continue to be great sporting facilities for young people who enjoy those pursuits. They are however not the only solution in teenage recreation and provision. Very few girls skate nor do many male teenagers. Therefore whilst providing a great sporting function, they are not necessarily catering for a large range of young people that still have few recreation opportunities in our neighbourhoods that in many instances are becoming more isolated and disconnected with the rapid growth of our cities and lagging transport infrastructure.

Therefore we need to take stock and look at what most young people actually want to do....'JUST HANG OUT'. So how can we provide facilities, programs and spaces that can accommodate positive recreation opportunities and social interaction appropriately?

This presentation will therefore look at some recent successful social approaches to park and recreation planning, consultation strategies for both young people and others in the community to start defining the 'right' questions to ask. It will then discuss recent precedent projects undertaken by a number of councils around Australia that have endeavoured to look beyond skate as the only solution for teenage recreation in their communities.



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Dr Marcus White

Lecturer, University of Melbourne

Quantitative assessment of view from within high density development using a perverted light modelling approach

Cities throughout the world are currently experiencing increased levels of urbanisation resulting in pressure for densification of urban form. Questions about the impact on quality of life; mental health; and general liveability are being raised in response to very dense developments proposed in many cities including Melbourne, Australia. In some cases, high density towers in close proximity are proposed with anticipated 'views' facing directly into other residential towers. Though not a problems for 'off the plan' investors, ongoing users may be impacted, potentially not able see water, any form of vegetation or even glimpse the sky.

As city densities increase, aspect or view becomes increasingly important. There is a growing need for tools to assess and guide the form of development which can quantify how much sky or vegetation can be seen from each dwelling?

This paper explores a new analysis and design approach which perverts light simulation modelling within animation and game production software, combined with Java based raster image-processing software ImageJ, to calculate the amount of water, vegetation or sky visible from within buildings at a precinct scale.

This approach results in the quantification of 'view quality' based on visual access to these specific elements either separately or simultaneously. The approach can weight view elements depending on preference using different 'rendering channels'. Existing urban morphology can be assessed, as can potential urban form of proposed developments.

The approach could be used by urban designers, architects and planners when setting up precinct design guidelines to respond to the 'visual amenity' aspect of liveability; by architects and developers during design process to maximise the quality of views to maximise profits; by mental health researchers exploring biophilia or benefits of sky-view. The approach also has potential for application at ground level in assessing the visual amenity of streets as a contributing factor of walkability.

Mr Euan Williamson

ESD Advisor, City of Yarra

Sustainable Design Assessment in the Planning Process. City Of Yarra, a journey from program to policy

Sustainable Design Assessment in the Planning Process (SDAPP) is a program undertaken in the City Of Yarra which guides applicants towards better sustainable performance outcomes in an inner suburban built environment. Requiring detailed submissions from development applicants, SDAPP includes clear educational information and sets Environmentally Sustainable Development (ESD) standards that are practical, achievable and deliver a high community benefit to cost ratio.

Data from the first 2½ years shows a successful 95% participation of over 260 separate development applications in the SDAPP program, with a strong trend towards all large development reaching a best practice standard.





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These carefully developed ESD standards are beyond the minimum standards currently reached by medium and high density development in many Australian cities, and include the provision of bicycle parking, daylight and natural ventilation to dwellings, as well as energy efficiency and stormwater quality standards required for a sustainable future in our cities.

SDAPP is now adopted by over 20 municipal planning departments across Victoria. A leader in the rollout of the SDAPP program, the City of Yarra is currently in the process of transforming the process from a largely voluntary program to be formally embedded within the planning scheme. With ongoing industry engagement, the SDAPP program includes new ESD assessment tools, site visits and case-studies to facilitate a more sustainable city.

Setting a high standard in sustainability of its own buildings, the City of Yarra has been an accredited Carbon Neutral Council for two years and has won numerous awards for its work in this area

Mr Darren Willman

Business Development Manager, Climate Friendly

The Carbon Domino: How a simple carbon mitigation action provided value to the whole Council

The following presentation's aim is to show that a single tool for improving a city's sustainability approach can lead to broader benefits. These flow-on benefits reach areas such as resident engagement, reputation, marketing, procurement, finance, waste and events management. The presentation will conclude with a basic tool/model that will enable you to embed carbon and energy solutions into your Council strategy creating benefits across all departments.

The presentation will cycle through a series of government organisations case studies presenting carbon and renewable energy projects. It will show how these organisations use simple tools such as carbon offsetting and energy efficiency to create shared value benefiting various areas of a Council.

Embarking your Council on the sustainability journey has many flow-on benefits. Each Council department has something to gain from a sustainability approach. Quick wins and innovative case studies will inspire you to take action. Learn how to save money, reduce your energy consumption and carbon footprint while engaging your commercial and households residents.

Mr Oliver Yates

Chief Executive Officer, Clean Energy Finance Corporation

Renewable Energy and Energy Productivity: Making cities more healthy, sustainable and resilient

Cities and towns across Australia face a range of economic and social challenges as well as environmental challenges. Renewable energy and energy efficiency projects can help address all these challenges: creating more sustainable and liveable cities while strengthening and building communities and their economic resilience. Nevertheless, there are a number of barriers to obtaining finance for such projects, which the Clean Energy Finance Corporation (CEFC) was established to address.

The CEFC, through its investment portfolio of over \$500m in renewable energy and energy efficiency across Australia, has identified extensive economic, social and environmental benefits for rural towns through to capital cities.



These projects assist existing businesses to reduce costs and improve competitiveness, and help create new business opportunities. Projects that range from solar, wind and biogas, to trigeneration, energy efficient street lighting and more energy efficient heating, ventilation and cooling have a direct impact on a city's liveability and sustainability.

Retrofitting buildings to enhance their energy efficiency is one of the most cost-effective ways to reduce emissions and on-going operational costs, reduce the impact of rising energy prices, attract tenants, boost productivity and future-proof our cities. The improvements also often enhance the building's value and extend the life of the building.

Councils also have significant potential to enhance local amenity while reducing carbon emissions and cutting costs. Through more energy efficient street lighting councils can make substantial savings while installing solar PV, energy efficient lighting, cogeneration plants and upgrading air conditioning systems also provide opportunities for councils to improve their city.

In his presentation, Oliver Yates will provide case studies and learnings from projects that can benefit cities, businesses, councils and the local communities. He will address the barriers for financing these projects and how the CEFC has worked with businesses, councils and banks to help overcome these barriers.



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Poster Presentations

Prof T. Mahn Ahn

Professor, Department of Landscape Architecture, Seoul National University

More Parks to Make Cities More Liveable

Parks are basic needs for urban dwellers and essential elements of cities. Parks are critical for better living environment and the physical and mental health of citizens. WHO recommends supply of minimum 9 square meters of urban parks for each urban dweller. Many cities in the world meet this guideline and provide more urban park area per person. Data shows London, New York, Paris provide 26.9m², 18.6m², and 11.6m² of urban park per person respectively. However, more cities afford far less park area per capita. For example, Seoul of the Republic of Korea, provides only 6.1m² which is far less than other larger cities but more than the standard (6m²) set by national law.

This paper, first, analyzes and compares per capita park areas of selected Korean cities and other international cities. Second, analyses in more detail of park area per person, and dispersion of parks in a very green poor Korean city, to highlight and bring to attention the serious lack of parks and accessibility issues.

Third, policy implications like collecting parks impact fee for funding land acquisition and maintenance of parks, and taxation of up to 1% on sales or inherited land values. It is hoped that this prototypical analysis and research be applied in the same manner and help many Korean cities and other cities in the world find how much urban park area and where they need to make the cities more liveable. Building up many such analyses and research will allow us an Up-Lift Approach with which we focus on cities most lagging behind among national cities in providing urban parks, or we focus on sections within a city that most lack parks.

Mr Nawaf Alhajaj

PhD Candidate, University of Western Australia

Jeddah 2030: A Healthy City

Jeddah is a coastal city and the second largest urban area in Saudi Arabia. At present, Jeddah has no public open space (POS) system that can provide social and ecological services commensurate with the city's scale. There are no large parks despite the many undeveloped large blocks and unused wasteland within its urban fabric. Currently, the provision of POS is less than 2 m² per person in the entire city and less than 1 m² per person in more than half of the city's planned residential districts. In addition, Jeddah is a car-dependent city. Its current urban development still encourages the use of personal cars as it continues to build new wide streets, bypasses and tunnels. The city also suffers from poor pedestrian connectivity between its urban parts, minimal public transport and a high level of air pollution. Most importantly, Jeddah possesses poor storm-water networks and significant parts of its new urban areas to the east are flood prone.

This paper develops an environmental urban design scenario at the metropolitan scale to improve physical connectivity between the city's urban areas and its waterfront to minimise the dependence on cars and increase opportunities for walking and other physical activity. The scenario intends to improve the ecological health of Jeddah, along with protecting the city from future possible flooding. The scenario here has been developed through using a multi-approach methodology which includes descriptive, interpretive and projective design strategies.



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Dr Kathleen Brasher

Manager Community Participation, COTA Vic

COTA Age Friendly Victoria: creating great places for all ages

COTA Age Friendly Victoria is supporting older people in twenty locations across Victoria to audit, consult and report on the extent to which their community is 'age-friendly' and to work with business, government, civil society and academia to implement a plan of action for change. An age-friendly city or community is defined by the World Health Organization as one that 'adapts its structures and services to be accessible to and inclusive of older people with varying needs and capacities'. Inclusive built environments are essential if older people are to have opportunities for health, participation, security and life-long learning, the key elements which support active ageing.

COTA Age Friendly Victoria actively involves older people working alongside government and civil society in decision-making, implementation and evaluation of a plan of action. International experience and research has identified eight domains which reflect the determinants of active ageing. Older people themselves will assess strengths and gaps in each of these domains, using checklists of age-friendly features including characteristics of the built environment.

COTA Victoria has developed a framework to guide the monitoring and evaluation of the COTA Age Friendly Victoria process. The framework provides a template for the systematic, scale-able collection of information to demonstrate the achievement of program outcomes at the 2 year and 5 year mark. This will enable COTA to demonstrate efficiency and effectiveness of the COTA Age Friendly Victoria (COTA AFV) approach and to gain a deeper understanding of the key strategies that facilitate successful implementation. This session will present the COTA Age Friendly Victoria process and early results from community audits, with a particular focus on how improvements in liveability will be tracked.

A/Prof Zbigniew Bromberek

Head of PhD Program, Poznan University of Technology

Towards sustainability - a greenfield city planning method

In this paper, a method proposed for planning an urban settlement is presented. The method is particularly suitable for greenfield lands, where technical infrastructure is underdeveloped or not in existence. It is argued that the method can deliver a sustainable estate at the same time integrating the urban structure and providing for its optimal servicing conditions.

The method is based on the multi-criterion analysis, which is applied to optimise the settlement's networked infrastructure. The long-term outlook, based on cradle-to-cradle life cycles, is taken into account to lower energy content and improve cost-effectiveness of operating the services such as water supply, drainage, sewage and power systems, telecommunications and other.



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The planning starts with indication of areas suitable for particular uses and then laying out network services rather than first subdividing the land into the building lots. Topography, including slope orientation, geomorphological barriers, wind direction and other factors are considered to determine the capital cost of infrastructure and its operational requirements.

Other aspects, such as maintenance works, repairs, upgrading and demolishing are also considered to achieve a high degree of durability and reliability at the lowest possible life cycle cost in a broad sense of the term.

Once the network geometric topology is selected and traced, a grid of adequate size blocks can be plotted. Block sizes should allow for flexible response to local conditions, e.g. climatic or acoustic, through building orientation and design as well as inclusion of site features into the response.

The method incorporates a consideration of several scenarios of sustainable development of the area in question as well as construction of decision-makers preference models.

The proposal presented in this paper is the first stage of a research project, which aims at providing comprehensive planning guidelines for sustainable cities.

Mr Lakdeepal de Silva

PhD Candidate, Macquarie University

Satellite Hyperspectral Remote Sensing and GIS for incorporating Environmental Investment in Land Use Planning by Local Government Authorities in Australia

Hyperspectral Remote Sensing (HRS) images can be utilised to identify unique spectral signatures of vegetation types at given locations. The development of satellites for commercial Hyperspectral image acquisition provides new opportunities to achieve cost effective regular monitoring and mapping of land cover types in comparison to imagery acquired through airborne methods.

The spatial resolution of Satellite HRS imagery generally vary between 30-60m. Spectral Mixture Analysis (SMA) methods can be used to identify land cover fractions including vegetation that occur at subpixel level. Hence, satellite HRS images and SMA analysis provides environmental practitioners new, cost effective opportunities to map vegetation species at sub-pixel level, more frequently, at higher resolutions, which are important for achieving higher levels of environmental sustainability in urban environments.

A study using Hyperspectral imagery was completed in 2012 in The Nurrangy Reserve situated in Doonside NSW. The images used were acquired in 2001 by the Hyperion sensor on board NASA's EO1 satellite. The Sequential Maximum Angle Convex Cone (SMACC) SMA method was used to analyse subpixel vegetation fractions. The field verification of the image analysis results via 16 Endmember sites (Endmember site is an area where the corresponding image pixel represents a single species) and 9 field verification sites resulted in 85% overall unmixing reliability with a 78% Endmember identification rate and a 68% Species identification rate. Despite the age of the dataset used in the study, the results depicted considerable promise for the workflow employed for identification of subpixel vegetation fractions.

This paper presents the methodology of the study, the findings and their potential improvements and discusses the relevance of the outcomes in relation to conservation of urban forest ecosystems and new opportunities that arise as a result, for the incorporation of environmental investment in land use planning.



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Ms Elaine Delgado

Strategic Planner, City of Marion

Towards 2040: Building a Liveable Community

Communities are increasingly expecting their local councils to deliver more services to higher standards, while creating greater operating efficiencies. The City of Marion's approach to creating a liveable city responds to this expectation by looking holistically at the infrastructure and services it provides, as well as the role it plays, to progress opportunities that have the potential to transform the City.

The strategic and collaborative approach being developed at the City of Marion provides the foundations for leadership across our broad sustainability agenda that includes integration of environmental, social, cultural and economic outcomes. This integrated approach is a move away from a more traditional silo approach that often considers single issues in isolation from other more holistic outcomes.

Community engagement plays a vital role in the demonstration of Council's commitment to effective governance through balancing open leadership with sensitivity to community needs, interests and aspirations. The City of Marion Engagement Framework has been created with the belief that meaningful community engagement results in better decisions and plays a critical role in the development of sustainable policies and decisions in government, the private sector and local communities. City of Marion is also exploring taking community engagement beyond its traditional domain to truly empowering communities through a community governance approach.

Corporate frameworks such as a Strategic Management Framework and a Business Excellence Framework provide the mechanisms by which the aspirations of the Marion Community are at the heart of strategic planning, decision making and supporting systems and processes of Council. These frameworks ensure that strategic priorities and outcomes are fundamental to decisions around management of people, assets and budgets.

The City of Marion's approach to creating a liveable city will be explored using examples including how we are responding to climate change, managing natural resources, health promotion and urban planning.

Ms Melinda Dodson

Principal Architect, Melinda Dodson Architects

An Architectural Exploration of Occupant Behaviours and Community Preferences to Medium Density Demonstration Housing Precincts in Canberra

Canberra is unique as a planned Garden City. Known as the city in the landscape, Australia's national capital presents a microcosm of the challenges faced by cities coming to terms with homogenous, green-fields developments as a sweeping architectural style. However, like many cities, Canberra is now shifting its attention to smaller homes in order to contain the outward expansion of the city boundaries. Among the contemporary challenges of urban growth in Australia, suburban house size has doubled in recent decades while household occupant numbers continue to shrink (per capita averages). There is empirical research on the contribution of house size to increased energy, resource and land use, but perhaps what is known less conclusively is the relationship to consumer choice and occupant behaviours.



Questions surrounding housing choice, occupant behaviours, design and the relationship of smaller houses to the spaciousness of Canberra's landscape setting can be explored through design, observation and reflection. For an architect, demonstration projects and user-centred design research may facilitate a better design fit and in-turn foster increased interest in smaller houses from both a planning policy and a market demand perspective.

The Canberra post-war boom years saw numerous medium density demonstration projects, focused on smaller more sustainable ways of living. These projects often took the form of attached dwellings within a communal landscape setting. Using these case studies, along with more recent architectural work by the author, this research seeks to draw on these design traditions. Explored is an architectural approach to understanding, visualising, modelling and implementing smaller ways of living in a more sustainable built environment.

Project examples discussed include the Molonglo Demonstration Precinct, Canberra, designed by Melinda Dodson Architects, which is among the settings for this case study research on user satisfaction with smaller houses.

Lucinda Hartley
CEO, CoDesign Studio

Short term action, long term change: How pop up urban experiments can change the way we create cities.

Australia is one of the world's most urbanised nations with in excess of 80% of its population living in cities (DIT, 2013). With the urban population set to swell by an additional 30% in the next 40 years (DIT, 2013) there is a challenge to meet the demand of providing more infrastructure and services in less time. This raises the important question of how can we do more, with less and achieve it more quickly?

Pop up urban experiments may offer one solution, emerging as a way to work with the community to test out new ways to get more from our street and public spaces. Tactical Urbanism (Lydon, 2012) (which includes pop-up spaces, guerilla gardening and parks that are built in a weekend) is an emerging, experimental approach to urban development that offers a low-cost, low-risk and fast approach to planning and improving neighbourhoods. Small-scale 'tactical' projects, characterised by their community-focus and immediate outcomes, offer a new approach to driving urban development that is flexible, iterative and responsive to local needs.

Such approaches, have emerged as an important way to test new ideas for city making at the grass roots level – such as removing car parks, adding public space or bicycle lanes – while reducing risks for citizens, developers and local government (Pfeifer, 2013).

Beyond temporary experiments, the tactical approach also offers benefits to long term strategic planning and urban change: to test and prototype permanent solutions in a way that is participatory and engaging; and to build long-lasting social networks that engender co-responsibility and, ultimately, behaviour change. This poster will explore emerging examples of tactical road projects in Australia including the Dodds Street Reboot, and offer a comparison with international examples including Pavement to Plaza Program in New York City and international Park(ing) Day. This talk will also outline the benefits and challenges of the tactical approach for local governments, developers and design professionals, and how they might consider integrating adaptive, flexible and iterative approaches to neighbourhood improvement.



Mr Ryan James

.id consulting (the population experts)

Defining and understanding communities of interest in a local area

.id, in conjunction with the City of Parramatta, have put together a suite of information which is an add-on to our ubiquitous profile.id information tool.

We have typically defined communities in the past by geographic location. Increasingly we have found a demand for extra datasets from our clients, cross-tabulated by a defining characteristic. Councils around Australia are being asked to report on the status and characteristics of particular population groups, for instance young children, the elderly, students, people with a disability, people with poor English proficiency, and those on low incomes.

The type of questions Parramatta sought to answer:

- Are young children increasingly living in high density housing and renting, while the older population live in larger houses?
- Do the large student population study locally or are they living in the area for the cheaper housing and going to university elsewhere?
- How are low income households adjusting to the loss of social housing places?
- Which migrant groups have the lowest proficiency in English and does this affect their ability to find employment?

Until now, these are the sort of questions you would need to commission an expert researcher to look at. .id is making cross-tabulated data available in time series to local councils to enable them to bring out the story of each community in their area.

Obtaining the very large datasets required from the ABS also proved problematic, as the ABS have restricted the data you can obtain for people in dwellings.

This presentation will briefly discuss the defining of communities of interest, issues with the definition of benchmarks, and obtaining large datasets, and finish by examining some of the interesting stories the data revealed for the City of Parramatta.

Mr Goce Karanfilovski

The Spatial Distribution of Travel to Work by Sustainable Transport Modes: A Melbourne Case Study

The transport network plays a significant role in the development of healthy, sustainable, resilient and liveable cities. To understand the impacts of current policies and to guide the future planning of liveable settlements, it is important to monitor and analyse trends in transport behaviour. The aim of this research is to investigate changes over time in the performance and spatial distribution of the principal sustainable modes of transport in the Melbourne urban region.

This is done through analysis of ABS Census data from 2001, 2006 and 2011, using TableBuilder Pro, to explore trends in mode share for the journey to work by public, private and active transport in the Melbourne Statistical Division (SD).



The spatial distribution of these trips is analysed through destination zones including the Central Business District (CBD), adjacent inner-city locations and dispersed suburban locations across the Melbourne SD. The mode shares for work trips for Melbourne in 2006 and 2011 is further explored at a finer scale using 12 suburban destination zones.

The results show that growth in use of sustainable modes was concentrated in the inner city, with the majority of work-trips by public and active transport modes being to destinations in the Melbourne CBD. After a minor decline in 2006, the CBD increased its share of this market, with a 4.9% growth in public transport and a 43.5% growth in cycling. Although the proportion of trips by private transport declined by 3.4% across the Melbourne SD, the car remains the dominant mode for trips to suburban destinations, whilst cycling and walking to work trips on Melbourne's urban fringe decreased by 23.3% and 15.9% respectively.

To tackle these unsustainable patterns, the paper concludes with recommendations for a suite of policies to improve the efficiency and effectiveness of public transport operations through application of network planning principles and concurrent policies to reduce the incentives to private car use in Melbourne's suburbs.

Dr Philip Kilby

Principal Researcher, NICTA

BusPlus - A Hub-and-Shuttle system for Off-peak Public Transport

We present the BusPlus system - a radical re-think of off-peak public transport. It is a hub-and-shuttle system combining a mixed fleet of buses, taxis and minibuses.

The system is based around carefully chosen "hub" nodes. A high-frequency bus service links hub nodes, while taxis or minibuses are used to shuttle passengers between hubs and local bus stops.

A single ticket (same price as a bus ticket) covers both taxi and bus legs. Like a fixed-schedule service, BusPlus takes passengers bus-stop to bus-stop. Unlike a fixed-schedule system, passengers must book and pay ahead of their travel.

The system has many advantages. It reduces travel time, reduces wait time, provides good service regardless of origin and destination, and reduces green-house gas emissions.

The system has been tested by simulation using actual travel data from four weekends in Canberra. The system was simulated allowing passengers to book up to 10 minutes before departure, and with buses departing hubs every 10 minutes. A fleet of taxis was used as shuttles, with up to three passengers per taxi.

The simulation showed that the BusPlus system was feasible, would be less expensive to run than the current fixed-schedule system, and would reduce average travel time from 28 minutes to 18 minutes. In addition, wait time would be reduced, as most services in the current fixed-schedule system have one hour between buses, whereas BusPlus used a 10-minute book-ahead time.

The operating costs of BusPlus can rise if demand rises. However, simulations show that BusPlus is no more expensive than the current fixed-schedule system even with a 30% increase in demand. The talk will give details of the BusPlus system, and look at the results of the simulation.



Miss Chengjun Li

Graduate, The University of Melbourne

Creating user-oriented bus stops: An investigation of guidelines in locating bus stops in Melbourne, London and Vancouver

Buses are a vital part of Melbourne's public transport system, and bus stops are a crucial factor in providing a seamless transit journey. Therefore, the question of the location of bus stops is important to the creation of a user-friendly transit network. There are many examples in Melbourne of bus-stop locations that create significant problems for users.

This paper analyses the guidelines and standards used in locating bus stops in metropolitan Melbourne, with special focus on their impacts on passengers experience, and identifies the gaps and limitations which impede Melbourne's bus network planning.

The research uses two qualitative methods - case studies and interviews. In the first part of the paper, Melbourne's bus planning guidelines and standards are benchmarked against those used in London and Vancouver. Next, the overarching goals and strategies, from which bus-stop location guidelines are derived in each of the case-study cities, are described and analysed. This provides a basis from which to assess the effectiveness of Melbourne's guidelines in delivering user-oriented service.

The findings show that, when compared with London and Vancouver, Melbourne provides basic guidelines and standards across several categories: passenger safety, consideration of other road traffic and surrounding land use. However, limited attention is given to locating bus stops in ways that promote network integration and passenger convenience. As a result, decisions are often made by local government and public transport and road agency officers on an ad hoc basis, and opportunities for improvements are often missed.

Melbourne lacks clear political commitment and strong strategic objectives, which could provide a foundation for specific guidelines and better decision-making. To achieve successful user-oriented bus stops in Melbourne, rigorous change in the fundamental strategic objectives underlying a number of plans at different government levels across all responsible authorities is crucial.

Mrs Toyah McCarthy

Coordinator Healthy Communities, City of Wanneroo

Wanneroo leads the Way: a Local Government approach to creating a healthy and vibrant City

The City of Wanneroo (The City) recognises that good health and wellbeing are essential to creating a healthy and vibrant city; acknowledging its role in the promotion of health and wellbeing as part of core business. The City is a proactive local government being the first Metropolitan Local Government in WA to receive the Australian Government Healthy Communities Initiative (HCI) funding in 2010; a successful project which has since received the highly commended award (2012) and State Winner (2013) in the Heart Foundation Healthy Community Awards. The key health challenges for Wanneroo are related to a higher number of smokers, greater alcohol intake at harmful levels, higher levels of physical inactivity, unhealthy eating and mental health issues compared to average Metropolitan WA.



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To address these challenges and prioritise health and wellbeing, the City adopted its first Community Health and Wellbeing policy in 2012 and Public Health Plan in 2013. The Public Health Plan is a non legislated requirement for the City and is established to acknowledge the important role local government plays to influence health and wellbeing outcomes for the community. Specifically, the City identifies four key areas which as a Local Government we are positioned to operate within including facilitation, advisory, advocacy and direct delivery.

The Public Health Plan encompasses a whole of population approach outlining key strategies in priority areas of Environmental Health, Chronic Disease Prevention and Mental Health Promotion. Including key action to address new and emerging health risks for the City such as food safety and healthy choices, active design, increasing community awareness, active transport and the impact of safety on mental health.

The City will continue to strive forward with a strong evidence base, Health Promotion staffing resources, strategic direction and key partnerships to ensure that the health and wellbeing of our communities is prioritised.

Dr Trivess Moore

Research Fellow, Centre for Urban Research, RMIT University

Co-authors: Prof Ralph Horne, Deputy Pro Vice Chancellor, Research, RMIT University

Placing value on good design for cities: evidence and prospects

The built environment is routinely valued by various stakeholders. Commonly, value is established through market prices for rent or purchase. So-called intangible elements of value may be neglected. Moreover, the value of the built environment from the perspective of users, the general public or different (public) stakeholders through the building life will inevitably differ from those of individual stakeholders.

The starting point of this paper is that there is a need to understand and articulate value in order to inform decisions about what is good design and how to achieve best value built environment outcomes. Without a rigorous evidence base, the arguments for good design are too easily dismissed as part of a discipline-based belief system and any additional costs that arise may be deemed unnecessary.

Research addressing these issues has begun to emerge internationally, particularly from the UK. However, the value of good design is under-researched in Australia. Therefore there is a requirement for research which seeks to improve the evidence surrounding the value of good design in the Australian context. This paper presents a review of the current state of the value of good design research for the built environment, both in Australia and internationally. Following this, methods to address key gaps for valuation are presented and steps for further research outlined.



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Dr Yaacov, John B. Myers

Clinical scientist, Wellspring's Universal Environment P/L

The cement that binds us. What makes cities liveable?

What is the cement that binds us? What is the currency to use to measure this? To use an analogy: After the Children of Jacob had left Egypt, where they were slaves, they constructed a golden calf for which they were punished. G-d told Moses to build a Mishkan, a temple which they carried around with them, on which G-d would rest, as in a cloud, from which He instructed Moses, to tell the people what G-d expects of them and when to travel in the Wilderness.

The mishkan was built of acacia wood with sockets of silver made from a compulsory fixed donation of a half shekel, as the foundation, which was used as a census, and free donations of copper, gold, skins and wood were accepted from all, until they had brought enough. Skilled artisans were chosen who also taught others, and those skilled in whatever they were good at to do the same. They made the altars, the golden menorah, the table for the show-bread and the holy of holies, which the High Priest would enter on the Day of Atonement once a year, to pray to G-d for forgiveness for the past and to purify our souls to ensure we are inscribed for blessing in each New year.

The mishkan was replaced when they entered the Land of Israel, over 3000y ago, by a Temple and cities. And when the sanctuary was destroyed G-d said, "build me a sanctuary that I may dwell within them. The awareness of and consideration of others in you is the sanctuary within that has kept the city and diversity alive. Accountability and responsibility is the cement mix and doing Good deeds now! is the raw currency that bind us, which provides a sense of purpose and Oneness that determines function, the basis of sustainability, liveability and environment.

Mr Ehsan Sharifi

PhD Candidate, University of South Australia

Co-authors: Prof John Boland, Professor of Environmental Mathematics; Director,, University of South Australia

Prof Steffen Lehmann, Professor of Sustainable Design; Director, sd+b Ce, University of South Australia

Thermal Resilience and Urban Green Infrastructures in Public Space: Three Case Studies in Adelaide, South Australia

Existing projections of global warming indicate a likely increase of 2.5°C or more in the surface temperature of Australia by 2070. In this scenario, higher densities will face even more heat stress. Cities experience the effect of artificial heat storage, which can result in the higher densities being significantly hotter than the peri-urban surroundings (frequently up to 4.5°C or more), known as the Urban Heat Island (UHI) effect. Urban surfaces, structure and lifestyle have been cited as the main contributors to the UHI effect. Under question is how and to what extent contemporary public spaces can become more resilient to such +7°C heat stress while maintaining their vitality?



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In this paper, we define thermal resilience in public space and report on the correlations between shadow patterns, urban greenery and thermal resilience in Hajek Plaza, Rundle Mall and Hindmarsh Square in Adelaide, South Australia. Case studies are being monitored between 20°C and 42°C from February 2013 to February 2014. Thermal resilience of each public space is being calculated based on standard deviation and frequency of recorded temperatures versus general temperature of Adelaide CBD.

Surface temperatures, air temperature and apparent temperature (real feel) are being compared to urban greenery ratio, typology and distribution, shadow patterns and surface material typology to investigate which physical attribute of public space correlate more with its thermal resilience. Results indicate that soft-landscaped, small to medium scale and particularly tree-covered areas are more resilient to higher temperatures. Thus, increase in tree canopy and medium size open spaces are suggested to achieve more thermal resilience in public space.

Mr Neil Storey

Director Plant and Structures, Safe Work Australia

Safe Design: Healthy, safe and sustainable

Designers have a general duty under the model Work Health and Safety (WHS) Act to ensure, so far as is reasonable practicable, that the plant, substance or structure is designed to be without risks to the health and safety of persons.

Designers include professionals such as architects, building designers, engineers, industrial designers, chemists, building surveyors, interior designers, landscape architects, town planners and designers of plant control systems like software and electrical systems. So all these designers have legislative duties to deliver designs that will minimise the risk of harm to people that are healthy, safe and sustainable.

Also developed by Safe Work Australia, the Australian WHS Strategy 2012-2022 seeks to improve workplace health and safety in Australia through seven action areas. One of these is healthy and safe by design and national initiatives such as safe design will support the strategic outcome that hazards will be eliminated or minimised by design.

Cities include homes, workplaces and places of leisure and entertainment where we all live, work and play. Although all of these might not end up as workplaces they will always be a workplace at some point - even if only while they are being built.

The aim of the presentation is to highlight that delivering infrastructure that is healthy and safe for workers will benefit all it is a good idea and it is actually required by the model WHS legislation. A range of examples will be used to highlight how designers have delivered good “and not so good infrastructure and how using the safe design approach can help designers not only meet their legislative duties but to also better understand how the design process can deliver healthy, safe and sustainable cities.



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Mr Tony Walker

Manager Place Management and Economic Development, Fairfield City Council

A Place Managers ToolKit to Build Liveable Cities

Place Management as a professional practice arrived in Sydney in 1994 with the establishment of two crisis driven Place Management programs, one at Kings Cross (Sydney City Council) and the other at Cabramatta Town Centre (Fairfield City Council) and the appearance of numerous Mainstreet local economic programs in retail and business centre's under Local Government management.

Since this time debates on the role of Place Management in the context of supporting quality urban living and involvement in city building have become increasingly more sophisticated alongside the evolution of such theories on urban ecology, climate change resilience and initiatives such as the Healthy City movement.

Over 14 years working as a Place Manager at two different Local Council's I have developed a standard 'tool kit' that can be applied to the design of all place based programs. Broadly this tool kit includes:

- a) place engagement (i.e. liaison, advocacy, consultation, multidisciplinary solutions);
- b) place knowledge (i.e. layers, systems and champions);
- c) (re)development activity (i.e. private and public sector development);
- d) economic development (i.e. marketing, promotion, planning); and ,
- e) public domain management (i.e. create, renew and maintain).
- f) capacity building (i.e. community knowledge, capability and independence)

A Fairfield City Centre Strategic Plan (Vision) was developed in 2004 following extensive consultation with local stakeholders including key political players from both the State and Local spheres of Government. The Fairfield City Centre supports one of the most multicultural and social disadvantaged centre's in Australia. I am currently refreshing this plan within a livable city framework guided by a Place Management 'tool kit'.

My paper will focus on the role of this Place Managers 'tool kit' in delivering livable cities using the implementation of the Fairfield City Centre Strategic Plan as the example.