



**PROJECT**  
**60-78 REGENT STREET**

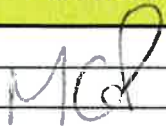
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**ESD REPORT**

**IGLU**  
**Client**

**EMF GRIFFITHS**  
**Sustainability Consultants**

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## SECTION 1 INTRODUCTION

EMF Griffiths have been engaged by Iglu Pty Ltd as the building services and sustainability consultants for this student accommodation project at 60-78 Regent Street, Redfern.

ESD, or environmentally sustainable design, has been described as:

‘...using, conserving and enhancing the community’s resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased’

Buildings consume 32% of the world’s resources, including 12% of the world’s fresh water and up to 40% of the world’s energy. Buildings also produce 40% of waste going to landfill and 40% of air emissions.

This report sets out to describe the building’s ESD initiatives to demonstrate inclusion of good practice sustainability initiatives.

## SECTION 2      ESD INITIATIVES

The regulatory framework applicable to this building type is outlined within Section J of the BCA, which describes the objective to reduce greenhouse gas emissions.

BCA Section J compliance for this project is being established using the JV3 methodology which ensures that that design of the building's passive thermal performance is optimised to suit its situation. This process will demonstrate that the building performs better than the minimum requirements of Section J.

The SEARs for this project reference BASIX, but this is not applicable to this type of building. However, specific measures have been adopted to ensure that the performance of energy and water efficiency is comparable to what would be required under BASIX.

These specific initiatives are described as follows:

- Energy efficient LED lighting
- Occupancy sensing and switching of lighting
- Facility to power-off unoccupied spaces
- Extensive electrical metering and monitoring
- High efficiency VRF air-conditioning system
- Centralised air-conditioning controls to turn off A/C systems after 2 hours run time and limit temperatures
- Low flow hydraulic fixtures
- High efficiency instantaneous gas hot water system
- Extensive water metering and monitoring

### SECTION 3 COMPLIANCE WITH PRINCIPLES OF SUSTAINABLE DEVELOPMENT

Sustainable development can be assessed against a number of key principles that address the wide range of sustainability that extends well beyond the standard inclusions of energy efficiency and water conservation.

This project's responds to the principles of sustainable development as follows:

**Principle 1**      Establish Agreed Sustainable Design Values

From the outset, the team have been collaboratively engaged in setting the ESD objectives. Through workshops and meetings, a Green Plan will be put into action that allows the ESD initiatives to be constantly reviewed and tracked.

**Principle 2**      An Integrated and Collaborative Design and Construction Process

The Green Plan process engages the design, management and construction team throughout the building delivery processes.

**Principle 3**      Design for the Local Environment

While responding sympathetically to the character of the neighbourhood, the contemporary design of this development nevertheless draws on the principles of passive building envelope design.

The façade design and selection of materials will be analysed using dynamic thermal modelling to resolve a solution that meets and exceeds BCA Section J requirements. This is addressed by optimised levels of insulation and glazing thermal properties.

**Principle 4**      Protect and Restore the Natural Ecosystems

The site is in the urban environment and has previously been built on, so opportunities for protection and restoration of natural ecosystems is limited.

However, concentrating residential units in a single building in the denser urban environment ensures a better outcome for the protection and restoration of natural ecosystems than building the same number of residential units on a greenfield site.

**Principle 5**      Utilise Land Appropriately

Located on the urban environment, the development type is ideally suited to this site.

- Combination commercial and residential uses allows for access to a wide range of building users, encourages activity at street level and integration of the development into the local community.
- The location encourages non car-based transportation and pedestrian use, which encourages community engagement with local businesses and facilities
- The design of the building exploits the possibilities for passive solar heating and cooling.

**Principle 6**      Integrated Water Management

An integrated water management strategy will be implemented with the aim of minimising water into and out of the site.

Strategy will include

- Water efficient fixtures and fittings
- Reducing the potable water associated with irrigation
- Extensive metering to allow usage to be monitored and managed.

Other water recycling and reprocessing options will be considered and judged on their merits.

**Principle 7**      Managing Energy Use

Preliminary energy modelling has been undertaken to ensure the development meets industry best practice standards of energy efficiency.

Orientation, shading and the building fabric ensure that supplementary heating and cooling of the building is minimised and the principles of passive solar heating and cooling are being exploited where possible.

Energy Use will be minimised via the use of

- Energy efficient lighting and a control system that ensures operational efficiency.
- Design to ensure good access to daylighting, plus management of electric lighting to maximise use of available daylight
- Energy efficient appliances
- Ongoing monitoring and building services management to ensure efficient operation of installed systems into the future.

**Principle 8**      Select Appropriate Building Materials

Materials will be selected on the basis of thermal performance, embodied energy and degree of recycled content. Consideration will take into account factors such as whether or not they are durable and fit for purpose, reusable, recyclable and adaptable.

**Principle 9**      Manage Waste

A comprehensive waste management plan will be implemented during the construction phase to encourage reuse and recycling of construction waste generated on site and to minimise the amount of construction waste going to landfill.

Clearly identifiable and distinct waste recycling areas are being included in the building in addition to general waste areas, easily accessible to all building users. Building users will be informed about the waste facilities via the Building Users' Guide.

**Principle 10**      Cost Efficiency

Elements throughout the building have been considered on a whole of life cost analysis rather than capital cost. Where lifecycle analysis supports a higher initial spend, those options have been considered.

The cost efficiency of the development is being controlled via

- choosing a design which is appropriate for the site and a site appropriate to the intended use
- specifying standard sizes where possible
- repetition of layouts and building elements to encourage ease and efficiency of production
- using locally sourced materials where practical
- energy efficiency of building systems
- ongoing monitoring and control of building systems
- building management

### **Principle 11**      Healthy Indoor Environments

This development encourages the creation of healthy indoor environments via the use of

- good daylighting,
- shading to ensure glare control and limited solar heat gain
- controlled acoustic design
- use of low VOC content and low formaldehyde materials

### **Principle 12**      Supporting Green Transport

The high density of this development in this urban environment encourages development of non-car based transportation due to its proximity to community facilities and access to public transport.

The development supports green transport and encourages an active, healthy lifestyle.

### **Principle 13**      Adaptable Buildings and Spaces

The basic structure of the high-rise building, consisting of a concrete skeleton and structural core for lifts and services is reusable by its nature and able to be refitted at a future date. The shallow footprint required for the tower ensures that the building use is adaptable to all commercial/ residential/ hotel/ serviced apartment type functions.

The building design ensures the development can be used by people of different abilities with minimal risk of injury by incorporating level entries, exits and internal thresholds and lift access to all floors and internal design features that ensure ease of mobility and safe operation for all users.

### **Principle 14**      A Safe and Diverse Community

This mixed use of student accommodation and commercial premises ensures a diversity of use and constant levels of activity. This contributes to the vibrancy of the area, and in maintaining the activity at street level at all times of the day, there are opportunities for casual surveillance and continuous community monitoring.

### **Principle 15**      Inform the Owner and End User

An education programme to inform the building users about the development's sustainability credentials will be initiated via induction and a Building Users' Guide will be adopted to encourage the building to be operated in an ongoing environmentally sensitive manner.



#### SECTION 4 CONCLUSION

The development at 60-78 Regent Street, Redfern is committed to ensuring minimal impact on the environment by addressing the following issues in its design and operation:

- Involvement and commitment of the design team at every stage of the design and construction process;
- Shading and daylighting;
- Materials;
- Integrated water management;
- Energy efficiency;
- Waste management;
- Cost efficiency;
- Healthy indoor environments;
- Green transportation;
- Adaptability of building structure and spaces;
- Community engagement;
- Safety and security of building users and the wider community;
- Ongoing monitoring and management.

This demonstrates a responsible approach to the many facets of sustainability in the built environment.