

City of Melbourne, Australia

Building an Eco City, building a Sustainable City



The transformation of a city, the changing of its aesthetic environment, the improvement of its infrastructure and basic functions can be a long process. A long term vision supported by comprehensive plans and sustainable policies can gradually ensure that significant steps can be built over time to achieve significant change. The City of Melbourne is promoting the idea of an Eco-City in its development trajectory and it has begun its transformation through the Future Melbourne Strategy in 2007 which aims to establish Melbourne as a viable sustainable city.

151

ICLEI Case Studies

April 2012

Abstract

Melbourne's Eco-City vision is part of an overall vision of reinvention as outlined in the Future Melbourne Strategic Plan, the primary aim of which is to establish Melbourne as one of the top ten most liveable and sustainable cities in the world by 2020. The Eco-City vision incorporates five themes:

- To become a zero net greenhouse gas emissions city;
- To be proactively adapting to climate change impacts;
- To be a resource efficient city;
- To increase urban density;
- To treat the city as a water catchment area.

In the 1980's the City of Melbourne experienced rapid urban decline and inner city decay. At the same time, similar to all local governments, the city has the challenging role of assessing and addressing the impacts of climate change. Melbourne's the City of Melbourne has reversed the trend of urban decline and made the City one of the world's most liveable cities. Now the City is building on such success to become one of the most sustainable cities in the world by 2020 as its answer to the challenges of assessing and addressing the impacts of climate change. The Eco-City program is a cornerstone to this transformation and provides the long term vision, supported by comprehensive plans and sustainable policies to ensure that significant steps can be built over time to achieve this goal.

Importance of the Eco-City

While Melbourne is enjoying a sustained period of strong economic growth and development, there are significant challenges for today and the future. These include the effects of climate change on natural resources & ecosystems; the need for adaptation strategies; an increase in oil prices which effects the cost of food, transport and living; significant population growth is placing greater demand on existing public infrastructure including transport and other services; the need to maintain social cohesion including social connectedness, family and community well-being; and the distribution of economic equalities. An Eco-City enshrines the principles of sustainable urban development. Local governments need to raise awareness of the adverse effects of climate change and where required incorporate climate mitigation and adaptation strategies in everyday municipal planning and management. In doing so, they need to ensure that urban development does not occur at the expense of environmental protection.



Population / Land area

~ 97,000 (2010)
37.6 km²

Municipal budget

AUS\$ 341 million
US\$ 344 million

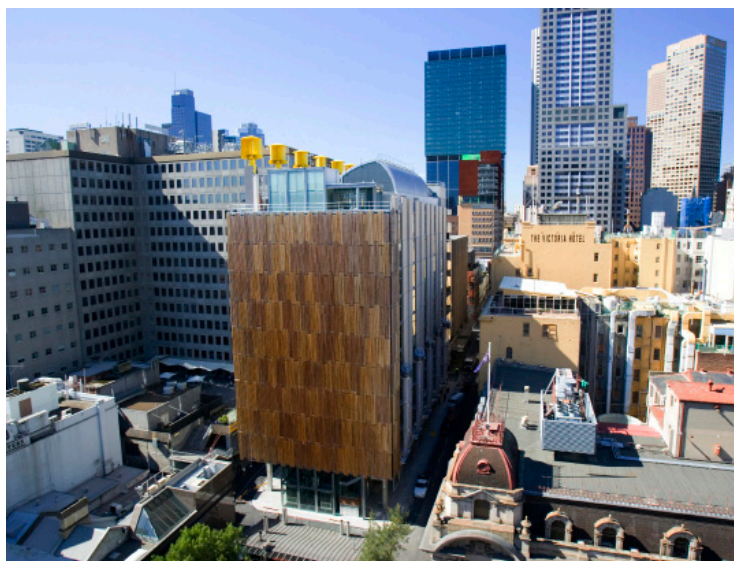
The City of Melbourne joined ICLEI in 1998.



This case study is part of a series of local sustainability case studies compiled as part of ICLEI's preparation for Rio+20.

Case Study

Photo: © City of Melbourne "Zero net emissions by 2020 - Update 2008"



Council House Two, Melbourne -
Recipient of a 6 Star energy rating.

City context

Melbourne is the capital city of the State of Victoria and Australia's second largest city. The City of Melbourne municipality is the economic and administrative hub of the much larger Melbourne metropolitan region which has a population of 4 million. City workers and visitors increase the municipality's population to around 770,000 during week days and on the weekends and evenings more than 300,000 people may visit the city.

In the 1980's the city center of Melbourne was empty and lifeless, and the city was experiencing urban decay and (economic/industrial/social) decline. To alter this decline, the city set about converting its ailing central business district into a multi-functional activity center and within the next twenty years the city transformed itself into one of the world's most liveable cities.

With success came the next challenge of how to manage this growth and corresponding pressure on limited resources. Such 'liveability' produced an unprecedented growth in both population and in the number of high-rise developments. With these challenges in mind the City of Melbourne's Council built on its past success and embarked on its next journey, to become one of the world's most sustainable cities by 2020.

Small steps leading the way to transformation

Melbourne, as a global city has established high standards for itself particularly in terms of sustainable urban development. The City of Melbourne has also taken on the principles of Local Agenda 21 and was a major sponsor of the UNEP congress in Melbourne, which formulated the 10 Melbourne Principles for Sustainable Cities, in April 2002. The principles were enthusiastically embraced by the city and are now a cornerstone of its leadership role and commitment to the continued development of Melbourne as a sustainable and healthy urban environment.

In 2007, the City of Melbourne initiated the process to develop the Future Melbourne Plan. The Future Melbourne Plan, of which the Eco-City Program is part of, was developed after an extensive stakeholder and public consultation process. A 'Community Reference Group' was invited by the City of Melbourne to champion and guide the development of Future Melbourne Plan and various project partners were invited to participate. The community vision was articulated in the completed Future Melbourne Plan and outlines the management, development and direction of the City of Melbourne to 2020 and beyond. The plan builds on, and replaces the City of Melbourne's previous strategic plan - "City Plan 2010". The Future Melbourne Plan is subdivided into six goals, in order to make Melbourne:

1. A City for People
2. A Prosperous City
3. An Eco-City
4. A knowledge City
5. A Creative City
6. A Connected City

As this case study concentrates on the Eco-City aspect of the Future Melbourne Plan, it is necessary to highlight the key components in making Melbourne an Eco-City. The key programs dedicated to reducing the city's emissions include:

- **The 1200 Buildings Program** focused on the existing commercial building stock and is key to achieving Melbourne's carbon neutrality target by 2020 (See text box next page).
- **City Switch** which focuses on energy use and efficiency by office building tenants.
- **HiRES** focuses on solutions to improve the energy performance of apartment buildings.
- **The Energy Map** which was developed with CSIRO (Commonwealth Scientific and Industrial Research Organization) is used to inform distributed energy generation patterns in Melbourne.
- **Integrated Transport Plan**, was essential in providing a sustainable transport network for the city, which moves people away from dependency on the car.
- **Energy Savers** provides services and 'bulk buy' products by delivering to residents across the greater Melbourne area.
- **Eco Carlton** providing support and resources for community led initiatives in order to turn neighborhoods into 'green' precincts by reducing their overall ecological footprint.
- **Amendments to the Planning Scheme** to introduce standards for energy waste and water.
- **Internal Enterprise Bargain Agreement** including staff commitments to achieve waste and energy targets, in terms of disposal and consumption.
- **Integrated water solutions** which is a study focused on implementing initiatives from the Southbank Structure Plan and the overall water strategy plan (See results section for more information on this initiative).
- **Food policy** exploring sustainable options for city residents.
- **Innovative sustainable design** of community infrastructure including passive design and use of solar thermals in one of Melbourne's recreation centres.
- **Climate adaptation efforts.** Programs and initiatives to support Climate adaptation efforts include 'Heat Island' mapping and 'Cool Roof trials' which assess the reduction in heat (and less demand for electricity) via the construction of white and green roofs on Melbourne's buildings
- **The Urban Forest Strategy** is part of a five year landscape improvement plan for the area. (See results for more information of this initiative).

These policies, strategies and initiatives are delivered in partnership with stakeholders within the city which was essential in the development of the program.

Establishment of strategic partnerships. Whilst the City of Melbourne is the instigator and main driver for the Eco City program, it has formed a number of strategic partnerships which have provided additional expertise or assistance in areas where the council was lacking the necessary regulatory, institutional or knowledge requirements. Key partnerships have been formed with various institutions and organizations to achieve Melbourne's Eco-City vision. The most important of which included:

'The Ten Principles for Sustainable Cities':

The ten Principles for Sustainable Cities were developed at an International Charrette held in Melbourne (Australia) between the 3rd and 5th of April 2002, organised by the UNEP, the International Environmental Technology Centre and the Environment Protection Authority Victoria.

Principle 1

Provide a long-term vision for cities based on: sustainability; intergenerational social, economic and political equity; and their individuality.

Principle 2

Achieve long-term economic and social security.

Principle 3

Recognize the intrinsic value of biodiversity and natural ecosystems, and protect and restore them.

Principle 4

Enable communities to minimize their ecological footprint.

Principle 5

Build on the characteristics of ecosystems in the development and nurturing of healthy and sustainable cities.

Principle 6

Recognize and build on the distinctive characteristics of cities, including their human and cultural values, history and natural systems.

Principle 7

Empower people and foster participation.

Principle 8

Expand and enable cooperative networks to work towards a common, sustainable future.

Principle 9

Promote sustainable production and consumption, through appropriate use of environmentally sound technologies and effective demand management.

Principle 10

Enable continual improvement, based on accountability, transparency and good governance.

'What is the Green Star rating system?

The Green Star rating system is a comprehensive, national, voluntary environmental rating system that evaluates the environmental design and construction of buildings.

There are 9 categories within all Green Star ratings covering: management; indoor environment quality; energy; transport; water; materials; land use & ecology; emissions and innovation. The Green Building Council of Australia administers the system.

- The Victorian State Government;
- The Green Building Council of Australia;
- Financial institutions,
- Private and not for profit sector
- International networks.

State Government. The City of Melbourne sought the assistance of the Victorian State Government, to amend, through the parliamentary process the City of Melbourne Act to allow for the integration of the key Environmental Upgrade Agreement legislation to be integrated within the general planning and environmental law framework. This formed the statutory framework required for the Eco-City vision.

The Green Building Council of Australia worked with the City of Melbourne to refine the council's rating scheme (including Green Star Rating system, see text box) for the assessment of commercial buildings environmental performance. This ensures industry standards, compliance and energy efficiency is developed and maintained.

National Australia Bank provided the City of Melbourne with its expertise in research, leading to the development of an environmental upgrade finance mechanism which now underpins the 1200 Buildings program and provides the economic backing necessary in a free market economy.

Low Carbon Australia Ltd is working in collaboration with the City of Melbourne, to develop a cost benefit analysis toolkit to assess energy efficiency improvements in commercial buildings. Low Carbon Australia will also co-invest with National Australia Bank to help facilitate its work on the 1200 Buildings Program.

ICLEI - Local Governments for Sustainability has a strong partnership with the City of Melbourne. The city continues to host the ICLEI Oceania office. This demonstrates its commitment to sharing its knowledge and expertise and involvement in long term sustainability issues at the global, regional and local level.

Clinton Climate Initiative has developed a strong partnership with the City of Melbourne as a result of the local government's involvement in the Energy Efficiency Building Retrofit Program. This develops an international profile for Melbourne and helps establish credibility and garner public support for the Eco-City vision.

Results

Legislative and statutory planning changes. A major achievement of the Eco-City initiative is the important changes made to the statutory and policy planning and development framework of the city. This was essential to ensure that the Eco-City vision gained traction. An important mechanism now established is the Environmental Upgrade Agreement.

Environmental Upgrade Agreement is a financial mechanism that was established with banks to build incentive for environmental retrofits in buildings. This would overcome the difficulty that many building owners have in accessing capital to finance their environmental projects.

For the Environmental Upgrade Agreement to be implemented, however, there needed to be legislative changes made to the City of Melbourne Act. In May 2009, the Lord Mayor wrote to the Minister for Local Government, Victorian State Government and sought an amendment to the City of Melbourne Act 2001 which was passed by Parliament on 2 September 2010 and signed into law on 14 September 2010. This has directly led to Australia's first legislation to support large scale environmental retrofits of city buildings. It allowed council, in partnership with Australian financial institutions, to lend money to commercial building owners for environmental retrofitting works. The council recovers these funds through a special statutory charge on the property, called an Environmental Upgrade Charge.

Sustainable Melbourne Fund, which had its beginnings in 2002, is an innovative fund set up by the City of Melbourne to identify new financing opportunities in local sustainability projects particularly in terms of water, waste and energy as well research and development in environmental technology. The Eco-City vision has given it stronger prominence and it is now an essential stakeholder in developing and disseminating the 1200 buildings program, an essential improvement in developing an Eco-City.

Further key highlights of the Eco-City Program include:

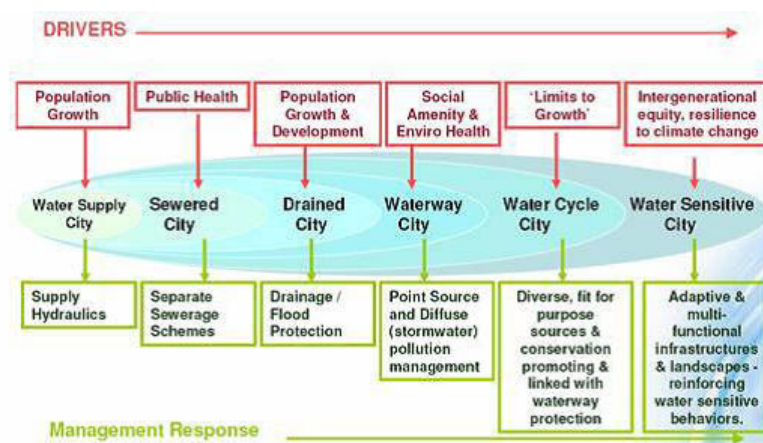
Total Watermark - City as a Catchment Strategy. The City of Melbourne has been implementing a sustainable water management program since 2002. This included a range of initiatives around water saving and stormwater treatment, wastewater and groundwater management. This work has been guided by council's water strategy - 'Total Watermark' established in April 2004. In 2008, the strategy was updated to include the 'City as a Catchment' approach and now incorporates new sustainable water management targets. This strategy is now fully integrated within the Eco-City Plan. The municipality has responded and is on track to achieve the water targets set for 2020:

- Workers reduced their water use by 48 per cent from 2000–08.
- Residents now used almost 40 per cent less.
- The City of Melbourne used 28 per cent less water
- 4 per cent less pollution entered the waterways.

1200 Buildings Program: The 1200 Buildings Program (a 10 year plan launched in March 2010) is part of the City of Melbourne's Zero Net Emissions by 2020 Strategy, which sets the City of Melbourne's target to achieve carbon neutrality by 2020. The program is the catalyst for the environmental retrofitting of 1200 existing commercial buildings, or over two thirds of the municipality's non-residential building stock.

The retrofits will improve energy efficiency and water use in buildings, reduce bills and improve their value. The 1200 Buildings Program aims to support building owners to realise energy and water savings with potential carbon savings of 383,000 tonnes of greenhouse gas per year.

The program achieves this through the provision of tailored support to building owners, which assists owners to understand their performance, assess options



Urban water management transition framework: water supply city to water sensitive city.

for improvements, and provide innovative financial mechanisms to finance their initiatives.

Urban Forest Strategy: Many of Melbourne's grand boulevard trees and park trees at the Shrine of Remembrance reserve were planted more than 80–100 years ago, when the city's climate was cooler and wetter. Some of these trees have struggled to survive in today's drought conditions resulting in the removal of 106 dead or dying trees. As part of a five year landscape improvement plan for the area, 375 drought-tolerant trees will be planted to replace the lost trees. These new hardy species will prosper in our reserve and ensure a healthier, more sustainable tree population for the long term. Over 3400 trees were planted across the municipality. 1500 of these trees were replacements for drought affected trees and 1900 were additional trees for the municipality.

Eco-city forums: In its commitment to create a bold, inspirational and sustainable city, the City of Melbourne has created the idea of Eco-City forums, both electronically and in person. The forums provide the community with an opportunity to learn about Council's sustainability programs and find out what they can do at home to reduce their ecological footprint.

Reducing the city's ecological footprint: The City of Melbourne increased its renewable energy consumption by 17,275 gigajoules due to a restructuring of its energy contracts to increase green power purchases. Retrofit works for 12 City of Melbourne buildings commenced in 2010.

The Eco-City program provides a long term strategic focus for a range of initiatives and plans that the City of Melbourne has been instigating and developing over the last decade. A core principle underlying the City of Melbourne's success in encouraging others to take on new technologies is to incorporate these technologies within their own organizational structures, thus providing state-of-the-art examples for others to see how things when put into practice.

Lesson Learned

The following are some of the early lessons from the City of Melbourne's innovative Eco-City program and the various attributes of the program:

- Complementary strategic approaches are needed to provide the reinforcement and robustness required to support such an initiative and to provide the necessary policy framework.
- Political support is crucial. Leadership has inspired and has been essential to the success of the initiative. It established confidence throughout organizations to embrace the approaches necessary for the implementation of the program.
- Partnership is necessary to achieve positive outcomes, especially with the business sector. A strong alliance was developed which was fundamental to the program. The Community Reference Group was an essential aspect in involving the public and its involvement in the development of the plan was an integral part of the consultation process.
- Sound economic foundations provide the business model, incentives and support necessary to get the program implemented.
- A statutory framework is imperative so that environmental standards and the entire Eco-City framework can be transposed into local and national law, therefore providing the legislative basis for the program to be implemented.

Local government led efforts to become an Eco-City

CH2 – A 6 Green Star Design and 'As Built' Rating. In 2004, the City of Melbourne embarked on an ambitious plan to construct a new office building, Council House 2 (CH2). CH2 was the first project to receive a six-star rating (world leader status) by the Green Building Council of Australia (GBCA) under the Green Star rating system for environmental performance of commercial properties.

Queen Victoria Market solar energy. Launched in April 2003, the Queen Victoria Market solar energy system is the largest grid-connected solar photovoltaic installation system in the southern hemisphere. During its first year the installation saved more than 350 tonnes of greenhouse gas emissions. This project was funded by the Australian Greenhouse Office and the City of Melbourne.

- Sophisticated marketing has given the initiative broad acceptance and has provided a platform to engage with stakeholders.
- Robust reporting, monitoring and evaluation are enshrined in the process ensuring credibility and concise policymaking and analysis.
- An ambition to be recognized as the world's most liveable city and to keep sustainability issues relevant and valuable was a major part of the program. The Lord Mayor's drive for this accolade has also been embraced by all councillors and is central to the Eco-City approach.



Queen Victoria Markets Solar Energy.

Photo: © City of Melbourne "Zero net emissions by 2020 - Update 2008"

Replication

In order for the City of Melbourne's Eco-City vision to be replicated elsewhere, a local government must undertake certain objectives and develop partnerships to establish the necessary support. In the case of Melbourne, certain partnerships were formed and this can be replicated anywhere, with regard to relevant institutions and organizations in the respective city.

With regard to the 1200 Buildings program, the Environmental Upgrade Agreement is similar to the PACE (Property Assessed Clean Energy) program in the United States which has been highly successful. However, local municipalities in the United States needed to raise capital through the issuing of a market bond rather than institutional financing. The City of Melbourne's environmental upgrade finance mechanism is an innovative and practical approach to financing projects.

Budget & Finances

Melbourne Council invested \$AUS 1 million (US\$ 1.03 million) into the 1200 Buildings program in the 2009-2010 financial year. The Council has a further \$AUS1 million allocated for the 2010-11 financial year. The Victorian State Government has also provided \$AUS 500,000 (US\$ 495,000) to support development of a financial mechanism to accelerate the uptake of the 1200 building program.

The Australian Government, through Low Carbon Australia has granted the City of Melbourne AUS\$200,000 (US\$ 198,000) to establish a cost benefit analysis toolkit that will help building owners and tenants to calculate energy efficiency improvements.

Melbourne Council is also committed to investing more than \$AUS2.5 million (US\$ 2.48 million) to retrofit 13 Council buildings (the Honeywell Energy Performance Contract) – two of which are part of the 1200 Buildings program (Melbourne Town Hall and the Commonwealth Bank Building).

Melbourne's commitments to addressing climate change

Mexico City Pact. Melbourne became a signatory to the Mexico City Pact in January 2011. The Mexico City Pact scales up the cities' role and efforts in combating climate change globally. The Pact is a voluntary initiative of mayors and local authority representatives that consists of ten action points. By signing the Pact, signatories commit to advance local climate action, including the reduction of emissions, adaptation to the impacts of climate change and fostering city-to-city cooperation.

Key Contacts

City of Melbourne

Sustainability Council House 2,
240 Little Collins Street,
Melbourne
Victoria 3000
Australia
Mailing Address: GPO Box
1603 Melbourne 3001 Australia
Tel. +61 3 / 96 58 84 17
Fax. +61 3 / 96 54 48 54

ICLEI Oceania Office

Level 5,
200 Little Collins Street
Melbourne
Victoria 3000
Australia
Tel. +61 3 / 96 39 86 88
Fax. +61 3 / 96 39 86 77
www.iclei.org/oceania

ICLEI World Secretariat (WS)

Capacity Center
Kaiser-Friedrich Strasse 7
53111 Bonn Germany
Tel: +49-228 / 97 62 99-00
Fax: +49-228 / 97 62 99-01
Email: capacity.center@iclei.org
www.iclei.org

Sources

- City of Melbourne web pages: www.melbourne.vic.gov.au; www.thatsmelbourne.vic.gov.au
- Eco City web page: www.melbourne.vic.gov.au/Environment/Ecocity/Pages/Eco-citySustainabilityCampaign.aspx
- Water savings initiative web page: www.melbourne.vic.gov.au/Environment/WhatCouncilisDoing/Pages/Watersavingsinitiatives.aspx
- 1200 Buildings website: www.melbourne.vic.gov.au/1200buildings/Pages/Home.aspx
- 1200 Buildings Program Youtube footage: www.youtube.com/watch?v=TStitA823Xg
- CH2, retrofit Youtube footage
www.youtube.com/watch?gl=AU&hl=en-GB&v=vJV0wnbAZ6M
- 530 Collins St, retrofit Youtube footage: www.youtube.com/watch?v=Zafli7ukZ70
- 131 Queens St retrofit Youtube footage: www.youtube.com/watch?v=Gqyjd898l5M
- Sustainable Melbourne Fund website: www.sustainablemelbournefund.com.au/

Acknowledgements

- This ICLEI case study is part of the Local Sustainability 2012 Case Study Series.
- Authors: Hazen Cleary and Bernie Cotter (ICLEI Oceania).
- Contributions: Michelle Isles, Senior Relationships and Programs Manager, City of Melbourne.
- Editors: Steven Bland, Shay Kelleher, Richard Simpson (ICLEI World Secretariat).

This case study compliments the publications prepared for the Rio+20 Conference and is part of the 'Local Sustainability 2012 Case Study Series: Showcasing progress in local sustainability'. This project is generously supported by the Fondation Charles Léopold Mayer pour le Progrès de l'Homme. The case studies can be accessed online at www.iclei.org/casestudies



ICLEI – Local Governments for Sustainability is an international association of local governments committed to sustainable development. ICLEI's mission is to build and serve a worldwide movement of local governments to achieve tangible improvements in global sustainability with special focus on environmental conditions through cumulative local actions.



The ICLEI Case Study series (iclei.org/casestudies) focuses on urban sustainability activities of ICLEI Members and local governments being part of ICLEI projects across the globe.
ICLEI World Secretariat. Email: publications@iclei.org

© 2012 ICLEI e.V. All rights reserved.

April 2012