

ANNEXURE G

ESD REPORT

Prepared by

CUNDALL

CUNDALL

June 2008

Site 13 SOPA ESD initiatives



Prepared for
AV Jennings

Prepared by
CUNDALL

Level 3, 33 – 35 Atchison Street
St Leonards NSW 2065
Phone: +61 2 8424 7000
Fax: +61 2 8424 7099

Please contact: [Tim Elgood](#)

Report No:		Revision:	C	Date:	04/06/08
Author: Tim Elgood Checked by: Hannah Morton Approved by: Marlon Kobacker					
Revision	Description				Date
A	Additional comments added				07/09/07
B	Revised comments				08/10/07
C	Revised comments				04/06/08
This report has been prepared in accordance with the terms and conditions of appointment. Cundall Johnston & Partners Pty Ltd trading as Cundall (ABN 16 104 924 370) cannot accept any responsibility for any use of or reliance on the contents of this report by any third party.					
The success and realisation of the proposed initiatives will be dependant upon the commitment of the design team, the development of the initiatives through the life of the design and also the implementation into the operation of the building. Without this undertaking the proposed targets may not be achieved.					

Contents

Executive Summary.....	4
1 Introduction.....	6
2 ESD initiatives.....	7
2.1 Management.....	7
2.2 Energy.....	7
2.3 Indoor environment quality	7
2.4 Water.....	8
2.5 Transport.....	8
2.6 Materials.....	8
2.7 Innovation options.....	8
3 Delivery of ESD strategies.....	8
4 AV Jennings Commitment to Delivering Sustainability	8

Executive Summary

The following report provides a summary of the ESD initiatives being developed for the Site 13 commercial development at Sydney Olympic Park. As a summary the building and services have been designed to achieve:

1. 4 Green Star *Design* rating prior to construction (version 3).
2. 4 Green Star *As Built* rating during the construction period (version 3).
3. 4.5 star ABGR (NABERS) rating for the base building systems

Formal certification of the Green star rating and the ABGR (NABERS) rating will be carried out with the relevant authorities to ensure that targets are achieved throughout design, construction and operation.

The following key ESD initiatives are being developed:

1. **Façade optimisation:** Extensive solar shading has been provided throughout the building to improve occupant amenity and to assist in achieving the Green Star and ABGR ratings. This extensive shading means that the internal blinds within the building will only be pulled down approximately for 50% of the time in comparison to a standard building providing improved views, daylight and comfort.
2. **Reductions in air conditioning:** The option of developing a mixed mode ventilation system for the entire lobby space has been considered and will be developed further. The option of heating the space via pipework in the floor slab supplied by condenser water that will circulate heat that would normally be rejected out the cooling towers. Natural ventilation louvers could provide fresh air provided a mixed mode strategy with heating from a recycled source.
3. **Thermal Stack Ventilation:** The floor plates consist of a series of meeting room / breakout spaces which has the option of developing a design that can achieve high levels of natural ventilation. A series of the thermal stacks have been integrated into these spaces to provide improved fresh air movement even on still days. The thermal stacks have been designed to heat up at roof level to provide- the air expands and rises pulling in fresh air through the air inlets.
4. **Recycled Water:** The site wide WRAMS system will supply recycled water to the cooling towers and all other non potable sources. Water efficient appliances are being used throughout.
5. **Air conditioning:** The AC system has been designed to achieve the 4.5 star ABGR rating and will be a low temperature/ low flow VAV system with swirl diffusers to improve air distribution. The low temperature VAV system means that lower quantities of supply air are required therefore reducing fan power considerably.

6. **Materials:** Low VOC materials will be considered throughout as well as reducing PVC. AV Jennings will be using the Green Star interiors tool to ensure that their own fit out achieves high levels of sustainability.

The ESD strategies will be developed further and will be delivered via the use of an Environmental Management Plan which will be developed and issued for the DA and amended for the construction and operational periods of the project.

1 Introduction

Cundall have been working with AV Jennings to develop the sustainability strategies for the proposed commercial building on Site 13 at Sydney Olympics Park.

The proposed building demonstrates an integrated approach to sustainability. This document provides a summary of the proposed ESD strategies that complies with the requirements of the Sydney Olympic Park Masterplan and the principles outlined with the Sydney Olympic Park Authority's sustainability framework.

The proposed development will achieve:

1. 4 Green Star *Design* rating prior to construction (version 3).
2. 4 Green Star *As Built* rating during the construction period (version 3).
3. 4.5 star ABGR rating for the base building systems (version 3).

The development team are committed to adhering to the principles of sustainability as defined in the Local Government Act 1993. The design construction and operation of the building will be undertaken in accordance with SOPA's Environmental Guidelines referenced in the following documents:

- SOPA Towards Sustainability- Sustainability Strategy for Sydney Olympic Park December 2002 and,
- The Environmental Guidelines for the Summer Olympic Games September 1993.

2 ESD initiatives

The following table summaries the key ESD initiatives. These initiatives will be developed further and are subject to change depending on the final feasibility. Regardless of any changes the ESD targets of 4.5 star ABGR and 4 Green star will be achieved. The aim is to achieve a high 4 star rating of 55 points.

ESD indicator	ESD strategy
2.1 Management	<ul style="list-style-type: none"> 80% waste recycling during construction. Commissioning management plan. Development of a design, construction and operational environmental management.
2.2 Energy	<ul style="list-style-type: none"> 4.5 star ABGR rating. Centralised VAV system with high efficiency chillers and boilers. In slab heating via condenser water for the ground floor slab being considered as an option. Mixed mode ventilation via operable louvers for the lobby spaces being considered as an option. Mixed mode ventilation for the breakout spaces thermal ventilation stacks. Natural ventilation to the car park where possible.
2.3 Indoor environment quality	<ul style="list-style-type: none"> 50% more fresh air via AC system. Low e glass with high visual light transmission. Extensive external shading throughout. T5 high frequency lighting throughout.

ESD indicator	ESD strategy
2.4 Water	<ul style="list-style-type: none"> • WRAMS water for all non potable requirements. • Low flow fixtures and fittings throughout.
2.5 Transport	<ul style="list-style-type: none"> • Adequate spaces for smart cars and cycle facilities. • Adequate changing and shower facilities.
2.6 Materials	<ul style="list-style-type: none"> • Reduced use of PVC. • Recycled material content within concrete. • Recycled material content within steel.
2.7 Innovation options	<ul style="list-style-type: none"> • Waste heat used for inslab heating in the lobbies being considered as an option. • Thermal stacks for mixed ventilation.

3 Delivery of ESD strategies

The ESD strategies will be developed further and will be delivered via the use of an Environmental Management Plan which will be developed and issued for the DA and amended for the construction and operational periods of the project.

4 AV Jennings Commitment to Delivering Sustainability

AV Jennings are committed to achieving the SOPA requirements for a 4.5 star ABGR rating and a 4 Green Star rating but reserve the right to modify strategies during the design development stage of the project whilst but still achieving the same sustainability targets.