

# Chapter E6 Sustainability

Part E ► General Controls for All Development

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## Chapter E6 ▶ Sustainability

### Contents

<b>E6.1</b>	<b>INTRODUCTION .....</b>	<b>1</b>
	E6.1.1 Background .....	1
	E6.1.2 Land where this chapter applies .....	1
	E6.1.3 Development types to which this chapter applies .....	1
	E6.1.4 Objectives .....	1
	E6.1.5 Relationship to other parts of the DCP .....	2
	E6.1.6 Relationship to other documents.....	2
<b>E6.2</b>	<b>COMMERCIAL AND NON-RESIDENTIAL BUILDINGS.....</b>	<b>3</b>
<b>E6.3</b>	<b>SOLAR ENERGY SYSTEMS (INCLUDING SOLAR PANELS, SOLAR HOT WATER SYSTEMS AND SOLAR HEATING SYSTEMS) .....</b>	<b>7</b>



## E6.1 Introduction

### E6.1.1 Background

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Ecologically sustainable development (ESD) seeks to integrate environmental, economic and social considerations in decision making. Building sustainability is an important consideration in the design, construction and ongoing use of buildings. Applying ESD principles to development helps minimise greenhouse gas emissions and reduce energy and water costs for households and businesses.

### E6.1.2 Land where this chapter applies

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This chapter applies to all land within the Woollahra Municipality.

### E6.1.3 Development types to which this chapter applies

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This chapter applies to the following development:

- ▶ commercial development that requires consent;
- ▶ non-residential development that requires consent;
- ▶ solar energy systems that do not meet the provisions in the *State Environmental Planning Policy (Infrastructure) 2007* (Infrastructure SEPP); and
- ▶ solar energy systems that meet the criteria in the Infrastructure SEPP but form part of other works that require consent.

#### Applying best practice to other development

Council encourages applicants to apply sustainability principles to all development. In particular, the design principles in the BASIX planning tool may be considered for alterations and additions to residential buildings that are less than \$50,000.

### E6.1.4 Objectives

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The objectives of this chapter are:

- 01 To promote ESD in the design, construction and use of non-residential buildings.
- 02 To encourage the use of environmentally sustainable building materials.
- 03 To maximise the benefits of passive solar design.
- 04 To promote the use of renewable energy sources while minimising visual impacts, particularly when located in heritage conservation areas.

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### E6.1.5 Relationship to other parts of the DCP

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This chapter is to be read in conjunction with the other parts of the DCP that are relevant to the development proposal, including:

- ▶ If located in a residential area—the controls in Part B: General Residential, or Part C: Heritage Conservation Areas that apply to the land.
- ▶ If located in a business centre—the controls in Part D: Business Centres that apply to the land.
- ▶ Part F: Land Use Specific Controls - this part contains chapters on Child Care Centres, Educational Establishments, Licensed Premises and Telecommunications.

### E6.1.6 Relationship to other documents

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#### State environmental planning policies

The State Government also requires sustainability to be considered in the design, construction and ongoing use of buildings. These requirements are set out in the following State environmental planning policies (SEPPs):

- ▶ *Building Sustainability Index: BASIX 2004* (BASIX)—applies to residential development and sets sustainability targets for water, energy and minimum performance levels for thermal comfort. The BASIX scheme ensures a state-wide consistent approach to sustainability and, as at July 2103, applies to:
  - all new residential buildings with one or more dwellings but not a hotel or motel;
  - alterations and additions to a residential building that has a value of \$50,000 or more;
  - swimming pools and/or spas that serve one dwelling with a capacity of 40,000L or more.
- ▶ Infrastructure SEPP—includes exempt and complying development provisions for the installation of the following types of solar energy systems: photovoltaic electricity generating systems, solar hot water systems, solar air heating systems.
- ▶ *Exempt and Complying Development 2008* (Codes SEPP)—includes exempt and complying development provisions for certain low impact developments including the installation of hot water systems, rainwater tanks, shade structures, skylights, roof windows and ventilators.

#### National Construction Code

National Construction Code (NCC), Section J, includes mandatory minimum energy performance requirements for Class 3 and Class 5 to 9 buildings. The objective is to reduce building greenhouse gas emissions by improving operational efficiency of buildings by addressing matters such as building fabric, thermal performance and glazing.

## E6.2 Commercial and non-residential buildings

This section seeks to promote ESD in commercial and non-residential development by minimising water use, fuel use and greenhouse gas emissions in the design, construction and use of buildings.

Development should seek to achieve a NABERS (National Australian Built Environment Ratings System) rating of at least 4 stars, or equivalent under other rating systems.

A 4 star rating represents “good performance” under the NABERS Energy and Water tool, which measures performance on a rating scale from 1 to 6 stars. A 4 star rating can be generally achieved through compliance with the National Construction Code and thoughtful building design and addressing such matters as identified in the table below.

Note: In addition to the building design matters identified in this chapter, applicants should have regard to the choice of internal fittings, as the energy performance of a building can be greatly improved by selecting water conservation devices (such as 4 star taps and 4 star dual flush toilets), energy efficient space heating and cooling systems, energy efficient lighting, and gas or electric boosted solar hot water systems.

Objectives		Controls	
O1	To promote sustainable buildings, design and construction.	C1	<p>Office development with a gross floor area of at least 1,000m<sup>2</sup> achieves a minimum 4 star NABERS rating.</p> <p>Notes:</p> <ul style="list-style-type: none"> <li>i) C1 above applies to new development and work involving significant alterations and additions to existing development.</li> <li>ii) For the purpose of the above control, the calculation of gross floor area does not include parking, loading or vehicular access, to these areas.</li> <li>iii) To demonstrate that this rating will be achieved, the applicant is to submit with the DA:                             <ul style="list-style-type: none"> <li>a) an ESD Statement prepared by an accredited professional providing design evidence that a NABERS 4 star rating can be achieved; or</li> <li>b) evidence of a Commitment Agreement. A Commitment Agreement is a contract between the NABERS National Administrator, the Office of Environment and Heritage NSW (OEH) and the building proponent to design,</li> </ul> </li> </ul>

Objectives	Controls
	<p>build and commission the premises to achieve a NABERS Energy star rating of 4 or more.</p>
<p>O2 To design buildings to reduce the need for artificial heating and cooling, and artificial lighting during daylight hours.</p>	<p>C2 Building articulation, courtyards and light wells allow daylight into internal areas.</p> <p>C3 Windows for buildings are oriented towards the north for maximum solar access.</p> <p>C4 Building elements such as eaves, awnings, operable louvres, projecting sun shades, screens, blinds and balconies maximise solar access in winter and sun shading in summer.</p>
<p>O3 To ensure that window placement maximises opportunities for cross ventilation.</p>	<p>C5 Subject to privacy impacts to adjoining properties, buildings contain external windows to provide direct light and natural ventilation.</p> <p>C6 Subject to privacy impacts to adjoining properties, window openings are located in opposite walls and in line with each other to provide for natural cross ventilation.</p> <p>C7 Buildings are designed to facilitate convective currents. This may be by:</p> <ul style="list-style-type: none"> <li>a) locating small windows on the windward side and larger windows on the leeward side; and</li> <li>b) designing buildings to draw cool air in at lower levels and allowing warm air to escape at higher levels.</li> </ul>

Objectives	Controls
<p>O4 To ensure that the use of glazing maximises solar penetration during winter months.</p>	<p>C8 Main windows facing between 110° east and 110° west of north are designed to be energy efficient (i.e. low emissivity or double glazed).</p> <p>C9 Development provides appropriate sun protection during summer for glazed areas. Extensive areas of glazing are protected from sun during summer using shading devices. Unprotected tinted windows are not an acceptable solution.</p>
<p>O5 To reduce water consumption and encourage on-site water retention and re-use.</p>	<p>C10 For landscaped garden areas in commercial developments, building design incorporates the following measures to minimise mains water demand and consumption:</p> <ul style="list-style-type: none"> <li>a) rainwater tanks to supply water for plant watering, toilet flushing, outdoor cleaning and cooling systems for the building;</li> <li>b) where suitable, roof gardens to reduce stormwater run-off and provide insulation;</li> <li>c) an irrigation system to minimise waste water; and</li> <li>d) water retention within gardens to direct run-off from impervious uses and water tanks to deep soil areas.</li> </ul> <p>C11 Desalination plants are avoided. Desalination plants are not an appropriate water management option because they are an energy intensive and inefficient method for providing fresh water.</p>

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Objectives	Controls
<p>O6 To encourage tree selection that reduces the need for artificial heating and cooling of buildings.</p>	<p>C12 Subject to view impacts to adjoining properties, wide canopied deciduous trees are planted to the north of buildings to provide shade during warmer months and allow sunlight penetration during cooler months.</p> <p>C13 Subject to view impacts to adjoining properties, evergreen trees are planted to the west and east of buildings to prevent glare and heat during warmer months.</p>

### E6.3 Solar energy systems (including solar panels, solar hot water systems and solar heating systems)

A solar energy system includes a photovoltaic electricity generating system, solar hot water system, or solar air heating system.

These solar energy systems are often exempt or complying development under the Infrastructure SEPP (refer to Part 3, Division 4, Electricity generating works or solar energy systems).

However, a development application is required to be lodged for a solar energy system when the system does not meet the standards for exempt or complying development in the SEPP. These standards include requirements for systems in heritage conservation areas.

The controls also provide guidelines for the design and location of solar energy systems that form part of other works that require the development consent. For example, a development application for a dwelling house may include solar energy systems. In these cases, the solar energy system is assessed as part of the development proposal for the new building.

Objectives	Controls
<p>O1 To minimise the amenity impacts of solar energy systems particularly in regard to streetscape impacts, scenic quality, visual impact and view loss.</p>	<p>C1 The solar energy system meets the following location requirements:</p> <ul style="list-style-type: none"> <li>a) is in line with the roof surface or no more than 300mm above and parallel with the roof surface;</li> <li>b) is located behind the front setback and not visible from the street;</li> <li>c) does not involve mirrors or lenses to reflect or concentrate sunlight; and</li> <li>d) for buildings in heritage conservation areas and buildings which are heritage items— is not located on any part of a roof plane, wall or chimney of the principal building form.</li> </ul> <p>C2 The location of the solar energy system does not have an unreasonable visual impact on:</p> <ul style="list-style-type: none"> <li>a) the streetscape and scenic quality of the area;</li> <li>b) visual quality of the area when viewed from the harbour or a public recreation area;</li> <li>c) amenity of adjoining and adjacent properties; or</li> </ul>

Objectives	Controls
	<p>d) existing harbour and city views obtained from private properties.</p> <p>Note: A view analysis and/or heritage impact assessment may be required as a part of the DA to detail the extent of potential impacts.</p>