Capital Bluestone Pty Ltd
Woolooware Town Centre
ESD report Stage 4
Residential/Hotel
Woolooware Bay

Final | 25 November 2016

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Job number 228632

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Job title		Woolooware Town Centre			**Job number** 228632
Document title		ESD report Stage 4 Residential/Hotel Woolooware Bay			**File reference**
Document ref					
Revision	**Date**	**Filename**	ESD report S75 application Stage 4 Residential/Hotel.docx		
Draft 1	9 Jan 2015	**Description**	First draft		
			Prepared by	Checked by	Approved by
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		Signature			
Final	20th Jan 2015	**Filename**	ESD report S75 application stage 4.docx		
		Description	Final draft		
			Prepared by	Checked by	Approved by
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Final	16 Sept 2016	**Filename**	ESD report S75 application Stage 4 Residential/Hotel.docx		
		Description			
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		Signature			
Final	23 Sept 2016	**Filename**	ESD report S75 application Stage 4 Residential/Hotel.docx		
		Description			
			Prepared by	Checked by	Approved by
		Name	Tim Elgood	Alex Hespe	Alex Hespe
		Signature			
Final	25 Nov 2016	**Filename**	ESD report S75 application Stage 4 Residential/Hotel Final Rev D docx		
		Description			

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			Issue Document Verification with Document		✓

Contents

1 Executive Summary

This report identifies the key sustainability strategies that are being considered for the Stage 4 Residential/Hotel planning application.

The report has been structured to respond to the two requirements in the Concept Plan approval and the SEAR's:

Reference document	Item reference	Item Description
Schedule 3	11	***Ecologically Sustainable Development-*** *Future applications shall demonstrate incorporation of ESD principles in the design, construction and ongoing operation phases, including the selection of fabric and materials, water conservation and management initiatives, energy efficiency and renewable energy initiatives*
Schedule 5	7	***Environmentally Sustainable Development-*** *Future applications shall address the environmental performance targets outlined in the Executive Summary to Cronulla Sharks Redevelopment ESD DA Report prepared by Cundall (Appendix R of Environmental Assessment Report)*
Secretary's Environmental Assessment Requirements	MP 10_0229 (MOD 2)	***12. Ecologically Sustainable Development (ESD)*** *The EA shall:* • *Identify how best practice ESD principles will be incorporated in the design of the development, and include innovative and best practice proposals for environmental building performance.*

This report identifies the sustainability strategies to achieve these targets which will be summarised in a Sustainability Management Plan (SMP) during the design development, construction and operational stages of the project. The SMP will provide a clear, defined and measurable KPI's for all the sustainability categories listed in Appendix R of the Concept Plan Approval. The SMP will be a live document that is updated with the progress of the development of the sustainability strategies.

Although it is recognised that there is more design development work to be carried out in order to achieve these sustainability aspirations the project will deliver an overall sustainability performance that is well in excess of minimum compliance and demonstrates leadership in energy monitoring, renewable energy generation and materials selection.

2 Introduction

This report has been developed to address the ESD requirements proposed for the Stage 4 Residential/Hotel planning application.

The changes to the Stage 4 Residential/Hotel are:

1. Increase number of apartments from 209 to 222.
2. 2. Building heights revised for buildings A, B, C, D.
   - Building A: 14 levels;
   - Building B: split between 16 (west end) 11 levels (east end);
   - Building C: 11 levels.
3. 7x 3 storey terrace units in Building D.
4. Function centre removed from levels 5 & 6 to northern elevation building C. Replaced by apartments.
5. Revised Community Facilities pavilion on the western edge of the Level 07 podium including a roof top terrace.
6. Revisions to the north elevation of Building C to improve ADG compliance.
7. Revisions to the west elevation of Building A to improve ADG compliance.

This report addresses the sustainability strategies associated with the new work.

There are four key sustainability requirements that form part of this planning approval:

- Condition 11 of the Concept Approval Plan.
- Volume 2 Appendix R of the Environmental Assessment report.
- Also the requirements from Condition 29 of the Stage 1 approval are relevant to this planning submission.
- SEAR's Section 75W of the Environmental Planning and Assessment Act 1979.

2.1 Condition 11 of the Concept approval

Condition 11 of the Concept approval states:

Future applications shall demonstrate the incorporation of ESD principles in the design, construction and ongoing operation phases of the development, including the selection of fabric and materials, water conservation and management initiatives, and energy efficiency and renewable energy initiatives

2.2 Volume 2 Appendix R of the Environmental Assessment report

Volume 2 of Appendix R of the Environmental Assessment report states:

Future applications for development shall address the environmental performance targets outlined in the Executive Summary to Cronulla Sharks Redevelopment ESD DA Report prepared by Cundall (Appendix R of Environmental Assessment Report)

2.3 Condition 29 of the Stage 1 Approval

Condition 29 of the stage 1 approved residential works lists the following ESD measures shall be incorporated into the design which we believe are relevant to parts of the Stage 4 Residential/Hotel work:

1. Implementation of energy monitoring systems to enable each household to track energy usage.
2. Commitment to the use of appropriate and sustainable materials such as FSC Forestry Stewardship Council certified timber.
3. Incorporation of Photovoltaic Cells to power services provided within the communal areas, to the maximum capacity permitted by the available roof areas.

2.4 SEAR's

The SEAR's Section 75W of the Environmental Planning and Assessment Act 1979 for application MP 10_0229 (MOD 2) states the following key sustainability requirement under point 12. Ecologically Sustainable Development (ESD).

The EA shall:

- Identify how best practice ESD principles will be incorporated in the design of the development, and include innovative and best practice proposals for environmental building performance.

This report includes a response to all of the above requirements.

3 ESD strategy

The following table summarises environmental performance targets for the project referenced to Volume 2 of Appendix R[#] of the Environmental Assessment report:

ESD item *(#referenced to Vol 2. Appendix R)*	Benchmark	Minimum code requirement	Project target	Project examples
Passive Design	Residential: BASIX heating/ cooling load target	Meet BASIX average and individual targets.	Improve on BASIX targets for heating and cooling loads.	- The project has targeted a 10% improvement on the average BASIX comfort assessment. - This will be achieved by appropriate external shading, glass and insulation selection.
	Hotel: NCC Section J for building fabric	Meet Section J requirements for building fabric.	Meet Section J requirements for building fabric.	- This will be achieved by energy efficient facades with awnings/ shading where appropriate and high levels of thermal insulation. The option of providing operable windows for hotel rooms will be considered with the Hotel operator.
Water	Residential % reduction compared to NSW average	40%	40%	- Water efficient appliances are used throughout for WC flushing, WHB's, showers and dish washers. - Rainwater recycled for irrigation. - Air cooled air conditioning.
	Hotel	n/a	Minimise water consumption in fittings/fixtures, cooling towers and irrigation.	- Water efficient appliances throughout. - Rainwater recycled for irrigation.

ESD item *(#referenced to Vol 2. Appendix R)*	Benchmark	Minimum code requirement	Project target	Project examples
				- Water monitoring/ sub metering of major base building water sources. - Monitoring of base building water systems.
GHG Emissions	Residential: % reduction compared to NSW average	20%	20%	- Gas fired hot water and high efficiency heat pumps for pools. - Energy efficient dish washer and dryer. - High efficiency inverter driven split system AC. - Low e glazing where required. - Fluorescent lighting and LED lighting throughout. Common area lighting to be activated by occupancy sensors. - Roof top solar panels feasibility assessed to offset common area lighting energy consumption. - Smart energy meters provided to all apartments.
	Hotel: NCC Section J for services	Meet Section J requirements for services efficiency.	Exceed Section J requirements.	- Central chilled water system to be made available to the hotel. - Natural daylight and mixed mode ventilation opportunities for common areas. - Efficient LED and fluorescent lighting to 80% of all light fittings. Lighting controls to

ESD item *(#referenced to Vol 2. Appendix R)*	Benchmark	Minimum code requirement	Project target	Project examples
				respond to daylight levels and occupancy. - Roof top solar panels feasibility assessed to offset common area lighting energy consumption. - Developer to work with the hotel operator to assess feasibility of solar hot water for the hotel and mixed mode ventilation for hotel rooms.
Indoor Environmental Quality	Varies	SEPP65 requirements for amenity including solar access and cross-ventilation.	Improve indoor environmental quality including daylight, acoustics, thermal comfort, views, glare control and air quality.	- The hotel design will consider options to introduce daylight into the common areas to improve daylight quality and reduce the energy consumed by lighting. - A mixed mode ventilation strategy for the common areas to introduce natural ventilation into the building when the conditions outside are acceptable. - Use of low VOC materials for paints, sealants and carpets where applicable.
Materials	Average NSW data on embodied energy	None	Reduce embodied energy in construction materials by careful selection.	- The materials strategy is to list the top ten materials used on the project via weight and then assess the embodied carbon associated with these materials and consider alternatives that have a lower embodied content. The materials

ESD item *(#referenced to Vol 2. Appendix R)*	Benchmark	Minimum code requirement	Project target	Project examples
				already considered include: 1. The floor finishes. 2. Cement reduction within the concrete. 3. Recycled content of the steel. 4. Recycled timber components. Any timber used on the project will be sourced from a recycled source or shall be FSC certified timber. 5. Opportunities for reduced materials in modular design of hotel.
Waste	% diverted from landfill	None	Implement best management practice in design, construction and operation.	The developer will work with the waste contractor to aim to achieve an operational waste reduction of 80% going to land fill. This will be achieved by: - The two loading docks will share waste recycling facilities which will house garbage and also separate bins for mixed containers and hard waste. - Establishment of periodic waste audits, keeping records, and monitoring of the quantity of recyclables found in landfill-bound bins and sharing results with users/staff. - A training program for tenants will be established to promote waste

ESD item *(#referenced to Vol 2. Appendix R)*	Benchmark	Minimum code requirement	Project target	Project examples
				recycling as far along the custody chain as possible. Actual operational waste performance information will be shared with the tenants.
Management	n/a	None	Implement best management practice in design, construction and operation.	- The sustainability targets and strategies to achieve these targets will be summarised in a Sustainability Management Plan (SMP) during the design development, construction and operational stages of the project. - Clear, defined and measurable KPI's will be established within the SMP for each of the sustainability categories in this table. - The SMP will be a live document that is updated with the progress of the development of the sustainability strategies.
Ecology	Varies	Preserve the sites high ecological value.	Please refer to report by Eco Logical Australia.	Refer to report by Eco Logical Australia
Transport	Varies	Minimum bicycle parking requirements.	Target minimum 5% of trips by bicycle, walking or public transport.	The development will promote sustainable forms of transport across the precinct. This has included sufficient cycle spaces with dedicated cycle lanes, preferential car spaces for small cars with a number of electric car spaces.

4 Conclusion

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