

# NURSERY PAPERS

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## Working towards greener cities

### A report from the Urban GreenScapes Symposium 2009

Nursery & Garden Industry Australia (NGIA) hosted the inaugural Urban GreenScapes Symposium on 17 February 2009 to unveil the benefits of plants and green-life in the urban landscape and to encourage collaboration between all stakeholder groups to drive unity of message and develop awareness to create greener Australian cities. This Nursery Paper discusses the aims of the Symposium and the resulting outcomes.



## Working towards greener cities

Newspoll research initiated by NGIA in July 2008 indicated that 89% of Australians wanted more public green space in their local area. Despite this level of interest amongst the Australian public, the carbon sequestration and emission reduction capacity of urban green-life is not recognised within the Australian Carbon Pollution Reduction Scheme and associated climate change policy providing little incentive for all levels of government to grow urban canopy cover. Likewise, urban planning policy does not recognise the benefits of green space with commercial and residential land to building ratios allowing builders to reduce outdoor space.

In this ever-changing landscape where climate change has become a key challenge for NGIA, the realisation of green-life as an integral strategy for mitigating carbon emissions is urgently needed. Moreover, as industry faces the future of a carbon constrained economy, government will need to drive policy to support a green future for the Australian populous. In addition to the environmental benefits of increased urban green space, policy should also consider the multitude of health and social benefits that make trees, gardens and urban green space essential to quality of life.

Therefore, the objective of the Urban GreenScapes Symposium was to position green-life and plants as an integral part of the solution to climate change by presenting the research and the reasoning in the areas of environment, health/wellbeing and planning to support this.

The Symposium brought together leading national and international speakers, who together, provided a compelling insight into these three key areas. The event attracted some 233 participants, of which 50% were external stakeholders. The MC for the event was multi-award winning journalist and documentary maker Jenny Brockie.

**1) Environment** – What are the key environmental benefits from urban planting, who has quantified them and how do we place a value on these benefits?

**2) Health and Wellbeing** – What are the key health benefits that plants and greenscapes add to individuals and the wider community?

**3) Planning** – What are the planning barriers that are impacting on having increased canopy cover in our increasingly populated urban areas?



## Overview of the key findings:

### ENVIRONMENT

#### 'Urban Forest Impacts on Carbon, Water and Urban Heat Islands'

Presented by: Professor Greg McPherson, Center for Urban Forest Research, USDA Forest Service

This presentation provided an overview of research in the US that had quantified the benefits of urban green space. Key aspects of this presentation included:

- Economic modelling interprets research results into financial terms to stimulate community investment in trees.
- Economic modelling takes into account benefits such as energy savings, improved air quality, carbon sequestration, evaporative cooling, rain water run-off, reduced heat island effects and aesthetics costed against green-life management expenses such as planting, pruning and tree care.
- The New York economic model found that for every \$1 spent there was a \$5 return.
- There is a need for modelling based on the different climatic zones in Australia's major urban centres.
- US researchers are willing to collaborate with Australia to share resources to develop an Australian model.
- An Australian model could be made available to every council and municipal authority nationally to provide the tools to prioritise future investment in planting and green asset management.

#### 'Urban green infrastructure and greenhouse gases – Can plants have an impact?'

Presented by: Dr Stephen Livesley, University of Melbourne

This presentation highlighted the many environmental benefits of increased urban greening including:

- Indirect energy savings – shade tree plantings, green roofs and walls to promote shade, evaporative cooling and insulation to reduce air-conditioning use among other energy efficiencies.
- Reduction of heat island effect – increased green canopy and surface cover.
- Soil is a major sink for carbon particularly in mulched gardens.
- N<sub>2</sub>O (nitrous oxide) and CH<sub>4</sub> (methane) exchange varies according to lawn and the level of emission depends on continual management.
- Carbon trading opportunities for urban greening. For example Melbourne has and estimated 1 million and Brisbane, an estimated 1.9 million tonne of carbon stored in their respective urban environments.
- A need for detailed Australian research taking into account climatic zones and tree species to quantify carbon benefits and carbon costs.



Professor Greg McPherson, Center for Urban Forest Research, USDA Forest Service



Professor Allyson Holbrook, University of Newcastle



Stephen Livesley, University of Melbourne



Associate Professor Mardie Townsend, Deakin University

### HEALTH

#### 'Health and Wellbeing: NGIA Research Review and Gap Analysis'

Presented by: Professor Allyson Holbrook, University of Newcastle

This presentation detailed the scope of green-life research since 2000. The study found that:

- There was no specific journal that focussed on green-life based research.
- The majority of research was international with 15% of studies originating from Australia.
- Surveys as opposed to controlled scientific trials were the main format of these studies.
- Approximately 50% of the research was published in above average journals.
- Gardens were the predominant category of green space research.
- Research clearly depicted the relevance of green space in the engagement of physical and social activity, however there was no 'hard data' on physical health impacts.
- Other gaps in the scientific literature were identified including cognitive function in relation to green space and the benefits of green space in relation to community gardening, school gardens and youth.

#### 'Growing Healthier Humans or How Plants Affect Peoples Health'

Presented by: Associate Professor Mardie Townsend, Deakin University

Studies show that increased access to green space has the following health and social benefits:

- Gardening provides opportunities for beneficial physical activity whilst access to green space correlates with increased physical activity.
- Greener cities foster happier, healthier and more vibrant Australians. They build communities and studies have shown that they contribute to lower crime rates and aid in the general well-being of citizens.
- People who had access to parks and gardens within 400 m of their home were more likely to pursue physical activity; likewise in areas where there were less parks and gardens, most notably in lower socio-economic neighbourhoods, residents exhibited higher sedentary rates.
- According to the National Health Survey 2004-05, physical inactivity contributes to over 8,600 deaths in Australia each year from CHD, diabetes, colon cancer and other conditions – a figure more likely to increase with obesity on the increase.
- Direct health costs as a result of poor physical activity \$377 million (1996).
- More research is needed to provide updated health economic modelling in support of this premise.

## PLANNING

### 'The Strange Death of the Australian Backyard' Presented by: Professor Tony Hall, Griffith University

Using case studies from across Australia and the UK, this presentation highlighted:

- Urban planning policy is supporting new residential housing developments with no backyards – a uniquely Australian phenomenon.
- House frontages dominated by large double garages and few windows minimise access to natural light and encourage limited interaction with community and the outside world.
- These aforementioned planning measures increased energy use and limited community involvement and physical activity, increasing the danger of creating future slums.
- Residents in such environments access their air-conditioned cars from within the house, open and close the garage door via remote control, drive to work where they spend all day in an air-conditioned office, drive home and into the garage, and spend the evening in their home theatre more than likely eating their dinner while watching their flat screen television. The result is an entire day, even week, without accessing green space and fresh air.
- Besides the phenomenal energy consumption, the health ramifications of supporting such suburban development are diabolical.

This presentation was based on the research paper 'Where have all the gardens gone? An investigation into the disappearance of backyards in newer Australian suburbs'.

### 'Planning: Local Government Issues and Green Space Development' Presented by: Phil Hewett, Newcastle City Council

This thought-provoking presentation highlighted the reality of urban planning favouring high density housing over increased green space in Newcastle City. Key messages arising from this presentation included:

- The need for a unified approach with all stakeholders working from the same policy and planning codes.
- A move towards collaboration of expertise rather than completion; that is green-life and tree managers working alongside of developers and engineers.



Professor Tony Hall,  
Griffith University



Adam Schwerner,  
Chicago Park District



Phil Hewett, Newcastle  
City Council



Jenny Brockie, MC for  
the Urban GreenScapes  
Symposium 2009.

### 'Chicago Greening Actions and Initiatives: Key Successes and Benefits Flowing From Increased Urban GreenScapes' Presented by: Adam Schwerner, Chicago Park District

This presentation outlined the successful implementation of urban greening in the city of Chicago. This concept was spearheaded by Chicago Mayor, Mayor Daley. As a result of this vision, the city has seen:

- An increase in city employment and skills development opportunities.
- Increased community engagement and sense of pride in city and suburbs.
- Improved business opportunities.
- Beautification promotes increased tourism opportunities (competitive advantage).
- Enhanced preservation and respect for the environment by city residents.
- Increasing benefits available to developers who adopt sustainable and environmentally friendly components to development and re-development projects on both commercial and residential basis.

## PANEL DISCUSSION: Working towards a solution

A panel discussion concluded the symposium where key messages were brought together to identify what actions are necessary for Australia to move forward and embrace green space in the urban environment.

Key messages raised in this panel discussion included:

- Economic modelling was needed to ascertain the direct and indirect benefits of canopy cover in urban areas across Australia.
- Urban planners, management and engineers need to be educated in the benefits of urban greening by their horticultural colleagues and industry to ensure green-life is an integral part of urban GreenScapes and future developments.
- Ensure that the social, health and wellbeing message is communicated to the Australian public to highlight that green-life has greater value than purely amenity.
- Necessary for all green-life stakeholders to work together to educate government about how urban greening can be part of the solution to global warming.



## Why is this important to the nursery and garden industry?

Hosting the inaugural Urban Greenscapes Symposium has given the nursery and garden industry the platform to increase awareness of some of the key issues which will impact on our future.

Although many of the key issues on the benefits of green space are well documented, the Symposium facilitated the opportunity to present a broad spectrum of research in one program focusing on the impact of increased urban greening with regard to environment, health & wellbeing and planning.

The objective of the exercise was to bring as many stakeholders as possible together in one place to agree on the path forward to promote and implement increased urban greening as part of policy and development. This was the first time for most of the presenters and some of the delegates where all the silos were exposed to each other to view the big picture and the issues.

The findings out of the Symposium give the industry and stakeholders a broad perspective on how the issues and opportunities can impact on our future. For

example, if we don't do something about the growing trends of limited backyards in new housing developments and reduced urban community green space what will happen to our industry? In other words, if there is no place to plant trees and gardens who will buy our plants?

We need to showcase the importance of urban canopy cover, community green space, gardens and street plantings in relation to health, social wellbeing and the environment. The best way to do this is to present economic modelling that supports urban green space as a managed asset that contributes to the social and environmental health of our cities and citizens. For example; according to Professor Greg McPherson, for every dollar spent on urban green space in New York they received five dollars worth of benefits in relation to energy efficiency, carbon sequestration, improved air quality, evaporative cooling and reduced heat island effect.

With regard to health, Associate Professor Mardie Townsend presented a correlation between local access to parks and gardens with increased physical exercise. Given that

physical inactivity contributes to over 8,600 deaths in Australia each year (Australian National Health Survey 2004-05) and direct health costs relating to poor physical activity are estimated around \$377 million (1996), it makes perfect economic sense to create more urban green space.

Changes are needed to commercial and domestic urban planning laws. In order for this to happen we need to speak in an economic language that makes sense to policy makers and developers.

We need recent, relevant and local research that will enable us to explain the crucial role that trees, gardens and greenscapes play in the urban landscape. Unfortunately we did not get the planners or landscapers along in droves, not for the want of trying, but we now have the messages, and will be developing the tools, strategies and insight to show that the nursery industry is serious about getting more green space (plants) in the urban environment throughout Australia.



## Next steps

The next steps will involve speaking with government, policy developers and stakeholders to build momentum and increase support for the positioning of green-life and plants as part of the solution for a socially and environmentally healthier Australia. In short, we want to sell more plants to ensure a sustainable and profitable future.

## More Information

For more information please visit <http://www.ngiaevents.com.au/sympo2009/> to download podcast feeds for each presentation or contact NGIA, phone (02) 9876 5200 or email [info@ngia.com.au](mailto:info@ngia.com.au)