

4 Environmental management

Environmental Management includes those aspects of developments that have a measurable effect on the physical quality of Central Sydney's environment. The environmental management provisions are intended to ensure that principles of ecologically sustainable development (ESD) are integrated into the design and construction of development, particularly in relation to reduced energy usage. They are also intended to lead to improved sun access to publicly accessible spaces and to lower overall levels of wind, noise, and reflectivity that will contribute to people's enjoyment of the public domain.

4.1 Sunlight to public spaces

Strategy

The LEP provides specific sun access protection for certain hours of the day for the major parks and community places. This section is concerned with sun access to other public spaces in Central Sydney including those that are privately owned.

Relevant LEP clauses 11(a), 12(i), 12(m), 18(g), 20(f), 29(1)(c)

Sun access during lunchtime hours is desirable in all public spaces. Some public spaces, particularly those with sun access, are heavily used throughout the day. Use of some other public spaces is substantially increased by sun access, so overshadowing effects of development beyond lunchtime hours should be considered.

Objective

- To ensure that there is adequate sun access to publicly accessible spaces.

Provisions

- 4.1.1 Shadowing effects of new buildings on publicly accessible space are to be considered for the hours of 12 noon to 2 pm between 14 April and 21 June.
- 4.1.2 Depending on the nature and use of a particular space, periods outside 12 noon to 2 pm may also be required to be considered under Section 90 of the *Environmental Planning and Assessment Act 1979*. This consideration may result in the need for modification of shadow impact outside the 12 noon to 2 pm period.

4.2 Wind standards

Strategy

Windy conditions can cause discomfort and danger to pedestrians, and downdrafts from buildings can inhibit the growth of street trees. Conversely, moderate breezes that penetrate the streets of Central Sydney can enhance pedestrian comfort and disperse vehicle emissions and air-conditioning plant exhausts.

Analysis of wind conditions in Central Sydney indicates that:

- setting tower buildings back from lower structures built at the street frontage protects pedestrians from strong wind downdrafts at the base of the tower buildings (see Figure 4.1),
- ensuring that tower buildings are well spaced from each other is the most effective way of allowing breezes to penetrate Central Sydney.

Relevant LEP clauses: 12(f), 12(i), 12(m), 18(f), 20(e)

The shape, location and height of buildings are to be designed to satisfy wind criteria for public safety and comfort at ground level. The useability of open terraces on buildings also depends on comfortable conditions being achieved.

Objectives

- To ensure that new developments satisfy nominated wind standards and maintain comfortable conditions for pedestrians.
- To ensure that the moderate breezes are able to penetrate the streets of Central Sydney.

Provisions

- 4.2.1 To ensure public safety and comfort (see Figure 4.2) the following maximum wind criteria are to be met by new buildings:
- 10 metres/second in retail streets (see Figure 2.27),
 - 13 metres/second along major pedestrian streets, parks and public places (see Figure 2.27),
 - 16 metres/second in all other streets.
- 4.2.2 Building design should minimise adverse wind effects on recreation facilities on open terraces within developments.
- 4.2.3 A Wind Effects Report is to be submitted with the DA for all buildings taller than 45 metres above street level.

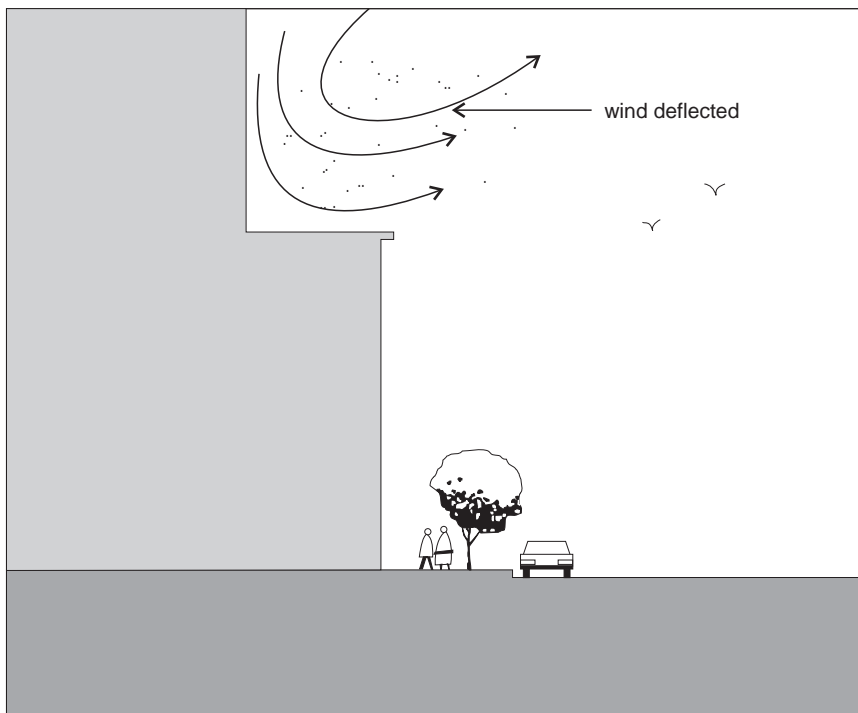


Figure 4.1

Wind and setbacks: A tower set back from the street frontage height generally deflects downdrafts and wind away from street level.



The comfort and useability of public places such as Pitt Street Mall is enhanced if nearby buildings are designed to satisfy wind and sun access criteria.

Figure 4.2

4.3 Energy efficiency of buildings

Strategy

The State Government's *Cities for the 21st Century* and Council's *Total Environmental Policy* call for ecologically sustainable development (ESD) principles to be taken into account in urban development. Buildings should optimise their passive and operational energy efficiencies, reduce pollution, include waste minimisation systems and use construction materials from renewable resources.

Council has a separate *Code for Waste Handling in Buildings* available from the One Stop Shop.

Objective

- To have regard to the principles of Ecologically Sustainable Development by providing energy efficient buildings.

Provision

- 4.3.1 An Energy Efficiency Report is required to accompany the DA for any new building with a construction cost of \$1 million or more.
- 4.3.2 Building designers should have regard to the Building Energy Manual (NSW Public Works 1993) and the Environment Design Guide (Royal Australian Institute of Architects) when designing buildings.

Relevant LEP clauses: 12(j), 13(a).

4.4 Noise reduction

Strategy

Loud noise affects the amenity of places. New buildings can mitigate the effects of noise by using insulation. In particular, residential buildings and serviced apartments should be insulated from noise. Loud noise emanating from shops can also detract from otherwise pleasant street environments.

Construction also creates noise that needs to be controlled. Council has a separate *Code of Practice for Construction Hours/Noise within the Central Business District* available from the One Stop Shop.

Objectives

- To insulate dwellings and serviced apartments against noise.
- To ensure that pedestrians are not subject to unreasonable and avoidable noise nuisances.

Provisions

- 4.4.1 All residential buildings and serviced apartments are to be constructed so that the repeatable maximum $L_{Aeq}(1 \text{ hour})$ level does not exceed the maximum noise levels specified in Clauses 6.1.14, 6.1.15 and 6.1.16
- 4.4.2 The consent authority may require a Noise Impact Assessment Report to accompany a DA.
- 4.4.3 Spruiking and the playing of amplified music or messages within shop premises so that it can be heard in a public place is not permitted.

Relevant LEP clauses: 12(c), 12(i), 18(d), 20(b), 22(b), 22(c).

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4.5 Reflectivity

Strategy

Reflective materials used on the exterior of buildings can result in undesirable glare for pedestrians and potentially hazardous glare for motorists. Reflective materials can also impose additional heatload on other buildings.

The excessive use of highly reflective glass should be discouraged. Buildings with a glazed roof, facade or awning should be designed to minimise hazardous or uncomfortable glare arising from reflected sunlight.

Objective

- To restrict the reflection of sunlight from buildings to surrounding areas and buildings.

Provisions

- 4.5.1 New buildings and facades should not result in glare that causes discomfort or threatens safety of pedestrians or drivers.
- 4.5.2 Visible light reflectivity from building materials used on the facades of new buildings should not exceed 20%.
- 4.5.3 A Reflectivity Report that analyses the potential solar glare from the proposed new development on pedestrians or motorists may be required.

Relevant LEP clauses: 12(f), 12(i), 12(m).

4.6 Urban run-Off

Strategy

The water quality of urban run-off from Central Sydney directly affects Sydney Harbour. Consequently it is important to control sediment and gross pollutants, particularly during construction.

Objective

- To control the quality of urban run-off from sites in Central Sydney.

Provision

- 4.6.1 A water and sediment control statement for the construction phase is to be included with a BA. The statement is to be consistent with the principles and practices set out in the Department of Land and Water Conservation's *Erosion and Sediment Control Manual*.

Relevant LEP clauses: 11(a), 11(d), 12(j), 12(k), 12(o).

4.7 External lighting of buildings

Strategy

The external lighting of buildings can add to the character of buildings at night and enliven the city as well as views of the city skyline. However, external lighting has an impact on total energy efficiency and can affect residential amenity. In some cases it is more appropriate to highlight certain architectural features of a building rather than floodlighting whole facades (see Figure 4.3).

Relevant LEP clauses: 11(a), 11(d), 12(i), 12(j).

Objectives

- To encourage external lighting of buildings that adds to the architectural character of the building whilst having regard to efficient use of energy and the amenity of nearby residents.
- To keep light spill to a level that enables Sydney Observatory to continue to operate.

Provision

- 4.7.1 Any external lighting of buildings is to be considered with regard to :
- (i) the integration of external light fixtures with the architecture of the building (for example, highlighting external features of the building),
 - (ii) the contribution of the visual effects of external lighting to the character of the building, surrounds and skyline,
 - (iii) the energy efficiency of the external lighting system,
 - (iv) the amenity of residents in the locality,
 - (v) the impact on the night sky, having particular regard to observed effects from Sydney Observatory.



Any external lighting of buildings is to have regard to the impact on the night sky, energy usage and amenity considerations.

Figure 4.3