Government Property NSW

The Sandstone Precinct

ESD Report

ESD

Rev A | 27 November 2014

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 601597-xx

Arup
Arup Pty Ltd ABN 18 000 966 165

Arup
Level 10 201 Kent Street
PO Box 76 Millers Point
Sydney 2000
Australia
www.arup.com

ARUP

Contents

1 Introduction

Government Property NSW (GPNSW) understands the importance of ecologically sustainable development (ESD) and is keen for it to play an important role in shaping the redevelopment of the Sandstone Precinct. At this stage of the project cycle, the focus is for setting in place frameworks that will ensure that the core principles of ESD are implemented as part of the future development.

The key task in achieving this approach is providing the eventual developer with the instruments to both review and rate their proposal for the adaptive re-use of the site. Prescriptive ESD design features are eschewed to allow better integrated ESD outcomes.

Given the current site conditions, a number of excellent ESD features are inherently integrated into the precinct. This document thus sets out the proposed ESD framework for review of the development, and highlights the fundamental sustainability features which have already been realised.

2 Ecologically Sustainable Development

2.1 Definition

The Australian Government formalised the term ecologically sustainable development in their ESD National Strategy of 1992 as:

Development that improves the quality of life both now and in the future, in a way that maintains the ecological processes on which life depends.

As part of the strategy they recognised that there is no single definition for ESD and that the focus should be on intergenerational equity of environment, economy and society. In developing the ESD Strategy for the Sandstone Precinct, each element is tested against both the definition and the intent. Although not strictly equivalent, in this document the terms ESD and sustainability are used interchangeably.

2.2 Principles of ESD

As part of the State government, GPNSW is keen for the development to be progressed according to the Principles of ESD, as stated by The Hon. Justice Brian J Preston (2006). These principles include application and understanding of:

1. Principle of sustainable use
2. Principle of integration
3. Precautionary principle
4. Inter-generational and intra-generational equity
5. Conservation of biological diversity and ecological integrity
6. Internalisation of external environmental costs

Each of these principles has a scope of coverage which extends well beyond that of a typical development such as the Sandstone Precinct. However, it is envisaged that these principles should be an overarching guide for the future developer of the precinct.

3 Context

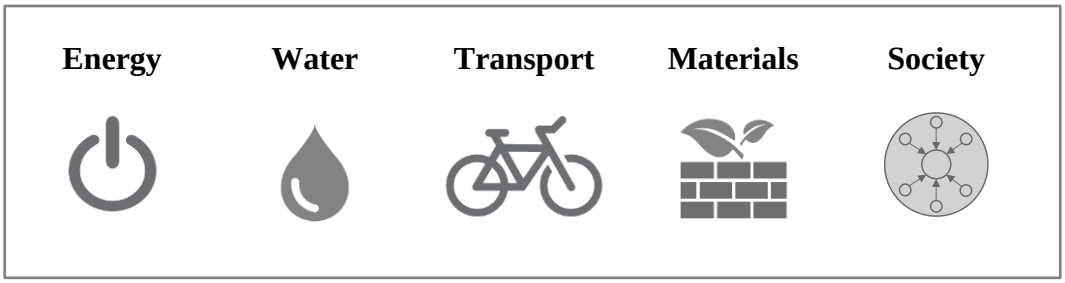
In developing the ESD Strategy, Government Property NSW has reviewed planning controls to identify how the development can be closely integrated. Key documents that have been referenced in the development of the proposed ESD Strategy include:

- City of Sydney – Development Control Plan 2012
- New South Wales Government – Local Environmental Plan 2012
- City of Sydney – Sustainable Sydney 2030: The Vision

Elements from each of these documents have been integrated to ensure that the development approach is synergistic. In addition, sustainable development rating tools such as Green Star and NABERS have been reviewed to identify appropriate metrics and frameworks for integrating sustainability into the development.

4 ESD Focus Areas

At a high-level, a number of key ESD focus areas have been identified for the adaptive re-use of the Sandstone Precinct buildings. These respond to both the planning context and the GPNSW aspirations for the future use of the precinct. Each of these focus areas is addressed in separately in the following sections. Each section highlights of the current ESD initiatives, aspirations for the proponents to incorporate, and simple frameworks that can be used to drive the ESD Strategy.



4.1 Energy

- The existing heritage buildings that make up the Sandstone Precinct perform well in regards to NABERS Energy for Office (whole building rating). Given that the existing heritage façade elements will be retained as part of any new development, it is expected that the new development should attain similar benefits from the low window-to-wall ratio and high thermal mass. In addition, new plant installed as part of the development will be of higher efficiency than the existing based on the virtue of improvements in technology over time.
- As part of the next stage of development, it is expected that the proponent will investigate the sustainability developments of centralising HVAC and electrical plant for the two sites. The economies of scale provide by this would allow improve efficiency over stand-alone developments.
- Generally, the proponent will be expected to address energy sustainability issues through a scaled hierarchy of initiatives focussing on first reducing demands, then serving them passively, efficiently or by recycling, followed finally by renewables on site or offsetting. This approach diagram (shown as Figure 1) will allow the developer to review and rank proposed sustainability initiatives, enabling early identification of appropriate energy strategy pathways.

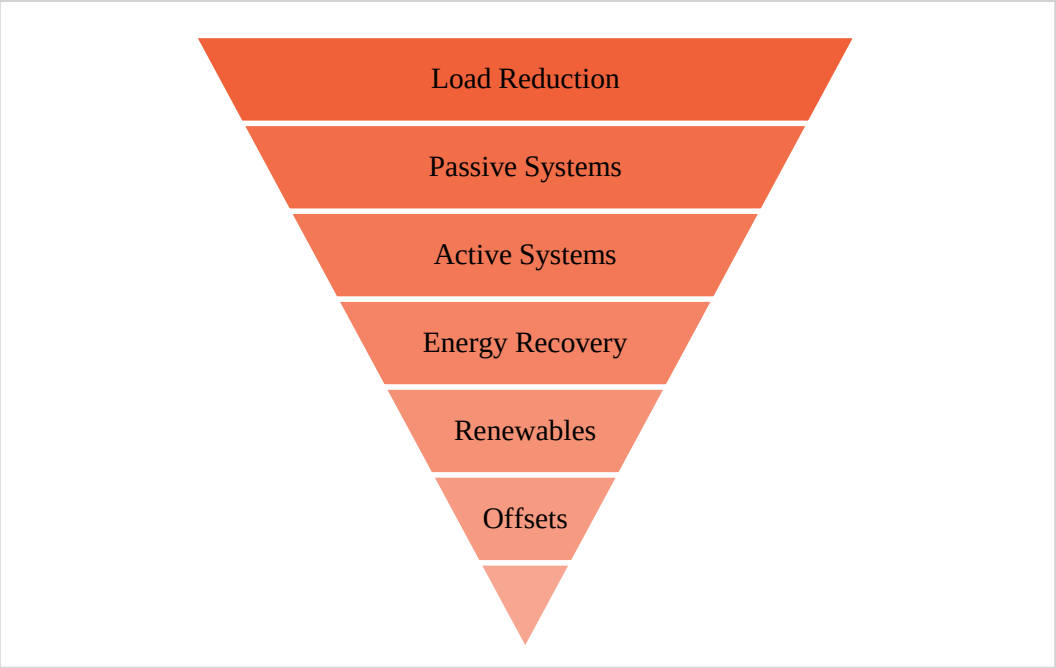


Figure 1 Energy Approach Hierarchy

4.2 Water

- Similar to energy, a focus on water efficiency will be prioritised, followed by technologies which reuse and recycle water. The overall approach is summarised in the following diagram.

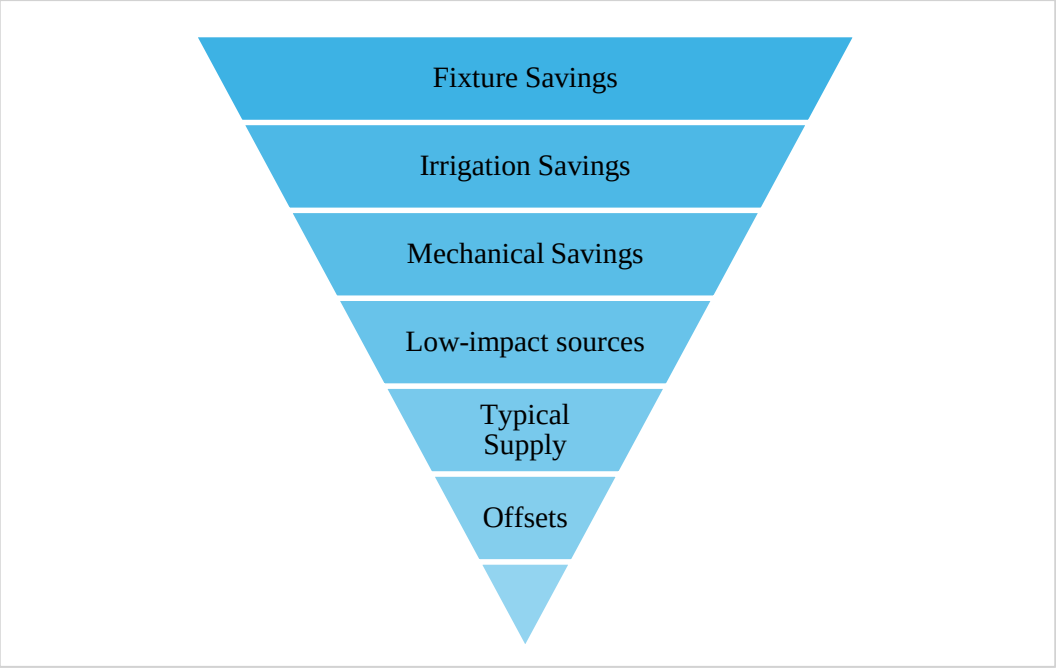


Figure 2 Water Approach Hierarchy

- Fixture and irrigation savings are focussed on providing water system components that use less water for the same amenity.
- Mechanical savings is about assessing water usage as part of air conditioning, primarily to do with cooling towers.
- Low impact sources alludes to rainwater capture and reuse with typical supply and offsets as the lowest priority.

- Rainwater capture and reuse will be investigated as a source for irrigation of landscape and plantings.
- Investigations will be made to identify opportunities for on-site water reuse of stormwater

4.3 Transport

- The Sandstone Precinct sits in the middle of one of the best served public transit corridors in Sydney. Buses, trains, ferries and in the future light rail are all easily accessible by foot from the precinct.
- It is envisaged that as part of the future design stages, the proponent will investigate options to utilise the abundant public parking infrastructure located around the precinct. The hotel usage will complement the current commercial office car park usage allowing better utilisation of existing infrastructure.

4.4 Materials

- The embodied energy and carbon associated with a building of this era is substantial. The adaptive reuse of building represents a significant step towards reduction in material usage.

- As part of their design, the proponents will look to maximise the reclaim of material, this will improve the overall material efficiency of the development while helping to maintain the architectural heritage of the buildings.

4.5 Societal

- Preservation of the existing heritage buildings is a strong contribution to the social sustainability of the local Sydney city community. The two buildings represent some of the best examples of Victorian (Lands Department Building) and Edwardian (Department of Education Building) architecture in the city. The development will reinvigorate, and open to the public a great community asset, making it a focus point for not only tourists but also local residents and workers.
- As part of the renovations of the buildings, the proponent will be encouraged to embrace the societal value of the asset by documenting the historical significance of the precinct. It is proposed that this information will be communicated to visitors as part of their visit to the precinct.
- The above elements of societal benefit are reinforced by the Conservation Management Plans (CMP) that have been prepared for the development. The eventual proponent will be required to reference the CMPs as part of their proposal.

5 ESD Strategy

The overall approach proposed in this document is focussed on providing appropriate frameworks for implementing ESD initiatives. Concentration on a framework approach means that the eventual developer will have the flexibility to apply the most appropriate ESD technologies.

Having said that, the proposed adaptive re-use does inherently have strong ESD underpinnings;

- Centrally located to public transport options,
- Adaptive reuse of heritage listed buildings,
- Updated services to already energy efficient buildings, and
- Restoration of a significant community asset.

The Sandstone Precinct Development will allow the ESD features noted above to be embraced and enhanced by use of the strategy noted in this document. The selected proponent for the eventual development will be enabled, through the frameworks provided, to achieve ESD outcomes that respond both to the local planning context and global trends.