

Masterplan Elements #5: Environmentally Sustainable Design (ESD)

11 October 2016

Overview

The owners of East Village are releasing a series of documents to profile specific inputs into a 20-year masterplan for the Bentleigh East industrial precinct.

The purpose of the 'Elements' documents are to build up the detail necessary for putting forward a comprehensive masterplan for community input and review.

In this document we examine the needs and planning considerations for **Environmentally Sustainable Design or ESD**. While ESD has not been specifically raised in consultations on East Village, the landowners have identified it as an important planning consideration for the development of a 20-year masterplan for East Village.

Summary

- The redevelopment of the East Village precinct will seek to set a new best-practice benchmark for Environmentally Sustainable Design (ESD).
- By incorporating ESD into the planning and design for East Village the precinct can evolve into a quality and well-designed urban environment and a liveable, sustainable and economically thriving precinct.
- The preferred system the landowners have committed to achieving is the Urban Development Institute of Australia's (UDIA) EnviroDevelopment assessment scheme. This is a six-element rating tool that looks at community, social and environmental design aspects and is becoming widely recognised as one of the benchmark assessments in ESD.
- The EnviroDevelopment tool requires third-party assessment and does not rely on self-accreditation and reporting.
- The EnviroDevelopment rating exceeds the requirements set by the Glen Eira City Council and the State Government.
- The landowners of the East Village precinct have committed to achieving these standards and will seek to set a benchmark for future development in the Glen Eira municipality.

Introductory comments

The landowners of East Village have committed to best practice ESD as a planning and development principle for the precinct. This is in recognition of the need to set a benchmark for development in Glen Eira to suit the medium to long term nature of the masterplan and to help deliver a liveable, sustainable and economically thriving precinct.

In order to achieve this, the landowners have reviewed potential ESD rating tools and have committed to the EnviroDevelopment assessment system by the Urban Development Institute of Australia (UDIA) as providing a suitable independent framework.

The UDIA's EnviroDevelopment system is a scientifically-based assessment tool that follows standards which exceed those generally set by councils, State and Federal governments. Certification involves an independent transparent and rigorous third-party assessment that provides the community with assurance of the legitimacy of the rating.

EnviroDevelopment awards certification across four or more of their categories being: ecosystems, waste, energy, materials, water and community. These six environmental elements are also those identified in the 'sustainable tools for an environmental performance strategy' (STEPS) web-based design assessment tool recommended by the Glen Eira Council.

What is ESD and EnviroDevelopment?

Environmentally Sustainable Design is...

*"a set of principles that can be implemented into the design of a home/building (from construction stage to on-going operation). ESD aims to reduce the impact of a home/building on the natural environment, while improving the comfort for the occupants. These principles, when all implemented, go beyond the minimum requirements of the Building Code of Australia."*¹

EnviroDevelopment is...

*"a scientifically-based assessment scheme that independently reviews development projects and awards certification to those that achieve outstanding performance across six sustainability elements – ecosystem, waste, energy, materials, water and community."*²

Why is consideration of ESD important for East Village?

It is recognised that the need for quality and well-designed buildings, public spaces and forward-thinking transport networks is essential to promoting well-being, and economic and social prosperity in urban environments.

¹ Glen Eira City Council – Environmental sustainability design assessment tools:
http://www.gleneira.vic.gov.au/files/assets/public/document-resources/planning/enviromental_sustainability_design_assessment_tools.pdf

² This is an EnviroDevelopment: http://www.envirodevelopment.com.au/_dbase_upl/Consumer.pdf

This is particularly relevant as housing densities across Melbourne increase, the issue of housing affordability becomes more acute and the collective drive to reduce the city's carbon footprint intensifies.

In the Draft Environmental Sustainability Strategy produced in June this year, the Glen Eira City Council highlighted that 90 per cent of Glen Eira residents considered environmental sustainability as important or very important.³

Living in a certified EnviroDevelopment can provide the following benefits to residents⁴:

- Improved marketability of your home.
- Reductions on power and water bills compared to a home meeting minimum regulatory requirements.
- Reduced need for air-conditioners or heaters.
- Watering your garden from a non-potable supply.
- Facilities that make it easy to recycle.
- Landscaping in public areas that look good year round.
- Opportunities to interact with nature.
- Reduced air, noise and light pollution.
- Neighbourhoods that are safe, interesting and pleasant to spend time in.
- Neighbourhood design and facilities that encourage active and healthy lifestyles.
- Walkways that are safe and comfortable for all residents to walk between homes, recreation areas and local services.
- Housing and local facilities that are accessible to a diverse range of people.
- Access to local shops, recreation areas and public transport options.
- Reduced need for ongoing maintenance, saving money and time.

What are the important planning considerations?

Glen Eira City Council encourages anyone proposing future building works (commercial and residential), to consider designing their building to higher standards than the minimum six-star rating energy efficiency rating required in Victoria by the State Government.^{5,6}

The Council encourages the use of the STEPS web-based design assessment tool, which helps rate the sustainability of residential developments.⁷

The key environmental elements that STEPS looks at are:

- energy efficiency and peak energy use;

³ Glen Eira City Council Draft Environmental Sustainability Strategy 2016:

<http://haveyoursaygleneira.com.au/draft-environmental-sustainability-strategy/documents/39142/download>

⁴ This is an EnviroDevelopment: http://www.envirodevelopment.com.au/dbase_upl/Consumer.pdf

⁵ Incorporating sustainable design practices into your home or buildings:

http://www.gleneira.vic.gov.au/files/assets/public/document-resources/planning/sustainable_design_practices_booklet.pdf

⁶ For more information on the six star rating see <http://www.vba.vic.gov.au/consumers/6-star-standard>

⁷ STEPS: <http://www.sustainablesteps.com.au/>

- water use;
- stormwater quality impact;
- transport;
- waste management; and
- building materials.

Under a current review of the Glen Eira Planning Scheme the City Council is considering whether future development applications should be assessed against ESD (in this case 'Environmentally Sustainable Development) standards.⁸

The EnviroDevelopment tool assesses the same sustainability elements⁹:

- **Ecosystem** *If a development displays the ecosystems icon, it has made efforts to protect and enhance existing native ecosystems and rehabilitate degraded sites. This includes measures to encourage a range of plant and animal species within the development, improve water quality, and to design the development to integrate with the natural landscape. While the government plays a role in requiring developers to protect the natural environment, developments that have achieved the ecosystems element have gone beyond these requirements to provide more positive ecosystems outcomes.*
- **Waste** *If the development you're in displays the waste icon, it has used resources more efficiently and reduced the volume of waste sent to landfill during construction. The developers made extensive efforts to avoid the generation of waste, and at least 60% of unavoidable waste was recycled or reused.*
- **Energy** *If the development you're in displays the energy icon, it has gone over and above government energy efficiency requirements and demonstrated a further 20% reduction in greenhouse gas emissions compared to minimum compliance. This may be through a combination of thoughtful design of homes and lots, the installation of energy efficient appliances and fixtures, and the provision of renewable energy like solar panels.*
- **Materials** *If the development you're in displays the materials icon 20% of the materials used in the development are recycled, reused or renewable materials, or are materials that produce fewer carbon emissions over their total lifecycle. There are currently no government requirements to use environmentally responsible materials and these developments have gone beyond standard practice to do so. These developments*

⁸ See page 14 http://www.gleneira.vic.gov.au/files/assets/public/document-resources/strategic-planning/planning-scheme-discussion-paper_web.pdf

⁹ This is an EnviroDevelopment: http://www.envirodevelopment.com.au/_dbase_upl/Consumer.pdf

may also use low emissions materials in homes and common areas to ensure a healthy indoor environment.

- **Water** *If the development you're in displays the water icon, it has incorporated ways to reduce the use of drinking water (potable) by at least 20% compared to minimum regulatory compliance. Different developments will achieve this in different ways, which may include using stormwater for irrigation, providing rainwater tanks or improving water efficiency.*
- **Community** *If the development you're in displays the community icon, it has made extensive efforts toward creating safe, vibrant and cohesive communities. This can include engaging the local community in the design of the development, providing active or public transport opportunities, ensuring all homes have good indoor environmental quality and designing the community to encourage interaction between all community members.*

Glen Eira City Council has outlined the following best-practice tips for achieving highly efficient and sustainable buildings¹⁰:

- *letting the sun penetrate the building in winter and keeping the sun out in summer by putting windows, eaves and shading in the right places;*
- *locating rooms used in the daytime (such as living rooms) to the north, where they will get good winter sun and limit the need to turn on lights;*
- *ensuring cross-ventilation is incorporated into the design of the building to reduce internal temperature during summer;*
- *incorporating draught proofing measures and providing insulation in walls, floors and ceilings to reduce loss of heat;*
- *using materials inside the building to store heat, such as brick and concrete (this is called thermal mass);*
- *purchasing efficient appliances such as solar hot water systems and dishwashers, fridges and washing machines with a high star rating;*
- *orientating outdoor spaces to the north to maximise sunlight;*
- *installing rainwater tanks connected to toilets, laundry and gardens;*
- *planning outdoor areas that have permeable surfaces (such as grass, garden beds, porous paving) that allow rainwater to soak into the ground; and*
- *analysis of the likely 'natural' internal temperature range to ensure the building will operate well in summer and winter.*

¹⁰ Glen Eira City Council - Sustainable design practices: <http://www.gleneira.vic.gov.au/Planning-and-business/Planning/Sustainable-design-practices>

What are some examples of best practice?

To help inform the masterplan for East Village, the landowners are having a closer look at several developments that incorporate best-practice ESD:

- YarraBend (Alphington Paper Mills site)¹¹
- Digital Harbour¹²
- 72a Station St, Fairfield¹³
- Aura Village¹⁴
- Polaris 3083¹⁵
- Woodlea¹⁶
- Tullamore¹⁷

What does this mean for East Village?

The following points emerge for consideration in the East Village masterplan:

- The proposed 20-year masterplan for East Village will incorporate best-practice ESD standards to create a quality and well-designed urban environment.
- The preferred system is the UDIA's EnviroDevelopment assessment scheme. This is a well-established and recognised rating tool that certifies developments that achieve outstanding performance across four or more of the six sustainable elements: ecosystem, waste, energy, materials, water and community.
- The landowners of the East Village precinct are committed to achieving accreditation for all six elements of the UDIA's EnviroDevelopment system which will set a benchmark for future development in the Glen Eira municipality.
- The standards exceed those stipulated by the Glen Eira City Council and the State Government.

¹¹ YarraBend: <https://yarrabend.com.au/>

¹² Digital Harbour, Docklands: <http://www.places.vic.gov.au/precincts-and-development/docklands/docklands-precincts/digital-harbour>

¹³ Nightingale 2: <http://nightingalehousing.org/s/Nightingale-20-Project-Summary-compressed.pdf>

¹⁴ Aura: <https://www.stockland.com.au/residential/qld/aura>

¹⁵ Polaris Bundoora: <http://www.polaris3083.com.au/sustainable-leader/>

¹⁶ Woodlea: <http://www.woodlea.com.au/>

¹⁷ Tullamore: <http://tullamore.mirvac.com/>