



SITE 18A NORTHSORE HAMILTON

DA – SUPERIOR DESIGN OUTCOMES REPORT

SILVERSTONE DEVELOPMENTS

Client

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EXECUTIVE SUMMARY

The proposed development, Site 18A Northshore Hamilton, comprises of one hundred and seventy six (176) apartments in two (2) towers with common amenities.

EMF Griffiths have been engaged by Silverstone Development as the project’s Sustainability Consultants. This report outlines the project’s commitment to superior design outcomes with respect to ESD.

The key achievements which can be considered a superior design outcome with respect to ESD are as follows: -

<p>Passive Design</p>	<p>A high-performance integrated façade that incorporates high levels of insulation, high performing glazing, targeted screening for radiant heat and private balconies that provide passive shading and shelter from wind.</p> <p>The use of light colours further reduces the absorption of radiant heat, with significant operability providing passive cooling with natural ventilation.</p>
<p>Energy Management and Lifecycle Impacts</p>	<p>The buildings incorporate significant passive design initiatives that will result in a reduction in annual cooling demand and increased thermal comfort.</p> <p>Building services are to be of high efficiency. Energy-efficient services and a high-performing façade directly reduce energy consumption for heating and cooling, leading to lower costs, improved resource use, and fewer greenhouse gas emissions.</p> <p>The building’s will be all-electric, with no fossil fuels burnt directly on site.</p>
<p>Water</p>	<p>Rainwater water is to be harvested for irrigation.</p> <p>Appropriate WELS ratings to all fixtures to reduce potable water usage.</p>
<p>Waste and Materials</p>	<p>Materials shall be selected which minimise the use of materials that deplete natural resources or create toxic pollution during manufacture. Materials with potential for end-of-life recycling or that contain or are manufactured with high levels of recycled or waste materials are encouraged.</p> <p>Dedicated chutes and dedicated storage area for the separation, collection, and recycling of waste.</p> <p>The buildings will be designed with a Upfront Carbon reduction of 10%.</p>
<p>Certification</p>	<p>The development has been registered with the Green Building Council of Australia, with a commitment having been made to a 4 star outcome, in line with Australian Best Practice in sustainability performance.</p> <p>The project will also be developed to complement the site’s Green Star Communities rating.</p>

SECTION 1.0 INTRODUCTION

EMF Griffiths have been engaged by Silverstone Developments to report on Superior Design Outcomes (SDO's) required by the Department of State Development, Infrastructure and Planning (DSDIP) at Site 18A Northshore Hamilton.

This report will demonstrate how the proposed development protects, manages, and enhances natural systems and promotes the efficient use of materials, water, and energy to minimise impacts on the environment. It will illustrate the project's specific targeted measures that contribute to a sustainable development.

The development has set real and attainable goals to achieve a superior design outcome. The project focuses on the following: -

- A commitment to passive design principles, including energy efficiency and thermal comfort, as well as integration of natural ventilation.
- Project requirements for responsible materials selection and waste reduction.
- Water use reduction through rainwater harvesting and efficiency measures.
- 4 star Green Star Buildings certification, signifying an Australian Best Practice outcome and complementing the site's Green Star Communities outcome.

1.1 BUILDING DESCRIPTION

The building consists of two (2) towers with the following areas: -

- Class 2: Residential apartments on Ground Level through to Level 11 consisting of: -
 - One hundred and seventy six (176) residential apartments.
 - One-bed, two-bed, and three-bed apartments.
- Class 6: Ground Floor retail.
- Class 9: Communal gym on the Ground Floor.
- Class 7a: Car parking in Basement 1.

SECTION 2.0 SUPERIOR DESIGN OUTCOMES

Significant measures have been undertaken to ensure that this development responsibly impacts upon the local environment and addresses environmental, social and economic sustainability aspects for the buildings’ occupants, users and the wider community.

The environmental vision, principles, goals, and strategies for Site 18A Northshore Hamilton, are described as follows: -

Vision	To Create a Sustainable Urban Community			
Principles	Promoting and maintaining a liveable community.	Providing economic benefit.	Protecting ecological values and optimising resource use.	Promoting planning and design excellence.
Goals	A community that is diverse, safe and healthy, has access to services, jobs and learning, that fosters active local participation and is a pleasant place to live, work and visit while integrating with and enhancing the value of existing neighbourhoods.	Economic benefit is maximised by facilitating the release of urban land, incorporating lifecycle costs including operational savings, long term employment opportunities, and creating partnering opportunities and long-term value.	Foster a sustainable future by protecting and managing natural systems, habitats, and biodiversity. Minimize our environmental impact through innovative and efficient use of materials, water, and energy.	Develop a modern, resilient, and adaptable urban form that promotes connectivity, safety, and accessibility whilst recognising existing local values and aspirations.
Strategies	<ul style="list-style-type: none"> • Housing affordability. • High quality of life. • High levels of community participation. • Healthy and safe communities. • Respect existing communities. 	<ul style="list-style-type: none"> • Public benefit. • Lifecycle costs. • Land supply. • Partnerships. • Sustainability champion. 	<ul style="list-style-type: none"> • Climate impact. • Water. • Energy and transport. • Materials and waste. • Habitats and biodiversity. • Pollution. 	<ul style="list-style-type: none"> • Community and place. • Responsive urban form. • Quality public realm. • Infrastructure. • Connectivity, safety, and accessibility. • Engagement and partnerships.

2.1 PASSIVE DESIGN

Deliverable	Strategy
Ventilation	<p>Size and location of operable windows in Bedrooms and Living rooms are being explored to maximise availability of natural ventilation, whilst complying with the BCA operability restrictions.</p> <p>Common corridors to be naturally ventilated.</p> <p>Corner apartments are designed to enhance cross ventilation.</p>
Facade	<p>Reduced window to wall ratios such garden beds incorporated into the façade to limit full height glazing on targeted orientations</p> <p>Use of targeted shade screens, overhangs and balconies to provide shade, minimise glare and reduce radiant heat.</p> <p>Use of high performing glazing to maximise occupant comfort and reduce mechanical loads.</p>
Design for the climate	<p>Ceiling fans to be in all Living rooms and Bedrooms.</p> <p>Light colours of the building façade materials and roofs to assist with reducing absorption of radiant heat.</p> <p>Use of natural vegetation to reduce the heat island effect and provide shade.</p> <p>Minimize the environmental impact through innovative and efficient use of materials, water, and energy.</p>
Landscaping	<p>Landscaping design will be low water use and will enhance biodiversity with predominately native / indigenous planting.</p> <p>Foster a sustainable future with the use of significant planting for the sub-tropics and provision of shade.</p> <p>Rainwater with drip irrigation / moisture control to be used for landscape irrigation.</p> <p>Suitable systems implemented to improve run off quality.</p>

2.2 ENERGY MANAGEMENT AND LIFECYCLE IMPACTS

Deliverable	Development Strategy
NatHERS Rating	<p>The development will achieve Queensland Development Code (QDC) Performance Criteria P2 and NCC Section J compliance with:</p> <ul style="list-style-type: none"> Individually achieve an energy rating of not less than 6-stars; and Collectively achieve an average energy rating of not less than 7-stars.
Thermal Comfort	<p>All dwellings will have heating and cooling load compliance to ABCB standard (6-stars minimum) and will achieve a good level of thermal comfort.</p> <p>Private balconies and targeted use of shade screens provides shelter and protection from radiant heat.</p> <p>Ceiling fans to be provided for all bedrooms and living rooms.</p> <p>High performing façade and use of natural ventilation to enhance thermal comfort.</p>
Energy Efficient Lighting	LED lighting to be used as standard in apartments. Light fittings will be efficient, durable, low maintenance, fit for purpose, and meet Section J requirements (lighting power density).
Lighting Zoning	<p>Lighting will be zoned and controlled to allow for reduction in lighting.</p> <p>Occupancy controls are included to ensure that energy is not wasted by air conditioning and lighting unoccupied spaces.</p> <p>Lobby and common areas hallways will have motion sensing. Car park lighting to have dual circuits: timed security light circuit and a motion triggered circuit. Similar approach to be used for common areas.</p>
Fans and Pumps Efficiency	All fans and pumps in the building will have high efficiency motors with demand control to reduce energy consumption.
Energy Use	<p>Energy sub meters to all substantial energy, light and general power consumptions for common areas, along with an effective mechanism in place for monitoring energy consumption data will be used in the development.</p> <p>Metering for all units to inform the users on their energy use and management of electricity.</p>
Mechanical	<p>Efficient HVAC systems to be implemented.</p> <p>High performance façade and ceiling fans to reduce the need to heat and cool units.</p>
Solar	Use of solar PV to reduce electrical demand of the development and reduce operational greenhouse gas emissions.
Reduction of carbon	Reduction of carbon footprint as the building to be all electric, with no gas.

2.3 WATER

Deliverable	Development Strategy
Rainwater Collection and Re-Use	Rainwater harvested from the roof catchment will be used for irrigation.
Water Conservation	<p>The development will achieve Current Queensland Development Code (QDC) Performance Criteria P7 requires that:</p> <p>All toilet cisterns have a dual flush function and have a minimum 4-star Water Efficiency Labelling and are compatible with the size of the toilet bowl to allow for proper functioning of the toilet.</p> <p>All fixtures as below are to have a minimum Water Efficiency Labelling and Standards rating (WELS) of:</p> <ul style="list-style-type: none"> - Showers with 3 Stars with a maximum floor rate of 9L/min - Taps – kitchen with 4 Stars with a maximum flow rate of 7.5L/min - Taps – hand wash basins with 5 stars with a maximum flow rate of 6L/min <p>Pool cover to minimise loss of water through evaporation.</p> <p>For landscaping, alongside the reuse of rainwater, an efficient irrigation system is to be used with incorporates a drip system with moisture controls and timed release to reduce the use of potable water.</p>
Water Meters	<p>Water meters are required on all major water uses in the project, as well as in each dwelling, and a practical mechanism for data monitoring is identified.</p> <p>Common area water meters will be linked to automated monitoring and provide a leak detection system with an active alarm process as standard.</p>
Reduction of Plumbing Materials	The project will have an efficient plumbing design.
Fire System Water Consumption	<p>Hydrant test water will be reused for irrigation.</p> <p>Each floor or section of a building fitted with a sprinkler system is to have isolation valves or shut-off points for floor-by-floor testing.</p>

2.4 WASTE AND MATERIALS

Deliverable	Criteria
Sustainable Supplier	<p>The design will demonstrate innovation in the selection and use of construction materials and products, which minimise the use of materials that deplete natural resources or create toxic pollution in their manufacture. Materials with potential for end-of-life recycling or that contain, or are manufactured with, high levels of recycled or waste materials should be encouraged.</p> <p>The following strategies are to be considered for materials selection: -</p> <ul style="list-style-type: none"> • Timber products used in the building and construction works are required to be sourced from either or a combination of post-consumer re-used timber; or Forest Stewardship Council (FSC) certified timber. • Total cost of PVC content is to be reduced through replacement with alternative materials. • Thermal insulants and refrigerants, where they are used are to avoid the use of ozone-depleting substances in both manufacture and composition. • All wall, ceiling, carpet and floor finishes, and adhesives and sealants are to be low-VOC emitting (EN 13419). • The project will, where appropriate, source their manufactured materials from suppliers with ISO14001 certification and Environmental Management Plans (EMP) in place. • The development will use materials sourced locally where practical. • Reduction of Portland cement in all concrete mixes across the project.
Recycling Waste Collection and Storage	<p>Bin chutes is provided on each floor.</p> <p>Dedicated storage area for the separation, collection and recycling of waste will be provided to accommodate cardboard, general and commingled waste collection.</p> <p>Minimisation of construction waste that goes to landfill.</p>
Waste Management Plan	<p>Waste Management Plan will be provided, outlining benchmarks for recycling and waste management both during construction and on an ongoing basis.</p>