Report prepared by Mick McCarthy
Director South West Group
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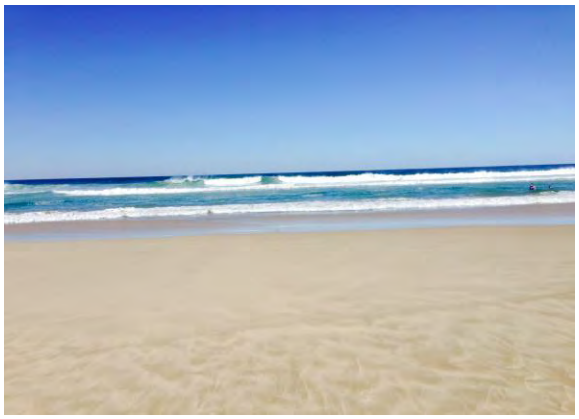


Background

The Director South West Group attended the 6th Making Cities Liveable Conference and Sustainable Transformation Conference held from 7 to 19 June 2013 at the Novotel Melbourne in Saint Kilda, Victoria. A report on the key messages and learning from the conference was prepared and is available on request.

The Director South West Group attended the 7th Making Cities Liveable Conference held from 9 to 11 July 2014 at the Mantra on Salt Beach in Kingscliff, NSW.

The conference was based on a number of key themes including Health Promoting Cities, Future of Work, Sustainable Cities, Managing an Ageing Population, Waste Management, Planning Liveable & Vibrant Communities, Resilient Cities (Future Proofing our Cities), Transport & Logistics, Climate Change Adaptation, Food Security and the Impact of New Technology.

Key Messages and Learning

Some of the key take home messages and learning from the conference, based on the sessions attended by the Director South West Group and those with a regional context, are outlined below.

- Legacy Based City Renewal Projects
- Linking Cities to Sustainable and Liveable Regions
- Urban Development, Sustainable Cities and Regions
- Active Transport and Accessibility
- Climate Change Adaptation

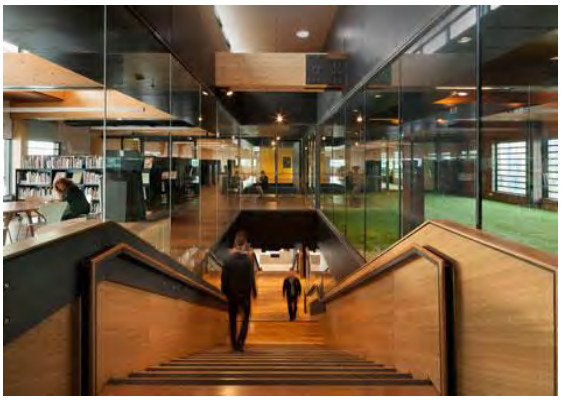
Legacy Based City Renewal Projects
Claire Johnston – Project Director Victor Harbour, Lend Lease

City and urban projects based on points of differentiation, diversity of uses and experience and quality developments are more likely to create a positive and longer term legacy for the future.

Lend Lease has the 20 year development rights to the Victoria Harbour redevelopment project, which is approximately half way through its implementation phase.

The Victoria Harbour project is 30 hectare, $4.5 billion precinct development based on a combination of a knowledge intensive consumer and producer services activity centre comprising 2,800 dwellings, 21,000 sqm retail (80% complete), 350,000 sqm commercial (70% complete), 24,000 sqm mixed use and 8,000 sqm community facilities.

The recently completed Library at the Dock is the centrepiece of the community facilities hub and incorporates state of the art and sustainable building design (6+ star energy rating) and products using plantation grown, laminated hardwood timbers as the main construction material.

Library at the Dock uses sustainable laminated timbers as the main construction material

The library is located in a prime position on the waterfront and is surrounded by parklands and open space linking the surrounding residential, retail and commercial areas. Lend Lease recognised the importance of establishing this facility in the "heart" of the development and financially contributed toward this partnership project with the City of Melbourne and Place Victoria.

The library is a key activation centre and gathering place for the precinct and enhances the community experiences and attractiveness of the area.

Mirvac are also playing a key role in legacy sustainability projects nationally with projects like the Olympic Village at Newington, Orion 6 star shopping centre, new and retrofit commercial buildings in city centres (20 Bond Street and 8 Chifley Street in Sydney) and its zero carbon "Harmony 9" star rated prototype home at Waverley Park.

Mirvac's Harmony 9 zero carbon prototype home at Waverly Park

The Harmony 9 prototype demonstrates a range of sustainable initiatives including use of low toxic and recycled materials, a recycled water system, renewable energy generation, smart metering and the highest-rated appliances for both water and energy use. Over a year of operation, Harmony 9 makes major savings compared to a conventional home by reducing greenhouse gas emission by 12 tonnes, saving 125,000 litres of mains water, and saving up to $1,200 on energy bills

Linking Cities to Sustainable and Liveable Regions
Tim Bennett – Principal, RED Primary

As population growth continues to concentrate and expand their urban footprint in cities, the role of outer metropolitan and regional centres as a source of food production, employment and innovative approaches to business clustering emerges as a key productivity and sustainability challenge for communities.

Nature provides many examples of harmony and dynamic equilibrium that can be applied to man-made systems and processes. It is becoming clearer in a consumer driven society that a key liveability factor of a city is its connection and relationship with neighbouring networks and regions. The growth of local farmer markets is a key activity where growers and consumers are able to interact directly, without the need for supermarket chain involvement.

Red Primary is a regional economic development in primary industries collaborative that partners with farming and associated businesses in proximity of growing cities. This is achieved through designing, funding, building and operating shared processing centres for fresh food to be packed and processed for added value and less waste. In doing so, this cooperative model seeks to lift skills, technology, capitalisation and market access to farmers to produce food more efficiently, more plentiful and more affordable through partnering with family scale businesses.

A number of projects are active and planned throughout Australia and overseas to harness the collaborative model and create sustainable businesses, jobs and food production in regional and near city areas that will benefit through enhanced connection with the markets and cities. One project involving Western Australian

business is seeking to work across northern Australia to significantly increase food production to support the expanding Indonesian markets.

Urban Development, Sustainable Cities and Regions

Lot Level Design
Eugenie Stockmann – Director, The Green Swing

Sustainable cities can begin at the household scale and provide examples of sustainable design and living. The Green Swing is a project in the Perth suburb of Victoria Park that managed to successfully design and build two townhouses and two apartments on an 840sqm block less than six kilometres from the Perth CBD.

The Green Swing development at 96 Rutland Ave Lathlain achieved an 8 to 10 star energy rating in the four dwellings constructed on the site

Due to various restrictions placed on the block based on convention house design (setbacks, oversight from windows, garage locations), the innovative four dwelling development was successfully built to achieve 8 to 10 star energy ratings and is fully occupied. In addition, the development has set a precedent for other similar developments in the local area and has resulted in changes to Council policy in the number of areas to reduce previous constraints imposed for convention housing development and building licence requirements.

Sustainable Urban Development Framework
Gavin Ashley – Manager Sustainable Urban Development, Moreland Energy Foundation

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 the delivery of truly sustainable development difficult to achieve.

The Moreland Energy Foundation has worked with developers and the local council to develop and test practical tools to embed sustainability into new developments of all scales from the initial concept phase through to occupancy.

The Sustainable Urban Development Framework (SUDF) links motherhood sustainability objectives with what that actually means for delivery on the ground. It has been successfully applied to projects as small as 18 dwellings to major urban growth precincts of 95 hectares. The SUDF support tool covers key areas of sustainability objectives such as zero carbon, zero waste, sustainable transport, products and materials and water use efficiency

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Examples of projects where the SUDF tools have been used include Westwyck Eco-village (using One Planet methodology), Armstrong Creek town centre (Geelong) and The Commons (Brunswick). Communication on the benefits and application of the SUDF tool is a key requirement and needs to cater for a variety of stakeholders including designers, developers, Councils, real estate agents, purchasers and tenants.

Stakeholder Engagement
Nadya Krienke-Becker – Managing Director, BrandCatalyst

Although many cities, Councils and organisations have commenced implementing sustainability initiatives, few are maximising engagement with their stakeholders on their initiatives.

Engaging communities and the development industry on the benefits of sustainable development is an ongoing activity to achieve behaviour change and desired sustainability outcomes. There are a number of different sustainability ratings used across Australia (green star, NABERS, energy and water efficiency ratings etc.) and it can be confusing for the general population to determine which are important and most relevant.

INFORM – CONSULT – INVOLVE – COLLABORATE - EMPOWER

Research on the most effective methods of community engagement in sustainability issues identify the need to establish a shared emotional connection linked to the needs of the person involved. There are some key elements that support this collaborative approach including:

- Connecting to the need of the person
- Building the web of connection with others
- Listen, inspire and motivate
- Create dialogue and communicate clearly
- Collaborate and create supportive partnerships

This approach covers some of the key success factors associated with effective engagement including active involvement, regular communication, making it fun and

being honest, transparent and consistent in your messages throughout the consultation process. Social media can play an important engagement role, particularly for the younger generations.

Future Proofing Cities

Fiona Plesman – Organisational Performance and Development Manager, Penrith City Council

Penrith City Council has a population of 186,000 residents, is predominantly rural (80%) and occupies 404 square kilometres on the west outskirts of the Sydney metropolitan area. Climate change presents a number of significant risks identified including extreme heatwaves, flooding, storms and bushfires.

A number of reports based on community consultation and organisation performance identified a number of key areas that will shape the future of their communities and provide a focus for activity such as health creation, access to facilities, affordable housing, sustainable buildings, attractive places, natural habitats, climate change and lifestyle.

A study commissioned by the Council on carbon footprint indicated that each person would need 5.36 hectares to sustain current lifestyles. This footprint, when applied globally, equates to a requirement of 3.1 Earths to sustain this level of lifestyle and was the catalyst for supporting ongoing action on sustainability initiatives.

Council is responding to this challenge by taking on a range of future proofing activities aimed at reducing their own footprint and that of their community, resulting in $4.1 million in reduced expenditure from energy and water saving initiatives and a waste diversion rate of 63% through the introduction of a three bin waste collection and processing system. The Council has won awards for its sustainability work including the Keep Australia Beautiful Sustainable Council Award 2012 and the LGMA NSW Excellence in Sustainability 2012 Award.

Sustainable Management of Growth

Adrian Just – President, Cleantech Industries Association

Located 100 kilometres (just over 1 hour) north of Brisbane CBD, the Sunshine Coast has a population of 280,000 residents, which is expected to almost double to 547,000 people by 2031.

The Sunshine Coast Regional Council is currently the fourth largest local government in Australia and is one of the most popular tourist destinations in Australia. Much of the urban and commercial development throughout the Sunshine Coast is restricted to the narrow coastal strip from Noosa in the north to Caloundra in the south.

Rated across a range of sustainability factors, the Sunshine Coast is well placed as a leader in its field, having recently won the coveted Banksia Environmental Award 2013.

The challenge for the Sunshine Coast lies in its ability to accommodate future population growth in a sustainable manner. Three major residential and commercial development proposals across the region are expected to house a large proportion of population growth into the future namely:

- Caloundra South – 50,000 residents
- Palm View – 18,000 residents
- Maroochydore City Centre – 10,000 residents

Each of these sites have significant environmental, social, economic and cultural values that need to be carefully considered in future development and concerns have been raised on the impact of these developments on the Sunshine Coast's environmental and sustainability credentials.

The geography and community have had a defining role in the past, but government and the business sector will need to play a more significant role in the future to control continuing development pressures. The vexed question being posed by decisions made today, and likely to be borne out over the next decade, is whether the Sunshine Coast will be loved to death?

<u>Sustainable Design Assessment</u>
Euan Williamson – ESD Advisor, City of Yarra
The City of Yarra in Melbourne has developed a Sustainable Development Assessment in the Planning Process (SDAPP) program which guides applicants towards more sustainable performance outcomes in an inner suburban built environment.

The SDAPP program is voluntary and has specific requirements applying to large developments (>10 dwellings or 1,000sqm), medium developments (1-9 dwellings, 100sqm to 1,000sqm) and small developments (renovation, other).

The City of Yarra is also part of the Council Alliance for a Sustainable Built Environment (CASBE) regional group established with neighbouring Councils to share knowledge and guide best practice ESD through initiatives such as the Built Environment Sustainability Scorecard (BESS).

The SDAPP and BESS tools are scalable and based on a proportional sustainability response for the type of development proposed. Independent research on the benefit-cost associated with investment in sustainability measures incorporated in participating developments across the City of Yarra indicates the following:

- 3.1 : 1 benefit-cost ratio for small residential developments
- 3.1 : 1 benefit-cost ratio for small commercial developments
- 4.9 : 1 benefit-cost ratio for medium multi-unit residential developments
- 6.8 : 1 benefit-cost ratio for large multi-unit residential developments

Although the investments in sustainability measures are largely met by the developers during the design and construction process, it is the landowners/occupants that receive the benefits.

The City of Yarra is currently in the process of transforming the voluntary SDAPP into a process embedded within their planning scheme. In addition, the City of Yarra has been an accredited Carbon Neutral Council for two years and has set its own sustainability goals resulting in 30% energy savings to date, with a target of 50% energy savings by 2020.

Active Transport and Accessibility

Active Transport
Dr Annie Matan – Lecturer, Curtin University Sustainability Policy Institute

Walking, 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.

There have been recent Heart Foundation publications that have identified the health benefits associated with active transport, including how urban form can contribute positively toward activity or negatively favouring inactivity. This is particularly relevant today given that 60% of Australian adults are either overweight or obese.

Urban planning and urban form characteristics, such as density levels and mixed uses, along with transport indicators (vehicle kilometres travelled and access to public transport) and the provision of pedestrian and cycling infrastructure are key elements in assessing active transport performance.

The Curtin University Sustainability Policy (CUSP) Institute has assessed the human health benefits associated with active transport for a typical urban development model and concluded that successful active transport requires a number of elements, particularly planning, infrastructure, evaluation and modification.

Through this research, it was demonstrated that there is a 6% improved productivity associated with active forms of transport across a range of measures.

Bus Rapid Transit
David Kingberg – CEO, David Lock and Associates

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, BRT is proving to be an effective way of achieving and keeping pace with the rapid growth in the Asian region.

Planning for and designing BRT systems into urban areas support Transit Orientated Development (TOD) goals and objectives, whilst providing a lower cost alternative to Light Rail Transit (LRT)

It is important for the rapid transit "vision" to be established early so that it is integrated into planning and design considerations. The successful integration of BRT into urban areas requires the collective knowledge and expertise of a multi-disciplinary team that is able to consider technical, planning, economic and social factors simultaneously.

There are numerous recent examples in Asia, United Kingdom, United States, Philippines, Indonesia and Australia where BRT is a defining characteristic of the urban form in locations such as:

- Guiyang and Ho Chi Minh City (China)
- Redding Station (UK)
- Cleveland (USA)
- Manila and Cebu (Philippines)
- Jakarta - Transjakata (Indonesia)
- Brisbane - SE Busway (Australia)

The BRT vehicles used in the newer overseas projects generally utlise state of art technology and design and look more like light rail trams than buses. The modern look and internal features in the BRT vehicles have been key success factors in the high level of public acceptability and high patronage levels following their introduction.

UK BRT (left) and Bangkok BRT vehicles in operation

Sharing Space
Matthew Harridge – Director, O'Brien Traffic

The key for sustainable transport requires the sharing of space on the road and within the road reserve. This approach is based on a premise that the roads need to be more about moving people rather than vehicles and therefore there is a requirement to share and reallocate road space to achieve the optimal people movement and sustainable outcomes.

The levels of dissatisfaction and stress expressed by commuters as a result of traffic congestion are becoming more and more evident. The Bureau of Infrastructure, Transport and Regional Economics (BITRE) and State Government transport agencies estimate that the total annual vehicle kilometres travelled in Australia will continue to grow along with travel times during peak hour commuting, whilst travel speeds decline leading to increased delays.

Under these circumstances, it is not surprising that public transport patronage and active transport modes (walking and cycling) have grown in most Australian cities, particularly Perth.

The combination of these factors has also resulted in increased competition for space on the road network, with associated congestion conflicts, delays and safety issues. It is becoming clear that there is an inability of authorities to build their way out of congestion problems by constructing more roads due to limited funding and space on the network.

In order to move more people outside of dedicated corridors (heavy rail and to a lesser extent light rail), it will be necessary to transition to forms of road transport that maximise passengers, whilst minimising road space.

Figures from Litman 2013 indicate that dedicated land bus transport is most effective in moving people volumes (15,000/hour), followed by bus in mixed traffic (5,000/hour), cycling (3,500/hour), pedestrians (2,000/hour) and cars (1,000/hour). In terms of road space requirements, public transport at 2 sqm per passenger was shown to be most efficient, followed by walking (3 sqm per person), cycling (5 sqm per person), arterial vehicle driving (30 sqm per person) and highway vehicle driving (200 sqm per person). Vehicle travel therefore requires ten to one hundred times as much road space than walking, cycling and public transport.

Convention road planning favours faster travel and therefore motorised modes over slower, non-motorised modes. Complete streets planning reverses this to favour sustainable transport modes as outlined below.

Conventional Planning	Complete Planning
1. Automobile traffic	1. Pedestrian
2. Freight/service vehicle	2. Cycling
3. Automobile parking	3. Bus
4. Bus	4. Freight/services vehicle
5. Bicycle	5. Automobile traffic
6. Pedestrian	6.Automobile parking

(Source: Litman, 2013)

Research on roads where car space has been reduced to accommodate other modes of road users and a greater proportion of active transport indicate the following facts in the face of common perceptions.

It will result in the removal of parking – parking spaces can be maintained using better parking design.

There will not be enough capacity for cars –modification works (4 lanes to 2 lanes, introduction of bike lanes, two-way left turn lanes) undertaken in a number of USA projects with annual daily traffic of 11,000 to 23,000 vehicles per day show similar or more volumes of vehicles after lane reductions and other works.

It will reduce trade for business – locations assessed showed increased sales following modifications with figures suggesting that pedestrians are responsible for 44% - 55% of sales, followed by vehicle users/passengers (22 - 32%), bus patrons (13% - 16%) and cyclists (8% - 10%).

It will be unsafe – 10% to 45% reduction of car, pedestrian and cycling crashes following modification works

The information gathered for this presentation suggests that consideration should be given to complete road planning where increased mode share and improved amenity is sought.

Climate Change Adaptation

Property Development
Alianne Rance - Associate, Net Balance

The increased risks resulting from climate change (increased flooding, extreme storm events, fire, rising sea levels) should be a key factor in how we plan our towns and cities. The extent to which climate change risks are assessed and mitigated varies significantly amongst the property development industry.

Facilitating the cross sectoral sharing of knowledge amongst key stakeholders involved in urban development projects is a key area where collaboration is likely to achieve better outcomes in terms of climate change response and adaptation.

Consulting firm Net Balance has been using a series of events or forums to better engage its clients and other stakeholders in a dialogue on climate change impacts and risks associated with property development. The stakeholders include the developers, local councils, banks, insurance companies and building companies. The sharing of knowledge has assisted in gaining stakeholder perspectives on how climate change risk is assessed and factored into their business processes.

Some of the key messages that have emerged from the event series include:

- Developers have a great opportunity to influence human settlements and built form – with this comes responsibility and obligation
- A strong business case has been established on the requirement to address climate change risks, with companies like Lend Lease, Mirvac and Stockland taking a leadership role in their field
- Learn from the leaders – do the risk assessment and factor the outcomes in planning and design of developments
- Plan to adapt to climate change – this makes good business sense
- Money can be saved in pro-active planning – response and litigation is costly!

- Be transparent on leadership in climate change – share stories and data
- Continue climate change conversations through networks and collaborate with others involved
- Price in the risk of climate change to your projects – there is a shift in the market and consumers are demanding certainty on climate change impacts on their investments
- Promote the requirements and benefits of a climate adapted community
- Use ESD tools that incorporate climate change impacts and assess/mitigate the risks of development

Using Social Networks
Kevin Luten – Director, Behaviour Design Works

Community engagement and active participation in energy and water use efficiency are key requirements for achieving sustainable living outcomes. Around 50% of energy use efficiencies are achieved through building design, appliances and construction materials, with the remaining 50% as a result of behaviour.

CSIRO research has shown that community literacy on energy efficiency is low. Sustainable living is influenced by three main areas of activity - policy, place and people.

- Policy– the science and economic benefits associated with more sustainable living is well established and requirements clear. We know what needs to be done.

- Place – the factors requiring consideration to achieve sustainable development (low impact development design, lot orientation, building design, utilisation, recycling and re-use of construction materials, appliances etc.) are well understood, with their application being mainly related to costs and benefits (perceived or real).

- People – this is the least understood and least serviced, even though it has been shown that behaviour is responsible for achieving half of the sustainable living outcomes.

Behaviours can either be simple or complex, with each requiring a different range of community engagement techniques.

Examples of simple behaviour are putting on a seat belt to save your life in a car crash or giving up smoking to reduce health risks. Graphic images of the consequences of inaction are common program activities seeking desired behaviour change. This approach aims to raise awareness and educate on the issue, motivate to change behaviour and the use of media or communication to show consequences or failed behaviour

To date, behaviour change programs for complex behaviour issues or problems have been based on techniques used for simple behaviour. This is proving ineffective and there is a requirement for better skills and more tools in resolving complex behaviour change problems.

A number of programs undertaken throughout Australia (including the City of Greater Geraldton's Active Smart program and the City of Fremantle's Living Smart program) have been successful in achieving behaviour change results through social

engagement activities. The Active Smart program demonstrated measurable benefits associated with increased physical exercise, better community connectedness and increased use of infrastructure equivalent to $25 saving in health costs for every $1 invested in the program.

The City of Fremantle's Living Smart program showed short and long term behaviour changes that resulted in savings on energy and water costs for the households that participated in the program.

Some of the common elements for a successful behaviour change program include:

- Pro-active recruitment – ensure that you are engaging with people that want to genuinely achieve an improved outcome from being involved in the program.

- Personalised coaching – ensure that you are able to offer one on one coaching with participants in order to take them through the process. Training others to undertake personal coaching is also recommended.

- Social and Local support – Connect participants with local people and specialist technical experts that can assist them in their endeavours and encourage the formation of social networks to share experiences, ideas and successes.

Climate Change Adaptation Standard AS 5334
Robert Cooper – Coordinator Design, Melbourne City Council

Australian Standard AS 5334 "Climate change adaptation for settlements and infrastructure" was released in 2013 following its development by a drafting committee represented by broad business, environmental and governance bodies involved in climate change adaptation including the Property Council of Australia, Housing, Industry of Australia, Australian Green Infrastructure Council and Commonwealth's Attorney General's Department.

Since its release, there has been limited application of the standard and there has been questions raised regarding its legitimacy and usefulness.

AS 5334 is a voluntary standard that has no legal standing at present, given that it has yet to be tested in a court of law. The standard is based on a risk management assessment methodology similar to AS 4360/ISO 31000, which is commonly utilised for risk assessments and decision making.

A number of reasons have been put forward regarding its limited utilisation by the urban development and infrastructure construction industry including:

- Lack of knowledge of its existence
- Poor understanding of its use and lack of acceptance on potential benefits
- Confusion over measures to apply to sector and element assessment tables in the standard

In addition, there seems to be a lack of policy context at the Federal and State Government levels that would provide the standard with greater legitimacy and therefore expand (or require) its utlilisation as part of the planning the development approval process.

It was recognised that many Local Governments have developed their own sustainability policies and assessment tools, which incorporate climate change risk and adaptation elements, and these appear to be used in lieu of the standard.

The standard has been applied to a number of major developments including the Port Bonython (South Australia), gold coast quarry (Queensland), Hawkesbury City (NSW) and City of Hobsons Bay (Victoria). It was not clear if there was clear evidence of improved climate change adaptation outcomes as a result of the application of the standard and further investigation is required to determine if this was the case.