EnviroDevelopment

Ecosystems

ECOSYSTEMS

Developments displaying the Ecosystems leaf have taken steps to protect and enhance the health and sustainability of natural systems, encourage native biodiversity and rehabilitate degraded sites.

In particular, developments that have achieved this leaf are designed to:

- Improve the resilience of ecological communities
- Maintain and create viable areas of habitat and enhance habitat connectivity
- Encourage rehabilitation of waterways and riparian areas and protect water quality Minimise disruption to natural landform
- Promote community awareness of biodiversity and conservation issues
- Ensure natural areas are monitored and maintained to protect their ecological values beyond the development phase

Fast Facts

- Australia contains around 7-10 per cent of the world's biodiversity, and around 80 per cent of Australia's vertebrate and plant species are found nowhere else in the world[1].
- Over the last 200 years Australia has suffered the largest documented decline in biodiversity of any continent[2]. Climate change is expected to compound existing pressures, and place already stressed and vulnerable species at greater risk[1].
- Over 40 per cent of nationally listed threatened ecological communities, and more than 50 per cent of threatened species, occur in urban fringe areas[3]. Environmentally responsible development can assist in the preservation of Australia's diverse ecosystems.

Benefits to the developer:

- Marketing advantages through quality product and EnviroDevelopment promotion
- Potential reduced development assessment times
- Potential savings in developments costs and / or access to incentives
- Improved corporate image
- Improved aesthetics and visual benefits

EnviroDevelopment tips:

- Engage suitably qualified environmental professionals at project commencement to identify areas of ecological significance.
- Consider how the site interacts with the surrounding catchment and identify opportunities to integrate with a broader catchment management plan.
- Consider how adjacent properties may influence weed and pest management on site.
- Design built form to respond to the site's natural topography. This gives the development a more established feel and makes it unique.
- Identify ways to engage the end user in ongoing protection of flora and fauna species.
- Consider whether additional green space can be incorporated into the masterplan

1. Department of Sustainability, Environment, Water, Population and Communities, *Australian State of the Environment 2011*. Available at: www.environment.gov.au/soe/2011/index.html.

2. Department of Environment and Water Resources, *Australia State of the Environment 2006*. Available at: www.environment.gov.au/soe/2006/publications/report/pubs/soe-2006-report.pdf

3. Department of Environment and Water Resources, *Ecological Sustainable Development Design Guide Edition 3*. Available at: www.environment.gov.au/sustainability/government/publications/esd-design/pubs/esd-design-guide.pdf

enviro DEVELOPMENT™

EnviroDevelopment

Waste

WASTE

Fast Facts

- In 2006–07, 42 per cent of Australia's waste came from the construction and demolition industry[1].
- An average house demolition generates about 150 to 250 tonnes of waste, and around four tonnes of waste are generated during construction of an average house[2].
- In 2006-2007, 58 per cent of construction and demolition waste was recycled[3].
- Every 10 tonnes of recyclable material recovered is equivalent to taking four cars off the road permanently[4].
- Up to 80 per cent of household waste can be recycled including glass, metals, paper and some plastics. Organic waste can be composted individually or via a community effort[4].

Developments displaying the Waste leaf have taken significant measures to reduce waste generation and have reused or recycled 60 per cent of construction and demolition waste.

In addition, efforts are made to:

- Minimise on-site and off-site pollution during the construction phase
- Promote the re-use of existing buildings and materials on site
- Utilise local recyclers
- Promote occupant recycling, composting and waste reduction through the provision of appropriate facilities and guidelines

Benefits to the developer:

- Reduced costs and charges for waste removal and disposal
- Potential cost savings from reduced resource consumption and wastage
- Potential for reduced development assessment times
- Marketing advantages from using EnviroDevelopment as a vehicle for promotion of waste minimisation initiatives
- Improved corporate image

EnviroDevelopment tips:

- The greatest number of opportunities for cost effective sustainability solutions are available at the commencement of a project. Consider waste management strategies in the design phase to ensure the maximum range of options are available.
- Identify at project inception local recyclers, secondary product manufacturers and material streams available to the site.
- Incorporate waste minimisation and management requirements into agreements with contractors and subcontractors.
- Consider mechanisms to encourage waste minimisation in built form, such as developing a template Construction Environmental Management Plan for builders.
- Include responsible waste minimisation techniques in employee inductions.
- Establish a program to educate the community and tenants about waste recycling, reuse and reduction upon occupancy, and provide the necessary facilities to allow this.

1. Australian Government Department of Sustainability, Environment, Water, Population and Communities. *National Waste Report 2010*. Available at: www.environment.gov.au/settlements/waste/publications/pubs/fs-national-waste-report-2010.pdf

2. Government of South Australia. Construction and Demolition Materials. Available at: www.zerowaste.sa.gov.au/upload/facts-sheets/construction_demolition_3.pdf.

3. Australian Government's Environment Protection and Heritage Council. National Waste Policy Overview 2009.
Available at: www.environment.gov.au/settlements/waste/index.html.

4. Clean Up Australia. Recycling Fact Sheet. Available at: www.cleanup.org.au/PDF/au/cua_recycling_fact_sheet.pdf

enviro DEVELOPMENT™

EnviroDevelopment

Energy

ENERGY

Fast Facts

- The average amount of solar energy that falls on Australia is about 15,000 times the amount of energy Australians use each year[1].
- The energy used by our buildings accounts for approximately 20 per cent of Australia's greenhouse gas emissions[2].
- By installing a master switch, a household can save up to 10 per cent of total annual electricity use.
- Around 25 per cent of household energy use is used for water heating. A solar hot water heating system can provide between 50 and 90 per cent of an average household's needs[1].
- Good passive design can maximise the efficiency of buildings to heat and cool, making them more comfortable year round and reducing the need for air-conditioning[3].

Developments displaying the Energy leaf have reduced greenhouse gas production by 20 per cent compared to minimum compliance.

Developers choose to achieve this in a range of ways, often through a combination of improved design of homes, energy efficient appliances and fixtures, alternative energy sources such as solar power, and behavioural management. In addition, developments that have achieved this leaf:

- Are designed to provide best practice solar access opportunities
- Consider shielding from the summer sun and ventilation
- Implement measures to reduce peak load
- Provide efficient lighting in common areas
- Provide opportunities for residents to learn about energy saving techniques

Benefits to the developer:

- Potential access to reduced infrastructure charges or rebates based on reduced energy demand
- Potential access to rebates for specific initiatives, such as solar panels
- Marketing advantages from well designed homes and the potential for utility savings
- Marketing advantages from using EnviroDevelopment as an effective vehicle for promotion of energy related initiatives
- Improved corporate image

EnviroDevelopment tips:

- Consider solar access and prevailing wind patterns early in masterplan design/layout.
- Consider providing tailored site analyses for each individual lot to recommend the ideal location and positioning of homes and facilities, e.g. providing building envelope plans.
- Consider negotiating bulk purchase agreements for major items that may benefit all residents, such as solar hot water heaters.
- If acting solely as land developer, consider providing detailed guidelines to recommend appliances, materials and design techniques that reduce the need for energy use.

1. Department of Climate Change and Energy Efficiency. Living Greener. Available at: www.livinggreener.gov.au/energy/energy-efficiency-home.

2. Department of Climate Change and Energy Efficiency. Available at: www.climatechange.gov.au/what-you-need-to-know/buildings.aspx.

3. Department of Local Government and Planning and Environmental Protection Agency 2004, *Towards Sustainable Housing in Queensland – Discussion Paper*.

enviro DEVELOPMENT™

EnviroDevelopment

Materials

MATERIALS

Fast Facts

- Embodied energy is the energy consumed in the production of a building. This includes the energy used for extraction of raw materials, manufacture of materials and transport to the site.
- The embodied energy in an average Australian home is equivalent to 15 years of operational energy[1].
- Reusing building materials can save about 95 per cent of embodied energy which would otherwise be wasted[1].
- One of the direct environmental impacts of the construction industry is the resources consumed, however the type and amount of materials used can greatly reduce the level of impact[2].

Developments displaying the Materials leaf have used environmentally responsible materials to lower environmental impacts.

In particular, developments that have achieved this leaf:

- Ensure a minimum of 20 per cent of construction materials are reused materials, recycled materials, have low lifecycle energy or are from renewable sources
- Use low emissions paints, floor coverings and adhesives to encourage high indoor air quality
- Preference local materials suppliers
- Minimise packaging of construction materials
- Provide opportunities for residents to learn about sustainable material use

Benefits to the developer:

- Product differentiation
- Marketing benefits through using EnviroDevelopment as a vehicle for promotion of responsible materials choices
- Improved corporate image
- Potential for cost savings from reusing materials and materials requiring lower energy inputs

EnviroDevelopment tips:

- Identify existing structures on-site and determine if there is any possible use for all or part of the structure, for example converting an existing shed into a sales office, or using part of the shed as a picnic shelter.
- Seek out local suppliers of recycled or second-hand materials to assist in the reduction of transportation-related fossil fuel consumption.
- Establish a dialogue with contractors early on to determine cost effective ways to incorporate recycled materials into civil works.
- Request minimal packaging from materials suppliers and make arrangements to return or recycle packaging.
- Where you've achieved great things with environmentally responsible materials, share this success with home buyers by educating them on the efforts made and how they might be able to work with their builder to incorporate environmentally responsible materials.

1. Australian Government. Your Home website. Available at: www.yourhome.gov.au

2. Australian Bureau of Statistics. 1301.0 Year Book Australia 2003. Available at: www.abs.gov.au/ausstats/abs@.nsf/Previousproducts/1301.0Feature%20Article282003?opendocument&tabname=Summary&prodno=1301.0&issue=2003&num=&view=

enviro DEVELOPMENT™

EnviroDevelopment

Water

WATER

Fast Facts

- The total useable volume of freshwater available to humans and ecosystems is less than one per cent of earth's freshwater resources[1].
- In 2007, household water use accounted for 23 per cent of Australia's water use[2].
- Water efficient devices can result in significant water savings. A water efficient showerhead uses less than a third of the water of a standard showerhead[3].
- An average single flush toilet costs around $760 over 10 years. A water efficient dual-flush toilet costs only $250 over the same period[4].
- Up to 60 per cent of domestic water is used outdoors. Reducing lawn areas and planting drought tolerant species can greatly reduce residential water consumption[5].

Developments displaying the Water leaf have reduced potable water use by 20 per cent compared to regulatory requirements.

This can be through a combination of:

- Improved efficiency of water use, including water efficient appliances and fittings
- Source substitution, such as rainwater tanks, recycled water and harvested stormwater
- Providing water-wise landscaping packages to minimise the use of potable water for irrigation of private open space

These developments also minimise the use of potable water for irrigation of public spaces and provide opportunities for the end user to learn about water conservation techniques.

Benefits to the developer:

- Recognition of development as an EnviroDevelopment
- Improved marketability of lots through utility savings to residents, and use of EnviroDevelopment as a credible mechanism to promote these savings
- Potential for rebates on water tanks and water efficiency devices
- Improved corporate image

EnviroDevelopment tips:

- Discuss water efficiency with your landscape consultant to consider the appropriate species and densities, as well as the best mechanisms for avoiding evaporation and delivering unavoidable irrigation.
- Consider negotiating bulk purchasing agreements for significant water supply items such as rainwater tanks.
- Incorporate requirements and recommendations for water efficient appliances and fittings within design guidelines.
- Consider providing waterwise landscaping packages to avoid the need for irrigation and give the development a more established feel earlier

1. UN Water. Available at: http://www.unwater.org/statistics_res.html.

2. Australian Conservation Foundation. Consuming Australia 2007. Available at: acfonline.org.au/uploads/res/res_atlas_main_findings.pdf

3. Water Efficient Labelling and Standards Scheme. Available at: www.waterrating.gov.au/products/index.html

4. Department of Climate Change and Energy Efficiency, Living Greener web site. Available at: www.livinggreener.gov.au/water

5. Your Home Technical Manual. Available at: www.yourhome.gov.au/technical/fs76.html

enviro DEVELOPMENT™

EnviroDevelopment

Community

COMMUNITY

Fast Facts

- A building can make a contribution to social sustainability through the way it responds to its surroundings and meets the social needs of end users.
- Accessible housing offers benefits such as safety, security, good design to all residents and easily adaptable living to suit a diverse range of needs.
- Australians produce more motor vehicle pollution per capita than almost any other country in the world[1], with 80 per cent of people travelling to work by private motor vehicles[2]. Cycling 10 kilometres each way to work can reduce greenhouse gas emissions by about 1,000 kilograms a year[3].

Developments displaying the Community leaf have taken steps to create vibrant, cohesive, sustainable communities. These communities aim to reduce reliance on private motor vehicles, have good community facilities, and safe and accessible buildings.

In particular, developments that have achieved this leaf are designed to:

- Encourage community cohesiveness through thoughtful community design, the provision of facilities and the ongoing support of social capital such as community organisations
- Provide safe, accessible and comfortable housing, facilities and workplaces
- Encourage walking, cycling and the use of public transport
- Protect and celebrate indigenous and post-European heritage

Benefits to the developer:

- Improved marketability through community assets and facilities, and improved visual amenity for all residents
- Certification acts as a vehicle for promotion of community initiatives by helping to explain the benefits of design features
- Improved corporate image
- Increased local government recognition of the merit of community attributes, with the potential to result in reduced assessment times

EnviroDevelopment tips:

- Engage the local community early to understand how your development can integrate with the existing community.
- Establish a framework for ongoing community involvement.
- Design community layout to provide passive surveillance opportunities, and safe and inviting streets and open spaces.
- Provide opportunities for active recreation and transport such as pathways with shade and seating opportunities.
- Co-locate the development with easy access to existing facilities.
- Design buildings to achieve good indoor environmental quality through good ventilation, avoiding noise impacts and using non-toxic materials indoors.

1. Commonwealth of Australia, 2005, Your Home Technical Manual. Available at: http://www.yourhome.gov.au/technical/fs26.html

2. Australian Bureau of Statistics: 1301.0 - Year Book Australia, 2009–10.

3. Department of Climate Change and Energy Efficiency, Living Greener website. Available at: www.livinggreener.gov.au/travel

enviro DEVELOPMENT™