

Fitzpatrick Property

SOPA Site 8B

DA Report

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Arup
Arup Pty Ltd ABN 18 000 966 165



Arup
Level 10 201 Kent Street
Sydney NSW 2000
www.arup.com

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1 Introduction

1.1 Aim of Report

This report has been prepared for DA stage to give an indication of the sustainability merits of the proposed Site 8B in the Sydney Olympic Park Precinct.

1.2 The Building

The Site 8B building will commit to a number of sustainability targets which are covered in this report. There are specific targets such as the reduction in potable water, targets which refer to the building in operation, such as NABERS Energy targets; and there are targets which refer to a holistic environmental measure such as Green Star.

1.3 Summary of Building Sustainability Targets

In summary, the sustainability commitments for Site 8B are:

- 5 Star Office Design – to recognise the building's sustainability design
- A minimum NABERS Energy base building rating of 4.5 Stars
- No potable water will be used for non-potable water uses
- Potable water usage will be reduced by 20% as a minimum
- Cyclist facilities for a minimum of 10% of staff
- Incorporate areas dedicated to waste separation and waste recycling
- Reuse and recycle a minimum of 80% of all construction waste
- Use of low toxic materials in the indoor environment

The report will go into more detail about the implications of these targets.

2 Industry Benchmarking

The building is committed to achieving certification under a number of industry rating tools.

2.1 Holistic Benchmarking

The building will be designed to achieve a 5 Star Green Star rating, administered by the Green Building Council of Australia. This rating represents “Australian excellence”.

Green Star is the industry recognised holistic rating tool in Australia for Green Buildings and addresses a series of categories including management, indoor environment quality, energy, water, materials, transport, land use and ecology, emissions and innovation.

The building will head for one Green Star certification:

- 5 Star Office Design – to recognise the building’s sustainability design

A preliminary assessment of Green Star targeted credits has been carried out and is attached in Appendix A.

2.2 Energy Benchmarking

The building will be designed to achieve a rating of 4.5 Stars under the NABERS Energy scheme, which is a national energy scheme administered by the NSW Government that recognises energy consumption of buildings whilst in operation.

The building will be head for:

- NABERS base building rating of 4.5 Stars or better

3 Energy

3.1 Passive Design

A number of passive design initiatives will be considered to improve comfort and reduce the energy consumption of the building by harnessing what is available in the external environment and working with (not against) it. This includes initiatives such as:

- Harnessing Sydney daylight – this involves using daylight to light the office space. Design will balance daylight penetration with glare and solar gain. Compared to many areas around the world, Sydney has substantial levels of daylight.
- Shading – shading on a building provides numerous benefits which include the control of solar gain and direct sun in workspaces which could cause glare.
- Reducing the amount of glazing – the East and West facades do not have exposed glazing due to site constraints. These are the facades which normally offer the highest heat gain and usually are difficult to control thermally.

3.2 Building Services Design For Low Energy

Alongside passive design, the building's building services are instrumental in its energy consumption:

- The air conditioning system will be a low energy design which will provide comfort to the occupants in the workspaces.
- Artificial lighting design will target a maximum energy efficiency whilst considering visual comfort and providing adequate office lighting levels
- Controls - controlling the operation of mechanical plant or artificial lighting is of crucial importance to achieve maximum efficiency and the full benefits of design
- Metering and sub-metering will be included in accordance with Green Star requirements to enable consumption of various uses and areas to be monitored
- Tenant engagement will also be considered in order to encourage their efficient operation of the building

4 Indoor Environment Quality

Indoor environment quality is crucial in an office building where occupants spend most of their day. The following initiatives are targeted for the Site 8B building:

- Daylight glare control through the use of shading and blinds
- Use of low toxic materials in the indoor environment such as low formaldehyde and low volatile organic compound products

5 Water

Potable water will be sourced from Sydney water mains

Non-potable water will be sourced from the SOPA Precinct recycled water facility so that no potable water will be used for non-potable water uses.

- Mains water usage will be reduced by approximately 20% through the use of recycled water for toilet flushing and irrigation

The strategies which will assist in achieving the above targets include:

1. Water efficient fittings – all fittings will target the highest practical WELS (Water Efficiency Labelling Scheme) rating
2. Rain and stormwater collection storage and reuse
3. Connection to a precinct blackwater recycling plant – this is a centralised precinct blackwater recycling plant which already exists in the SOPA precinct

6 Transport

The building will encourage cycling by providing:

- Cyclist facilities for a minimum of 10% of staff

Cyclist facilities include secure bicycle storage, shower and locker facilities.

7 Waste

The management of waste will consider target a reduction of waste going to land fill during construction and give future tenants the ability to sort and recycle waste. The building will:

- Incorporate areas dedicated to waste separation and waste recycling
- Reuse and recycle a minimum of 80% of all construction waste

8 Materials

The choice of materials for this building will consider:

- Use of timber from sustainable and certified sources
- A reduction in the use of materials made of PVC

As mentioned earlier, the use of low toxic materials in the indoor environment is also being considered.

A1 APPENDIX – PRELIMINARY GREEN STAR TARGETS

The following table shows a more detailed summary of preliminary Green Star credits which have been targeted.

They have been categorised into targeted (under the “points achieved” column) and points yet to be confirmed.

Green Star - Office Design v3					
Credit Summary for: Site 8B Olympic Park					
Category	Title	Credit No.	Points Available	Points Achieved	Points to be Confirmed
Management					
	Green Star Accredited Professional	Man-1	2	2	0
	Commissioning Clauses	Man-2	2	2	0
	Building Tuning	Man-3	2	2	0
	Independent Commissioning Agent	Man-4	1	1	0
	Building Users' Guide	Man-5	1	1	0
	Environmental Management	Man-6	2	2	0
	Waste Management	Man-7	2	2	0
	TOTAL		12	12	0
Indoor Environment Quality					
	Ventilation Rates	IEQ - 1	3	0	0
	Air Change Effectiveness	IEQ - 2	2	2	0
	Carbon Dioxide Monitoring and Control	IEQ - 3	1	0	0
	Daylight	IEQ - 4	3	0	1
	Daylight Glare Control	IEQ - 5	1	1	0
	High Frequency Ballasts	IEQ - 6	1	1	0
	Electric Lighting Levels	IEQ - 7	1	1	0
	External Views	IEQ - 8	2	1	0
	Thermal Comfort	IEQ - 9	2	1	0
	Individual Comfort Control	IEQ - 10	2	0	0
	Hazardous Materials	IEQ - 11	0	na	0
	Internal Noise Levels	IEQ - 12	2	0	2
	Volatile Organic Compounds	IEQ - 13	3	2	1
	Formaldehyde Minimisation	IEQ - 14	1	1	0
	Mould Prevention	IEQ - 15	1	0	0
	Tenant Exhaust Riser	IEQ - 16	1	0	1
	TOTAL		26	10	5
Energy					
	Conditional Requirement	Ene -	-	-	0
	Greenhouse Gas Emissions	Ene - 1	20	5	3
	Energy Sub-metering	Ene - 2	2	2	0
	Lighting Power Density	Ene - 3	3	3	0
	Lighting Zoning	Ene - 4	2	1	0
	Peak Energy Demand Reduction	Ene - 5	2	0	1
	TOTAL		29	11	4
Transport					
	Provision of Car Parking	Tra - 1	2	0	1
	Fuel-Efficient Transport	Tra - 2	1	1	0
	Cyclist Facilities	Tra - 3	3	3	0
	Commuting Mass Transport	Tra - 4	5	5	0
	TOTAL		11	9	1

Water					
Occupant Amenity Water	Wat - 1	5	5		0
Water Meters	Wat - 2	1	1		0
Landscape Irrigation	Wat - 3	0	na		0
Heat Rejection Water	Wat - 4	4	4		0
Fire System Water Consumption	Wat - 5	1	1		0
	TOTAL	11	11		0
Materials					
Recycling Waste Storage	Mat - 1	2	2		0
Building Reuse	Mat - 2	0	na		0
Reused Materials	Mat - 3	1	0		0
Shell and Core or Integrated Fit-out	Mat - 4	2	0		1
Concrete	Mat - 5	3	0		2
Steel	Mat - 6	2	0		1
PVC Minimisation	Mat - 7	2	1		0
Sustainable Timber	Mat - 8	2	1		0
Design for Disassembly	Mat - 9	1	0		1
Dematerialisation	Mat - 10	1	0		0
	TOTAL	16	4		5
Land Use & Ecology					
Conditional Requirement	Eco -	0	-		0
Topsoil	Eco - 1	0	na		0
Reuse of Land	Eco - 2	1	1		0
Reclaimed Contaminated Land	Eco - 3	2	2		0
Change of Ecological Value	Eco - 4	4	1		0
	TOTAL	7	4		0
Emissions					
Refrigerant ODP	Emi - 1	1	1		0
Refrigerant GWP	Emi - 2	2	0		0
Refrigerant Leaks	Emi - 3	2	0		0
Watercourse Pollution	Emi - 5	3	2		1
Discharge to Sewer	Emi - 6	5	4		0
Light Pollution	Emi - 7	1	1		0
Legionella	Emi - 8	1	1		0
Insulant ODP	Emi - 4	1	1		0
	TOTAL	16	10		1
Sub-total weighted points:					55
					13
Innovation					
Innovative Strategies & Technologies	Inn-1	2	0		0
Exceeding Green Star Benchmarks	Inn-2	2	0		0
Environmental Design Initiatives	Inn-3	1	0		0
	TOTAL	5	0		0
Total weighted points:					55
					13

The Green Star table indicates a total of 55 targeted points with 13 additional points which have yet to be confirmed.

To achieve a 5 Star Green Star rating, the building would need to be certified with at least 60 points achieved.

Therefore final certification will be a combination of both targeted and points yet to be confirmed.