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# SITE YP SYDNEY OLYMPIC PARK DEVELOPER'S ESD PRINCIPLES

FDC CONSTRUCTION & FITOUT (NSW) PTY LTD

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FDC CONSTRUCTION & FITOUT (NSW) PTY LTD

WSP LEVEL 27, 680 GEORGE STREET SYDNEY NSW 2000 GPO BOX 5394

SYDNEY NSW 2001 TEL: +61 2 9272 5100

FAX: +61 2 9272 5101 WSP.COM

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# **1 PROJECT BACKGROUND**

The current unoccupied site adjacent to Cathy Freeman Park will be developed as licensed premises, incorporating two levels of food and beverage space, a rooftop terrace with bar and provision for adjacent occasional open air events. The proposed design is the result of design competition process, and therefore will express and seek to retain unique aspects of its design intent.

The proposed development responds to Environmental Guidelines prepared by Sydney Olympic Park Authority (SOPA). In fulfilment of the Agreement For Lease (AFL), a statement of Developers' ESD Principles to be met in the proposed design is required new works proposed under a lease with SOPA. Once approved, the developer must comply with the ESD Principles to meet its obligation under the lease.

# 2 SUSTAINABILITY OBJECTIVES & INITIATIVES

The Environmental Guidelines for Sydney Olympic Park 2008 describe key objectives for sustainability. The Developers' ESD Principles are encapsulated in responses to the objectives as ESD initiatives in the following sections.

The categories described in the Environmental Guidelines for Sydney Olympic Park 2008 represent a holistic response to environmental concerns broadly aligned to those of the Green Star Tools.

## 2.1 WATER CONSERVATION

#### SOPA OBJECTIVES FOR WATER CONSERVATION

- 1 Minimising overall public domain water use at Sydney Olympic Park (potable and non-potable water) using best practice environmental design principles, innovative technology, water sensitive urban design, water efficient landscaping and other demand management practices;
- 2 Requiring all new developments to maximise opportunities for building and infrastructure design to incorporate water collection and recycling systems;
- 3 Avoiding adverse impacts on water quality or quantity in local streams, wetlands and groundwater from operations, developments, and major event activities at Sydney Olympic Park; and
- 4 Working with lead agencies in the promotion of sustainable water resource management practices through integration of water infrastructure, sharing knowledge and experience, and supporting education and research programs.

#### ESD INITIATIVES FOR WATER CONSERVATION

Water conservation objectives will be met through water management leveraging water efficient solutions and recycled water from the SOP Water Reclamation and Management Scheme (WRAMS). The design will mitigate water consumption while delivering a high amenity and water efficient development.

- 1 Efficient fixtures and fittings for amenities, nominating an appropriate WELS rating for toilets, taps, shower heads and urinals to assist with achieving a minimum 55% reduction in potable water usage.
- 2 Net increase in roof area on the site and net decrease in hardstand area results in overall improvement in water quality for stormwater leaving the site.
- 3 Water sensitive landscape and irrigation design
- 4 Non-potable water will be used for toilet and urinal flushing, landscape irrigation and wash down /cleaning purposes, sourced from the WRAMS precinct-scale recycled water provision

## 2.2 ENERGY CONSERVATION

#### SOPA OBJECTIVES FOR ENERGY CONSERVATION

- 1 Minimising overall public domain energy and peak load demand levels at Sydney Olympic Park.
- 2 Prioritising in developments the use of passive solar design, natural ventilation and selection of energy efficient materials to enhance thermal performance.
- **3** Requiring energy-efficient: heating and cooling systems, building management systems, lighting, and energy consuming appliances to be incorporated in all new building projects at Sydney Olympic Park.
- 4 Adapting and applying best available environmental design principles, technology, demand-management, and procurement practices to progressively and significantly reduce greenhouse gas emissions.

#### ESD INITIATIVES FOR ENERGY CONSERVATION

The SOPA energy conservation objectives will be met through:

- 1 Embedding passive design to mitigate energy consumption through façade and fabric, including:
  - **a** Skylights creating natural light opportunities to take advantage of amenable conditions and periods of suitable occupancy.
  - **b** Provision of naturally conditioned rooftop patron area reducing the energy intensity of the site for the predicted level of occupancy.
- 2 Efficient energy management strategy, implementing energy monitoring and control systems
- 3 Efficient building envelope design to minimise heating and cooling demands for the conditioned spaces
- **4** Efficient VRF HVAC and low energy intensity lighting systems to deliver operational energy efficiency.
- 5 Energy efficient cool-room design and system provision.
- 6 Efficient hot water system design using central storage with review for solar pre-heat and gas boost.

## 2.3 MATERIAL SELECTION

#### SOPA OBJECTIVES FOR MATERIALS

- 1 Considering whole-of-life impacts on the environment when selecting materials for development and operations;
- 2 Prioritising the selection of natural non-toxic materials such as natural fibre insulation, and non-toxic paints, glues, varnishes, polishes, solvents and cleaning products;
- 3 Maximising the use of recycled and recyclable materials in developments and operations, including for consumer packaging;
- 4 Encouraging material re-use for major event overlay (design for disassembly and re-use);
- 5 Prioritising non-use of chlorine, fluorine and hydrogen based carbon gases and promote as alternatives the use of non-ozone depleting, non-greenhouse warming gas refrigerants in construction, major events and other operations;
- 6 Minimising the need for use of chemical control of weeds, pests and diseases -maximising opportunities for integrated control methods;
- 7 Minimising the use of known environmentally damaging or unhealthy products such as chlorine based products and chlorine bleached paper, and completely avoiding products that include toxic substances such as some treated timber products; and
- 8 Prioritising the use of low impact timber products including low emission composite timber in construction and major event overlay activities, and timber from managed sustainable sources (verifiable where possible via a chain of custody process) ensuring no imported or local rainforest timber is used in developments or other activities.

#### ESD INITIATIVES FOR MATERIALS SELECTION

The SOPA material selection objectives will be met through strategies for reducing the resource consumption in materials:

- **1** Design optimisation to mitigate demand for building materials and efficient ordering practices during construction to avoid on-site surpluses and wastage.
- 2 Substitution of conventional materials for lower impact alternatives where appropriate (concrete, recycled content in steel, PVC and timber) and preference for lightweight materials selection.
- 3 Low emitting materials are to be used including paints carpets and engineered wood products.
- **4** VRF HVAC system provides high levels of control while efficiently meeting capacity, providing good thermal comfort performance.

Sustainability principles will be embedded in procurement, with supply chain certification for key steel, timber and best practice PVC.

## 2.4 WASTE MANAGEMENT

#### SOPA OBJECTIVES FOR WASTE MANAGEMENT

- 1 Maximising appropriate opportunities to increase the proportion of recycling for waste produced in the public domain including green waste collection, re-use, and composting;
- 2 Requiring waste management performance and recycling targets for all developments throughout design, construction and operational activities, with a minimum of 80 percent of construction and demolition waste to be recycled or re-used for each development;
- 3 Encouraging public domain concessionaires and service providers to minimise where practical the packaging of foodstuffs for visitor consumption, and otherwise to use non-toxic, recyclable, and biodegradable packaging and materials for their products;
- 4 Educating visitors, workers and residents regarding waste minimisation and management issues, and working in cooperation with venues and businesses to minimise waste generation and maximise recycling of materials; and
- 5 Maximising appropriate opportunities to improve the sustainability of leachate treatment and disposal methods.

#### ESD INITIATIVES FOR WASTE MANAGEMENT

The SOPA waste management objectives will be met through:

- 1 Best practice environmental management in construction
- 2 Establishment of a construction and operational waste management strategy, Waste strategy will aim to maximise diversion of waste from landfill, through effective recycling of the waste streams to be generated on site, best practice waste system provisions for effective and amenable management of operational waste, and provisions for monitoring and review of the waste strategy.
- 3 Amenities will use contemporary high efficiency air hand dryers, eliminating paper towelling waste from the site's facilities.

## 2.5 TRANSPORT

#### SOPA OBJECTIVES FOR TRANSPORT

- 1 Establishing Sydney Olympic Park as a destination where the option for travel by public transport is well supported for event patrons and commuters; and transport plans include strategies to reduce car dependency.
- 2 Applying 'demand management' techniques (including integrated ticketing, car-parking controls, priority bus lanes, etc.) that encourage public transport use and discourage excessive road based private transport accessing Sydney Olympic Park particularly during peak commuter times and major events periods.
- 3 Coordinating appropriate road traffic and public transport infrastructure improvements and refinements to reflect changes in the form and function of Sydney Olympic Park and evolving community attitudes to more sustainable transport options.
- **4** Promoting and supporting innovative transport modes, sustainable transport technologies, and the use of alternative fuels.
- 5 Designing new developments at Sydney Olympic Park to be as 'walkable' as possible, connecting transport nodes to walk-ways and cycle-ways, and ensure cycle-ways accommodate the needs of recreational cyclists, pedestrians and workplace commuters.

#### **ESD INITIATIVES FOR TRANSPORT**

The SOPA transport objectives will be met through:

- 1 Taking advantage of Sydney Olympic Park's rail connectivity, with the site near to Sydney Olympic Park Station and effective connections to Sydney CBD and metropolitan locations.
- 2 Integration with the public domain, pedestrian connections and cycle infrastructure
- 3 Hub location of the site takes advantage of interchanging modes of mobility, including local business and event patrons able to reach the site by foot without additional vehicle trips, transfers between bus, train and road connections and casual traffic from visitors traversing the SOP site for activity and leisure.
- 4 Active living is supported through proximity to parklands and sports facilities, cycleways and extensive pedestrian precincts.
- 5 With no onsite parking, use of public transport and active mobility options is encouraged, with ample opportunity for walking and cycle access to the site across the greater SOP site.

## 2.6 POLLUTION CONTROL

#### SOPA OBJECTIVES FOR POLLUTION CONTROL

- 1 Complying with all relevant statutes and regulatory requirements;
- 2 Minimising light pollution by limiting use of lights at inappropriate times, locations, and intensities; and avoiding loss of habitat values or natural ambience for open spaces;
- **3** Promoting the design and physical construction of new buildings so that they mitigate environmental impacts associated with major events;
- 4 Managing remediated landfills and leachate systems to ensure their integrity is maintained, human health and the environment is protected, and statutory compliance is achieved;
- 5 Ensuring development, operations, and event activities do not adversely impact on the water quality of wetlands and watercourses; and
- **6** Validating all soils and 'fill' materials proposed to be imported into Sydney Olympic Park, and reject those that are not free from contamination.

#### **ESD INITIATIVES**

The SOPA pollution control objectives will be met through extensive water sensitive design supporting best practice stormwater management with additional quantity and quality control being achieved via conventional below-ground systems. Light pollution will be mitigated by avoiding lights directed into the night sky and potential Legionella risk mitigated through air-cooled HVAC equipment. This will be achieved through:

- 1 Refrigerants and insulants specified will have zero Ozone Depleting Potential (ODP)
- 2 A reduction in stormwater and discharge to sewer will be realised through inclusion of efficient water fittings and fixtures, and through connection of outflow to the WRAMS recycled water scheme.
- 3 As noted for Water Conservation initiatives, there is a net increase in roof area on the site and net decrease in hardstand area, resulting in overall improvement in water quality for stormwater leaving the site. Connection of suitable stormwater to WRAMS will return capacity for recycling, to balance non-potable demand from the site for amenities and other facility connections.

## 2.7 **BIODIVERSITY**

SOPA describes their biodiversity objectives as follows:

#### SOPA OBJECTIVES FOR BIODIVERSITY

- Protecting and enhancing the natural heritage and ecological integrity of Sydney Olympic Park targeting priority species and communities, places of high biodiversity value, and biodiversity generally; (b) Applying an adaptive management approach to stewardship of Sydney Olympic Park's biodiversity assets;
- 2 Ensuring conservation of biological diversity and ecological integrity is a fundamental consideration for new developments, activities, levels or types of use, or management practices that affect the ecosystems of Sydney Olympic Park;
- **3** Promoting the ecological, aesthetic and educational value of an urban site with high species diversity and abundance;
- 4 Conserving and enhancing the remnant woodland and wetland habitats of Newington Nature Reserve in accordance with the Newington Nature Reserve Plan of Management, and managing adjoining lands in sympathy with the Reserve; and
- 5 Maximising the habitat values of native plantings by promoting priority species and communities, providing structural complexity and plant species diversity, avoiding habitat fragmentation; promoting habitat linkages and large core areas; and prioritising the use of indigenous species in landscape planting schemes in the Parklands.

#### ESD INITIATIVES FOR BIODIVERSITY

The SOPA biodiversity objectives will be met through balanced landscaping emphasising low water use with high ecological return.

Site YP will integrate a sustainably ecological approach in its design through careful plant selection and thoughtful landscaping, prioritising locally indigenous species and encouraging biodiversity through species selection.

Further:

- 1 It is assumed the site is not located on wetland or where there are rare, threatened or vulnerable flora or fauna on site;
- 2 Where productive topsoil exists on site, there will not be a net change in the volume of topsoil on the site; and 95% of all topsoil (by volume) is to retain its productivity. As existing hardstand, there is expected to be minimal net impacts on productive topsoil.

### 2.8 PUBLIC OPEN SPACE

#### SOPA OBJECTIVES FOR PUBLIC OPEN SPACE

- 1 Promoting and increasing the recreational, historical, scientific, educational and cultural values of the parklands, while recognising the intrinsic values of public open space in addition to its utility services values;
- 2 Encouraging the appropriate use, benefit and enjoyment of the parklands by the public, facilitating opportunities to improve physical health and well-being, social cohesion, cultural expression, and a diversity of leisure experiences;
- 3 Maintaining public access to the parklands whilst ensuring the protection, restoration, and improvement of the environmental features, heritage items, and ecological elements;
- 4 Ensuring wherever possible that spaces are used and managed in such a way that both the land and its natural resources (including water, soil, flora, fauna and scenic quality) are sustained in perpetuity; and
- 5 Protecting and enhancing the natural and cultural (Aboriginal and non-Aboriginal) heritage of the Park, particularly the Parklands;
- **6** Giving priority to multi-use of places and spaces, and avoiding where possible the occupation or disposal of public open space for purely private purposes.

#### ESD INITIATIVES FOR PUBLIC OPEN SPACE

1 The site's connection and interface with Cathy Freeman Park will encourage use of and add amenity to the adjacent public open space.

# **APPENDIX A** DESIGN PHASE FLOWCHART – IMPLEMENTATION OF ESD PRINCIPLES

Licensed Premises Site YP, Sydney Olympic Park

