

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2024/1488

Date: 30/09/2024



67-69 SHORT STREET EAST CLEVELAND.

Roadmap for compliance with PDA requirements 5.4

05/03/202

Introduction.

Ecolateral, in its capacity as sustainability consultants and LHA access assessors, has been commissioned by Provincial Building P/I to prepare a roadmap of initiatives that will address the sustainability requirements of the proposed residential project for 67-69 Shore St East, Cleveland. The land is located within the Queensland State Government Toondah Harbour Priority Development Area. (PDA) declared in January 2014. The Development Scheme sets down a wide number of requirements to both enhance and protected the area when fully developed and operational. Relevant to the residential elements is a sustainability charter that ensures that, any new or repurposed buildings, will provide improved performance in consideration of the environment and the infrastructure demands of the future.

The requirements of the development scheme encompass various forms of development and, although the outcomes are consistent, the methods of delivering them varies with different projects. To better understand the impacts and controls required for this project the developers and their team ,have undertaken open and frank discussions on what is achievable and what is economically feasible. From these discussions it was agreed that the developer would present with the submitted DA, a suggested pathway to meet the critical performance areas noted in the PDA and further developed in pre lodgement meeting held in November 2023. (See full document in appendices)

5.0 Implementation strategy

5.4 Sustainability

The Land use plan requires development to address sustainability which has been shown to lead to longer term reduced development and housing costs including ongoing living costs. Energy, transport, water and access to services are major cost burdens on all household budgets.

A key aspect of this is how development addresses sustainability which is also an important driver for economic development and development for community purposes. Ecological sustainability will be addressed in this PDA by setting goals for a range of long term sustainability aspirations.

The Land use plan is supported by guidelines which provide development standards to ensure the minimisation of adverse impacts on ecological processes and natural systems.

The actions	Desired outcomes
EDQ will work with Redland City Council, government agencies, developers, utility providers and other organisations to develop strategies that enhance the natural environment and ensure efficient use of resources including through the development of site Total Energy and Water Plans (addressing demand and supply side strategies):	Water: reduced potable water use by 20 per cent compared to regulatory requirements.
Develop strategies for:	Community: reduced reliance on motor vehicles and increased walking, cycling and use of public transport as well as access to community facilities and safe and accessible buildings.
» community education to promote the protection and enhancement of the natural environment	Biodiversity and ecosystems: development has sought to protect or enhance the health and sustainability of natural systems and encourage biodiversity and rehabilitation of degraded sites.
» demand optimisation for water and energy efficiency and demand management strategies, including builder education	Waste: significant measures have been taken to reduce waste generation and reuse or recycle 60 per cent of construction and demolition waste.
» grid friendly local and or renewable generation that addresses peak demand	Energy: reduced peak energy demand by greater than 30 per cent and reduced greenhouse gas production by greater than 20 per cent compared with minimum compliance.
» maximising water self containment	Materials: environmentally responsible materials have been used to lower environmental impacts.
» reducing, recycling and reusing demolition, construction and household waste	
» addressing urban heat island effect to ensure urban amenity and lower energy use in dwellings and buildings	
» continue providing and promoting access to public transport services.	

A Sustainability report should address the following relevant aspects:

- Climate responsive design
- Energy: reduction of demand, energy efficiency and renewable energy generation & storage.
- Transport: Provide EV readiness in accordance with *EDQ's Practice Guideline 4: Integrating Sustainable Principles into residential subdivisions & Practice Guideline 21: Electric Vehicle Charging Infrastructure*
- Water: reduction of demand, water efficient features and water reuse/harvesting
- Materials: Measures to reduce the consumption of resources and initiatives that use low impact materials including a focus on embodied carbon reduction.
- Landscape & Environment: Providing a high-quality landscape outcome that contributes to reducing the urban heat island impact & improves ecological values of the site;
- Demonstrate each dwelling achieves a 7-star NatHERS energy rating.

Economic Development Queensland
PRE2023/738 – 67-69 Shore St. East Cleveland
Toondah Harbour PDA
Meeting held – 22 November 2023

Approach to Delivery

The proposed project is rectangular in shape with 30 apartment over 6 stories, a significant common area on the south-eastern section of the first floor and parking for 63 cars on the ground floor. At the present stage of development of the floor plans, it is appropriate to provide an overall roadmap of initiatives that will be an essential reference document when more detailed planning and specifications are developed. The roadmap responds to the broad requirements set down in the scheme and further refined in the initial meetings, by providing specific pathways to deliver the performance measures at a micro level. It will influence the design as they will be seen as a key deliverable for planning, design and construction decisions moving forward. A more detailed delivery path for each element will be created for the use by the team during final design and construction. Where options are either substituted or refined as a result of the evolution of the planning and building process it will be support by a rationale for the change and will provide evidence that the initiative set down in the roadmap is either met or exceeded. Submission for DA adjustment will be pursued where necessary

During construction a list of required evidence will be issued to the builder to ensure that the final report at PC will have evidence of the inclusion of initiatives in the finished product that meet the intent of EDQ.

Roadmap

The roadmap is intended as a single point of reference that can be used throughout the design and construction of the building. It maps the iterations under separate headings and provides rationale for its inclusion or approach. Where a solution is not viable, an alternative can be included if agreed

by Ecolateral and the change will be rationalised as necessary. The final report will revisit and revise the roadmap and confirm what initiatives were delivered and why changes occurred if they did. Explanations for the changes and the basis on which it was agreed to make the change, will also be included.

Conclusion

This approach has proved effective in the past on other PDA's, by guiding the design and the construction to a successful and effective final product. To ensure continuity, Ecolateral will also undertake the accessibility delivery and the NatHERS modelling which will drastically reduce the opportunities for misunderstanding or mixed opinions about the approach. With all the critical elements coordinated and the builder participation from the early stages the project has every opportunity to deliver on the desired performance criteria.





Appendix 1 Roadmap.





SUSTAINABILITY INITIATIVES 67 -69 SHORE ST EAST CLEVELAND

March 2024



Item	Element	Sustainability Initiative	Response	Responsibility	Stage	Check	Mapped to.	Benefits	Carbon Reduction	SGC Goals Delivery
Site Characteristics										
		Brown Field Sites consider 1. On site structures 2. Existing established Flora 3. Hard Stand	Reuse (on or off site) Recycle (on or off site), crushing, transport etc.	Developer/Architect/ planner	Pre Da.	Please Select	5.4 PDA Construction waste reduction and Materials	Saving of materials, costs of replacement and reduction in natural capital use.	Y	
1	Initial concept planning.	Can the building accommodate the changing nature of human occupancy?	• Accessibility requirements. • Community enhancement through cooperative initiatives. • Transport options	Developer/Architect/ Marketer	Early	Please Select	5.4 PDA Accessible Housing	Building provides internal amenities and some future proofing for the changing lifestyles a future climate.		
2	Community footprint. Special provision spaces.	Minimise stormwater discharge through the following: + Water pervious hardscaping + Reclaim / re-estate vegetation, particularly deep-rooted trees + Implement water sensitive urban design principles + Consider the impact of climate change on stormwater discharge.	Manage stormwater so that the post-development peak Average Recurrence Interval (ARI) event discharge from the site does not exceed the pre- development peak ARI event discharge.	Architect / Landscape Architect / Civil Engineer	Early	Please Select	Responding in part Element 5 Stormwater Management.	Stormwater can cause problems downstream when peak events cause flooding. It can also be a source of pollution when litter, sediment, nutrients and chemicals are washed into waterways. Stormwater can be a valuable resource reducing water bills and improving.	Y	
3	Stormwater									
Carbon/Energy										
		Structure Prioritise the following: • Reused materials • Materials with recycled content • Materials with waste products • FSC / PEFC Certified timber • Climate Active Carbon Neutral Certification	1. Portland cement reduction of 30% across all concrete uses in the project. 2. Minimum 5% reduced use of steel reinforcement compared to a standard building 3. FSC/PEFC Certified timber to be specified as preferred	Architect / Structural Engineer / Interior Designer	Planning/ Design	Please select	5.4 PDA Materials choice	Carbon emissions of a building are highest during the use phase, however as buildings become more efficient, the impact of the embodied carbon is becoming more significant. Materials with high embodied carbon include concrete, steel, bricks etc. The World Green Building Council has set a target that by 2030, all new buildings, infrastructure and renovations will have at least 40% less embodied carbon with significant upfront carbon reduction.	Y	
4	Embodied Carbon							The builder's construction practices have the potential to reduce impacts and promote opportunities for improved environmental and social outcomes. If site waste is not split on site then a waste management company who provides monthly reporting on separation and recycle of waste removed from site should be engaged to manage building waste.		
5	Construction Management	• A Construction Waste Management plan is implemented • Metering and monitoring of energy and water use (at a minimum) is implemented in the building. • Responsible construction practices are implemented	• Site to have an environmental management plan • Sustainability training provided to construction workers • Divers at least 80% of construction and demolition waste from landfill	Contractor	Planning/ Design	Please select	5.4 PDA Construction waste reduction		Y	
Appliances/ Energy Generation										
6	On- site Generation	On site generation through PV system capable of providing off set for community power demands.	PV System capable of covering communal power use provided	Electrical Engineer	Planning/ Design	Please select	5.4 PDA Energy use reduction.		Y	

7	Energy use / Greenhouse Gas Emissions (Use phase)	Low Energy Water Heating (High efficiency electric instantaneous, or heat pump) Provide a 'Home User Guide' to each apartment EV Charging consistent with PDA requirements. Low Energy Appliances Bicycle parking is provided for each apartment	1. High energy star rated appliances. Refrigerator 4.5 Star Energy Rating Washing machine 4.5 Star Energy Rating Dishwasher 4.5 Star Energy Rating Dryer 6 Star Energy Rating 2. Pool pump(s) should be 12V capable and run through out maximum irradiation times. 3. PV's (see initiative 6) 4. EV Charging capabilities. Provide electrical board allocation for capability of every space to have 10A supply (visitor spaces included) Provide conduit /cable trays to accommodate the electrification of 25% of the spaces 5. Users Guide (see initiative 21) 6. HWS High Efficiency electronic instantaneous 7. Encourage tenants to purchase new or replacement appliances to meet energy star rating above	Electrical Engineer Architect	Planning/ Design	Please Select	5.4 PDA Energy use reduction.	Buildings are currently responsible for 33% of global energy related carbon emissions; 28% from operational emissions, from energy needed to heat, cool and power them, and the remaining 11% from materials and construction. Current industry trends are aiming for all new buildings to be net zero carbon in operation. Electrification is the direction in which the property industry is moving as it is one of the most important tactics for decarbonising the building sector. Major industry players such as Landlease and Australia's GRT Group have electrification high on their agendas. Note Split cycle AC where included should be •Peak smart/ •B32 gas. •EER 3.3-3.5	Y	
8	Thermal Modelling	Achieve unassisted 7 star Anthers rating for all apartments including • Installing ceiling fans to all bedrooms where required • Installing suitable window systems that reduce heat gain and loss • Management of air infiltration through good building practices and air tightness testing	All units are 7 stars average and minimum individual rating 6 stars. No ODC allowances Blower door test at least one of each design on level 1 and top level.	Architect /Anthers Assessor / Head Contractor	Planning/ Design		5.4 PDA Energy use reduction.		Y	
9	Water Use		The building will reach at least a 20% reduction in potable water usage through high efficiency fittings. (Benchmarked against BAU requirements). The following WELS ratings will be provided as a minimum and surpassed where viable and available: • Taps (Kitchen) – 4 stars with a maximum flow rate of 7.5L/min • Taps (Laundry & Bathroom) – 5 stars with a maximum flow rate of 6L/min • Toilets – 4-star dual flush with a maximum flow rate 3.5L/flush • Showers – 4 stars with a maximum flow rate of 6L/min Appliances: • Washing machine – 4 stars (where supplied) • Dishwasher – 5 stars(where supplied)	Architect / Hydraulic Engineer / Fire Engineer / Landscape Architect	Planning/ Design	Please Select	5.4 PDA Water Conservation	Australia is the driest inhabited continent on earth, yet per capita is amongst the highest consumers of water. The impacts of climate change on rainfall will mean longer periods of drought and a reduction in rainfall in highly populated areas such as Eastern and Southern Australia, with an increase of intense rain periods and extreme rain events.	Y	
10	Storage		Install appropriately sized rainwater tanks for landscape irrigation (root drip feed) and where possible collect and save fire test water for reuse.	Hydraulics Engineer	Planning/ Design	Please Select	PDA 5.4 Water Conservation PDA 5.4	Black burnen and dark roofs compound hot days by creating a heat island effect, where heat is absorbed during the day and reradiated back at night increasing surrounding air temperatures. It is estimated that on ground temperatures can be as high as 35 degrees C in the sun. Creating a micro-climate around the building can reduce the urban heat island effect, reducing the need for cooling and therefore creating less carbon emissions	Y	

		IEQ									
11	Indoor Comfort & Amenity	Internal Performance levels <ul style="list-style-type: none">High quality artificial light should be provided throughoutLow VOC paints / carpets / adhesives / sealantsLow formaldehyde engineered wood products	95% of all paints, carpets, adhesives and sealants are low VOC as defined by the Green Building Council of Australia. 95% of all engineered wood products are low formaldehyde as defined by the Green Building Council of Australia.	Architect / Interior Designer / Mechanical Engineer / Head Contractor / Acoustic Consultant	Planning/ Design	Please Select	5.4 PDA Material choices	Our homes impact our health and wellbeing. With 90% of our time spent indoors and two thirds of that being spent at home, it is essential to provide high levels of indoor environment quality. This means good ventilation and daylight, avoiding the build-up of moisture and reducing harmful emissions from materials used during construction.			
External											
Landscaping / External lighting											
12	Water Resources	Landscaping includes: <ul style="list-style-type: none">A high proportion of indigenous planting speciesNo invasive speciesA diversity of species / genus / is selectedRoot wicking from onsite water retentionXeriscape planting where possible	External landscape in the building, horizontal and vertical, must be provided at a ratio of either 15% of the site area or a ratio of 1:500 of the GFA. Greater than 60% of plants should be indigenous and the site must include at least one significant (nesting) tree or equivalent habitat provision.	Lescaze Architect	Planning/ Design	Please Select	5.4 PDA Water initiatives				
13	Urban Heat Island Effect	Create a cooler microclimate around the building through the following: <ul style="list-style-type: none">light coloured roof (Colourbond such as Surf mist or Whitehaven)light coloured paving (White concrete or equivalent)Shading landscaping elements through overhanging vegetation or roof structuresSpace for deep planting incl. shade trees, pergolas	Minimum: 75% of whole site area to be a combination of heat reducing elements including light colours, vegetation, water bodies, low thermal mass, shading etc.	Architect.	Planning/ Design	Please Select	5.4 PDA energy reduction strategies		Y		
Owner Focus											
14	Occupant driven performance.	Provide a 'Home User Guide' to each apartment.	Minimum: Provide a 'Home User Guide' to each apartment to inform residents about the operational and maintenance requirements of the ESD initiatives in their homes.	Full team		Please Select	5.4 PDA energy reduction strategies	Buildings built now are expected to have a typical lifespan of 50 years or more. Climate change adaptation is the principal way to deal with the impacts of climate change. It can help to manage risks, adjust economic activity and reduce vulnerability. For building owners and managers it can also improve long term business certainty. Australia's climate is changing. Four priority climate change impacts have been identified including extreme heat, drought and water scarcity, sea level rise, and extreme storm and flash flood. Climate change projections show that the occurrence of these events will increase, as well as the intensity.			
Additional Considerations and Trends											

15	Accessibility	<p>Apartment's should be future proofed so that they are capable of catering for all age groups and life situations.</p> <p>All apartments must be designed to comply with the NCC 2022 accessible housing. Usable Housing Guidelines certification is optional can be at varying levels and in varying numbers</p>	Early Planning	Please Select	NCC 2022	<div>10 Reduced Inequalities</div>
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