

URBAN GREENERY: GOOD FOR BUSINESS & LIVEABILITY



Parliament Gardens, Melbourne (B. Ong)

Urban greenery is more than just trees and parks in the city. Greenery plays a strategic role in making the city more sustainable.

Plants provide essential biodiversity, ecosystem services, carbon sequestration and helps to reduce the Urban Heat Island effect. They cool the air, provide oxygen, remove harmful gases and dust, and keep the air moist.

Plants are also essential for our health and well-being – increasing productivity in schools and offices, hastening recovery from illnesses, reducing stress, and increasing and alertness.

Benefits

Urban greenery is often perceived as a public good. However, research has found that there are many benefits in incorporating plants within the private sector as well. Greenery brings economic returns as a direct result of the social and environmental benefits it provides.



University of Melbourne, Bldg1888 courtyard (B. Ong)

Greenery and consumer behaviour

The environmental and social benefits of plants, like improvements in air quality as well as benefits like higher productivity and higher sense of well-being, also lead to documented economic benefits.

Greenery contributes to the attractiveness and value of the location. Our sense of place is closely linked to the availability of greenery¹. That is why one of the most common ways to personalise a space is to install a potted plant, a vase of flowers or even pictures of greenery. The sense of well-being that greenery provides leads to improvements in productivity and creativity while reducing absenteeism. One study shows a 12-15% increase in productivity with no increase in errors in laboratory conditions⁵. A study in Norway reported a 25% overall reduction in reported illness symptoms⁸.



Origin Energy, Melbourne, lunch room and green roof (D. Hes)

These benefits are also found in outdoor locations with plants. Our attachment to a home is often linked to the presence or absence of a garden. Plants help to provide pleasant environments to live, work and play. Designing for greenery requires us to open up our buildings to the outside so that business and community activities can happen outdoors. Such intermediate spaces increase public scrutiny of urban spaces and increase the safety and vitality of the neighbourhood. These intermediate spaces cost less to build and maintain than indoor enclosed spaces but provide greater public value. The increases in safety and vitality lead to increases in the value of businesses and properties in these locations.

A study in the US showed that places with greenery are often regarded as destination places – places to be visited and enjoyed¹⁰. As a result, shoppers are prepared to *travel further*, *pay more for the goods* as well as *parking*, and *stay longer* in

these locations than in those without greenery. For similar reasons, properties in locations with greenery or are close to nature (e.g. parks, particularly those with water bodies) are shown to fetch higher prices and rentals of between 7 to 13%³. The health promoting effects of plants have been documented in hospitals, offices, homes and even prisons and affects both children and adults^{9,10}. Stress is a major cause of urban maladies like obesity, which leads to chronic diseases like diabetes and traumatic diseases like cancer and heart disease. Landscaped streets and parks encourage mild and stress-reducing exercises like walking in the city. Outdoor eating places with greenery which are easily accessible can encourage office workers to go out rather than stay in. Outdoor spaces within offices can make eating in the office a more enjoyable and relaxing break.

Resource:

Kathleen Wolf
Green Cities, Good Health
<http://depts.washington.edu/hhwb>
 Accessed 8 October 2013

Through both qualitative techniques (e.g. focused interviews and content analysis) and quantitative methods (e.g. public surveys using photoquestionnaires), Kathleen Wolf has compiled an impressive set of research data on the value of urban greenery. Collating her work with others in the field, she has two websites that provide authoritative and useful data on benefits of urban greenery:
<http://www.naturewithin.info/>
<http://www.greenhealth.washington.edu>

She describes her research as exploring the human dimensions of open space, urban forestry and natural systems including:

1. Public preferences and perceptions regarding urban public landscapes
2. Costs, benefits and perceptions of urban forestry in retail and commercial districts
3. Integration of urban nature and transportation systems
4. Developmental benefits associated with youth participation in urban greening work
5. Effective integration of science and policy through technology transfer.



Table 1: Benefits of Plants

Building Type	Benefits
All buildings	Improves indoor air quality Reduces stress and improves sense of well-being Increases aesthetic value and sense of place Improves attention and productivity Increases rental and property prices
Shopping Centres & Retail	Destination value – consumers willing to stay longer, pay more for carparking and products ^{3,10} 11% higher pricing by consumers ⁵
Offices	25% decrease in overall absenteeism (reduced headaches, coughing, fatigue, hoarseness and dry throats, dry facial skin) ⁵ 12-15% increase in productivity ³ 10% self-reported increase in attentiveness ³
Schools	Improves concentration, mood and reflection on personal goals ⁷ Fewer psychological and behavioural problems ⁹
Residential	7% (greenery) to 13% (water bodies) increase in property prices and rentals for properties with such views ³
Community	80% higher amenity and comfort rating for tree-lined sidewalk 30% higher quality of products ratings for districts with trees 15% higher customer service Pocket parks – most highly priced category for urban greenery 35% higher place character for places with large trees 10% more positive judgements of products and merchants
City	9% increased amenity value for trees in small cities and 12% for large cities ²

Implementation

The presence of greenery and landscaped spaces is important to the financial success of businesses. Research has found that people like trees with dense foliage and prefer streets with well-tended tall trees over streets that are tidy and flanked by nice buildings but are not planted. The most highly prized streetscapes are those with many trees, even if they obscure other views like historic buildings. These streets are ranked as highly as wild and outdoor recreation environments.



1 Blith Street, Sydney, green wall (D. Hes)



Case Study

Edward Suzuki Associates
Vent Vert Apartments, Tokyo
<http://www.architizer.com/blog/feature-project-apartment-building-cloaked-in-greenery-by-edward-suzuki/>

The Vent Vert apartments in Tokyo brings lush greenery to the streets of one of the world's most densely built cities. Located in a residential district of highrise apartments, the dense foliage both provides a sense of enclosure and retreat for its tenants while presenting a soft green frontage to the public. The green facade is a curved latticework that results in a patchwork pattern, capturing the randomness of nature within a rectilinear grid. The plants both block and allow the street to be seen, heard and felt. The street level is a commercial space that is without its own greenery but nestles in the shade of the green facade canopy. It is an excellent example of urban greenery in a private project that benefits the public urban space.

Partnerships

Urban greenery offers a great opportunity for partnerships between the public and the private domain. This is particularly true for semi-outdoor spaces like cafes and stalls. Even small outdoor spaces where people can sit and relax will increase shopping, eating and other business opportunities. Commercial outdoor urban spaces with greenery create a vibrant ambience that contributes to the sense of liveability. It also visibly demonstrates good corporate responsibility for the private sector and good public relations.

Integration with building services

If urban greenery were to help retain stormwater, collect rainwater, reduce energy consumption and relieve the load on utilities, it needs to be integrated into the design of building services. Many cities have best practice guidelines on urban greenery and water sensitive urban design (WSUD). The commercial value of the plants themselves in urban greenery is largely untapped. It is possible that, in the future, urban greenery may incorporate agriculture, horticulture and biofuel production.

Landscaping

Our appreciation of greenery comes not just from the plants themselves but also from its integration into landscape design. Including water in the landscape increases its aesthetic (and hence economic) value while providing water to the plants. Research has shown that trees are particularly valued. A large tree helps to provide character and a focal point to the location. It provides shade and invites people to stop and stay. Most trees will let enough light through their canopies to allow other plants to grow beneath.

Maintenance

In the natural environment, plants thrive without any intervention from humans. While animals do play an important role in the life cycle of plants, their roles are primarily as consumers and agents assisting reproduction (usually in the transportation of seeds and pollen). Plants have adapted to most climatic environments and certainly to those environments where most cities are located. Left unattended, most buildings will be quickly occupied by wild plants. Depending on expectations, greenery can be designed for little or no maintenance. On the other hand, a well designed and maintained landscape returns much more revenue and satisfaction than it costs.

Use unused spaces

Many urban greenery strategies are ideal for currently unutilised locations – roofs, bare walls, alleyways, rail corridors, road sides and reserves. When used as feature walls, they may help reduce the cost of facade treatment. The use of such spaces for commercial urban greenery can also lead to unexpected economic returns. One of the nicest examples of this is Chuckle Park, a restaurant located in an alley along Little Collins Street. Here, urban greenery is provided through plants in bottles and baskets

Design for low maintenance

Not all landscapes need high maintenance. Incorporating the right plants, using the right soils, adopting the right strategies of mulching and composting, and understanding the microclimate of the site can all help to reduce maintenance. Adopting best practices is important in ensuring that the greenery is also energy saving and beneficial to the environment.

On the other hand, spending time with plants has often been reported to be restorative and uplifting to people. Plants are living things which reward the time spent in looking after them. They change with the seasons and provide a different experience with every visit.

Understand the site

Every site is different when it comes to plants. Being close to a wall or just a few meters away from it can mean significantly different growing conditions for the plant. In the urban environment, the microclimate on balconies and rooftops are very different from that on the ground and require different strategies. The process of growing plants engages us with the environment and instils in us a sense of connection with nature.



Chuckle Park, Little Collins Street, Melbourne (B. Ong)

Seek Expert Advice

Urban greenery is an emerging field that poses new challenges to existing capabilities. It is artificial in that it is designed and integrated with urban structures like streets and buildings. It also needs to be environmentally and ecologically sound. Incorporating urban greenery with a view to economic returns to businesses requires engaging the consultants in the project in a discussion on how to maximise the value of greenery. Both the City of Melbourne and the University of Melbourne provide useful and important resources.

Resources

Urban greenery is very well researched and there are a lot of resources that can be found in the public domain. The City of Melbourne website is a good resource for policy, strategies and guidelines that are relevant to the city. Resources from other cities that reflect conditions found in Australia are also useful. The University of Melbourne have resources online as well as experts that can provide pertinent advice

Websites

Green Cities: Good Health

<http://depts.washington.edu/hhw>

i-Tree

<http://www.itreetools.org>

AILA Green Infrastructure

<http://www.greeninfrastructure.org.au/>

Landscape and Human Health Laboratory

<http://lhhl.illinois.edu/adhd.htm>

City of Melbourne:

Urban Forest

<http://melbourneurbanforest.com.au/>

WSUD

<http://www.melbourne.vic.gov.au/Sustainability/SavingWater/Pages/Watersensitivedesign.aspx>

Green Walls, Roofs and Facades

<http://www.melbourne.vic.gov.au/Sustainability/CouncilActions/Pages/GreenRoofsWallsandFacades.aspx>

Green Your Laneway

<http://growingup.org.au>

Stormwater Harvesting

<http://www.melbourne.vic.gov.au/ParksandActivities/Parks/Pages/StormwaterHarvesting.aspx>

Growing Green Guide (Draft)

<http://www.melbourne.vic.gov.au/Sustainability/CouncilActions/Pages/GrowingGreenGuide.aspx>

Exceptional Tree Register

<http://www.melbourne.vic.gov.au/Sustainability/UrbanForest/ExceptionalTrees/Pages/ExceptionalTreeRegister.aspx>

University of Melbourne

Green Infrastructure Research Group

<http://www.land-environment.unimelb.edu.au/research/research-groups/green-infrastructure-research-group/>

Sustainable Cities

<http://www.land-environment.unimelb.edu.au/research/research-domains/sustainable-cities.html>

Demonstrating Sustainability

<http://sustainablecampus.unimelb.edu.au/pdf/Demonstrating-Sustainability-at-Burnley-Campus-Brochure-July11.pdf>

ARCUE

<http://arcue.botany.unimelb.edu.au/>

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- ¹⁰ Wolf, K. L. (2004). *Public value of nature: economics of urban trees, parks and open space*. Paper presented at the Design with Spirit: Proceedings of the 35th Annual Conference of the Environmental Design Research Association. D. Miller and JA Wise, Environmental Design Research Association.
- ¹¹ Wong, N.-H., & Chen, Y. (2010). The role of urban greenery in high-density cities. *Designing high-density cities for social and environmental sustainability*, Earthscan, London, 227-262

