

SECTION 1 RESIDENTIAL DEVELOPMENT

1.1 INTRODUCTION

The North Sydney LGA has the second highest dwelling density in NSW. This is reflected in the high proportion of medium (25%) and high density (64%) dwellings accommodated within the LGA. The demand for housing in the LGA is driven by a number of factors, including:

- The aesthetic and cultural characteristics of the LGA such as parks, bushland, foreshore areas and heritage retention;
- The proximity to employment areas, including Sydney City and North Sydney CBDs, both of which lie within the Sydney global economic corridor of industry and business, located between Sydney Airport and Macquarie Park;
- Access to a range of retail, recreational, educational and health services; and
- The extent and accessibility of transport infrastructure.

This demand for housing has seen increases in property and rental values, resulting in pressures for the redevelopment of housing for medium and high density accommodation and high cost housing. Additional pressure also comes from the need to accommodate additional dwellings in line with the State government's Regional Plan for Sydney.

This pressure to accommodate more housing can sometimes result in adverse impacts on the amenity of existing residents in terms of overshadowing, visual and acoustic privacy, traffic congestion and access to open space. Accordingly, development controls are required to ensure that any amenity impacts are minimised.

Council is also wary of the need to provide adequate housing choice to reflect the LGA's future residential demographic profile (refer to Part A: Section 2 – *Context* to the DCP). In particular, there is a need to provide a mixture of dwellings in terms of their type, size, adaptability and affordability.

1.1.1 General Objectives

The general objectives of this Section of the DCP are to ensure that residential development:

- O1 reinforces the local planning priorities and actions of Council's Local Strategic Planning Statement;
- O2 reinforces the actions and targets of Council's *Local Housing Strategy*;
- O3 is consistent with the principles contained within the *Integrated Land Use and Transport Policy*;
- O4 provides a range of living opportunities that attract and cater for a diverse population;
- O5 does not have adverse impacts on residential amenity or environmental quality;
- O6 is in context with surrounding development;
- O7 contributes to the garden setting and lower scale character of North Sydney's residential neighbourhoods;
- O8 provides safe and comfortable accommodation;
- O9 is consistent with the character that is described in the relevant area character statements;
- O10 incorporates innovative sustainable design to reduce energy and water consumption, and meets or exceeds sustainability requirements, and
- O11 minimise stormwater runoff, maintain or improve stormwater quality and encourage recycling where possible.

1.1.2 When does this section of the DCP apply?

This Section of the DCP applies to all development applications for residential accommodation, including:

- (a) Attached dwellings;
- (b) Boarding houses;
- (c) Dual occupancies;
- (d) Dwelling houses;
- (e) Group homes;
- (f) Multi dwelling housing;
- (g) Residential flat buildings;
- (h) Secondary dwellings;
- (i) Semi-detached dwellings; and
- (j) Seniors housing.

However, this Section of the DCP does not apply to any of the residential accommodation types listed above, if they are proposed within the *B4 Mixed Use* zone. Residential accommodation proposed in the *B4 Mixed Use* zone is subject to the relevant provisions under Part B: Section 2 – *Mixed Use and Commercial Development* of the DCP.

Non-residential development which is proposed within residential zones is covered by Part B: Section 3 - *Non-residential Development in Residential Zones* of the DCP.

1.1.3 Relationships to other sections

Where relevant this section of the DCP should be read in conjunction with the following Sections of the DCP:

- (a) Part A: Section 3 – Submitting an Application;
- (b) Part B: Section 10 – Car Parking and Transport;
- (c) Part B: Section 11 – Construction Management;
- (d) Part B: Section 12 – Access;
- (e) Part B: Section 13 – Heritage and Conservation;
- (f) Part B: Section 16 – Tree and Vegetation Management;
- (g) Part B: Section 15 – Bushland;
- (h) Part B: Section 17 – Erosion and Sediment Control;
- (i) Part B: Section 18 – Stormwater Drainage;
- (j) Part B: Section 19 – Waste Minimisation and Management; and
- (k) Part B: Section 20 – Public Infrastructure.

1.1.4 Relationships to other documents and planning policies

Where relevant, this section of the DCP should be read in conjunction with the following planning policies and documents:

- (a) [SEPP 65 – Design Quality of Residential Apartment Development](#);
- (b) The DoP's [Apartment Design Guide](#);
- (c) [SEPP \(Affordable Rental Housing\) 2009](#);
- (d) [SEPP \(Coastal Management\) 2018](#);
- (e) Livable Housing Australia's [Livable Housing Design Guidelines](#);

Residential Development

- (f) [SEPP \(Housing for seniors and people with a disability\) 2004;](#)
- (g) [The DoP’s Seniors Living Policy – Urban Design Guidelines for Infill Development;](#)
- (h) [SEPP \(Building Sustainability Index: BASIX\) 2005;](#)
- (i) [SEPP \(Infrastructure\) 2007;](#)
- (j) [The DoP’s Development Near Rail Corridors and Busy Roads – Interim Guideline \(19 December 2008\);](#)
- (k) [SREP \(Sydney Harbour Catchment\) 2005;](#)
- (l) The DoP’s [Sydney Harbour Foreshores and Waterways Area DCP \(2005\);](#) and
- (m) The Rural Fire Service’s [Planning for Bush Fire Protection.](#)

1.2 SOCIAL AMENITY

A diversity of people contributes to the popularity of an area. Diversity also extends the usefulness of an area and contributes to the sustainability of both community and the environment. A range of residential accommodation in terms of built form, tenure and affordability is needed to sustain a diverse population and to ensure that a range of services and facilities continues to be provided in the area. Council aims to maintain the existing diverse mix of residential accommodation in North Sydney, not lose this residential mix to other land uses and to allow for some increase in both the dwelling stock and population, in accordance with the NSW State Government policy of urban consolidation.

The aim of urban consolidation is to accommodate a certain proportion of Sydney’s residential growth within existing urban areas. To implement urban consolidation in North Sydney, Council has identified areas where growth can be accommodated in a range of dwelling types including attached dwellings, dual occupancies, dwelling houses, multi dwelling housing and residential flat buildings. Additional living space can also be created through alterations and additions to existing dwellings and residential growth the mixed-use areas.

1.2.1 Population Mix

Objectives

- O1 To provide a mixed residential population in terms of age, gender, household type and size, education, income and employment, and including households with children, households on low to moderate incomes, households with aged or disabled persons.
- O2 To ensure that dwelling yield achieves a density that contributes to energy efficient design and residential amenity.

Provisions

- P1 Multi-dwelling housing and residential flat buildings containing less than 20 dwellings must include, at least two of the following dwelling types:
 - (a) studio;
 - (b) 1-bedroom;
 - (c) 2-bedroom; and
 - (d) 3-bedroom.
- P2 Despite P1 above, no more than 55% of all dwellings must comprise a combination of both studio and 1-bedroom dwellings.
- P3 Residential flat buildings containing 20 or more dwellings should provide a mix of dwelling sizes in accordance with Table B-1.1.



Dwelling Size	% of Total Dwellings
Studio	10-20%
1 bedroom	25-35%
2 bedroom	35-45%
3 bedroom+	10-20%

- P4 Variations to the dwelling mix within P2 or P3 will not be considered, unless the applicant can adequately demonstrate by an authoritative analysis of current and future market demand that the suggested mix is not reasonable.

1.2.2 Universal Design and Adaptable Housing

Objectives

- O1 To encourage the incorporation of universal design features and the provision of adaptable housing in new developments to meet the diverse needs of a variety of occupants.
- O2 To encourage greater housing choice for seniors, families and people with disabilities.
- O3 To enable residents to age in place.

Provisions

- P1 All new dwellings must satisfy the Silver level performance requirements of the *Livable Housing Design Guidelines*. The incorporation of Gold and Platinum level universal design features is strongly supported.¹

Note: For details on the universal design features and performance requirements of the *Livable Housing Design Guidelines* visit <http://www.livablehousingaustralia.org.au/>.

- P2 A minimum of 20% of dwellings in multi-dwelling housing and residential flat buildings that contain more than 5 dwellings must comprise adaptable housing², and be designed and constructed to a minimum Class C Certification under AS 4299 – Adaptable Housing.
- P3 Where adaptable housing is required to be provided, the adaptable housing components must:
- (e) be integrated into the overall design of the development, and not be isolated; and
 - (f) not use a different standard of materials and finishes to the remainder of the building.
- P4 Where universally designed and adaptable dwellings are proposed, those dwellings must be clearly identified as such on the submitted development application plans.
- P5 Developments requiring adaptable housing must also satisfy the provisions of Part B Section 12.5 of this DCP.

¹ This provision applies to residential development which requires development approval and does not apply to alterations and additions to existing homes or complying development under NSW State Codes.

² Adaptable housing is designed with accessible features that can be modified to meet changing needs of residents over time. Typical adaptable features include level and wider doorways and corridors, slip resistant floor surfaces, reachable power points, lever door handles and lever taps. When designing adaptable housing consult AS 1428, 4299 and 4586.

1.2.3 Maintaining residential accommodation

Objectives

- O1 To ensure that developments do not result in the loss of residential accommodation.

Provisions

- P1 Development, whether it comprises new buildings or alterations/additions to existing buildings, should ensure that the existing residential density on site is not reduced (i.e. that the number of dwellings, or the number of rooms/bed spaces in a boarding house, that existed on the site is not reduced).

1.2.4 Affordable housing

Housing is considered affordable when households that are renting or purchasing are able to pay their housing costs and still have sufficient income to meet other basic needs such as food, clothing, transport, medical care and education.

Individuals working in key services on low-to-moderate incomes are finding it increasingly difficult to find affordable housing close to their work places. Over time, these individuals may choose not to work in high cost areas that are too far from their accommodation. By increasing access to affordable housing, we work towards integrated and sustainable communities that function in a way that benefits the whole community.

Affordable housing can be provided by both the government and private sectors. More information about affordable housing can be obtained from the Department of Planning's website (www.planning.nsw.gov.au) and Housing NSW's website (www.housing.nsw.gov.au).

Objectives

- O1 To prevent the loss affordable housing within the LGA and displacement of socially disadvantaged groups.
- O2 To encourage the provision of adaptable housing in new developments

Provisions

- P1 Development must avoid the loss of low cost accommodation in accordance with the provisions of the [Affordable Rental Housing SEPP](#). Where a loss occurs, the applicant will be required to pay a monetary contribution for the replacement of affordable housing.
- P2 New affordable housing may be provided in accordance with the provisions of the [Affordable Rental Housing SEPP](#).

1.2.5 Housing for Seniors and Persons with a Disability

Objectives

- O1 To ensure housing for seniors and persons with a disability are appropriately designed to cater for the needs of the community.

Provisions

- P1 Development must be provided in accordance with the provisions under of the [SEPP \(Housing for seniors and people with a disability\) 2004](#) and where relevant, the *Seniors Living Policy – Urban Design Guidelines for Infill Development*.
- P2 Residential care facilities and hostels must provide at least one communal open space configured and designed in accordance with the provisions of the Department of Planning's *Apartment Design Guide*.

1.3 ENVIRONMENTAL CRITERIA

The quality and amenity of the residential environment is important to the community. It contributes to the comfort and wellbeing of current residents and to sustainability of residential areas and the environment for future users. The quality and amenity of residential development can be maintained and improved by minimising the impacts of development by utilising some or all of the following approaches.

1.3.1 Topography

Objective

- O1 To ensure that the natural topography and landform are maintained.
- O2 To retain existing vegetation and allow for new substantial vegetation and trees.
- O3 To minimise the adverse effects of excavation on the amenity of neighbouring properties.
- O4 To minimise excavation and site disturbance so as to retain natural landforms, natural rock faces, sandstone retaining walls and the like and to retain natural water runoff patterns and underground water table and flow patterns.
- O5 To ensure the structural integrity of adjoining properties.
- O6 To minimise adverse effects of adjoining transport infrastructure.

Provisions

- P1 Development that includes excavation must not be carried out unless:
 - (a) the development is in accordance with and promotes the objectives to this subsection; and
 - (b) land stability of the site and adjoining land is preserved; and
 - (c) the natural drainage patterns of the land and catchment will not be disrupted; and
 - (d) adverse effects on other properties are avoided or minimised.
- P2 New development should not result in the removal or covering of rock outcrops, overhangs, boulders, sandstone platforms or sandstone retaining walls.
- P3 Development should not result in the ground level (finished) being altered greater than 500mm above or below ground level (existing).
- P4 Habitable rooms (excluding bathrooms, laundries and storerooms) should not be located more than 1m below ground level (existing) for more than 50% of the room's floor area.
- P5 Excavation should not occur within 1m of any property boundary. Where excavation is required within 500mm of a property boundary, Council must not grant development consent unless it is satisfied that the proposed excavation will not result in adversely impacting upon the structural integrity of adjoining properties.

Note: *In order to satisfy Council that the level of excavation is acceptable, it is recommended that applicants submit appropriate details from a structural engineer.*
- P6 The depth of soil around buildings must be sufficient to sustain trees as well as shrubs and smaller scale gardens.
- P7 Consent must not be granted to a development for the purposes of attached dwellings, dual occupancies, dwelling houses or semi-detached dwellings where any associated garage or car parking is located in a basement.

Residential Development

- P8 Notwithstanding P7, Council may grant consent to a dwelling house, dual occupancy, attached dwelling or semi-detached dwelling incorporating a basement garage or car parking, but only where it can be demonstrated:
- (a) that the development satisfies the objectives of this subsection; and
 - (b) that the entire basement is located entirely within the footprint of the building above; and
 - (c) there is no alternative location on the site to accommodate the required level of car parking.
- P9 Consent must not be granted to a development for the purposes of multi dwelling housing or residential flat buildings in any residential zone, where the excavation for any associated garages, car parking, plant rooms or ancillary storage and access thereto exceeds 70% of the site area.
- P10 Where practical,
- (a) a minimum of 50% of the un-excavated area should be located at the rear of the site. Sites with dual or rear lane frontages, this area may be relocated to allow buildings to address the secondary frontage.
 - (b) a minimum of 30% of the unexcavated area should be located within the front setback.
 - (c) a minimum 1.5m wide strip of landscaped area should be located along at least one side boundary. A minimum 1.5m wide strip should be provided along both boundaries where the site width permits.
- P11 Basement car parks, where permitted, must not extend to the full width of a site.

1.3.2 Properties in proximity to bushland

Objectives

- O1 To ensure that development located within proximity of land zoned *E2 Environmental Conservation* is compatible with long term conservation and management of Council’s Bushland reserve system in accordance with Council’s Bushland Plan of Management and other relevant legislation and policies.

Provisions

- P1 Development on properties in proximity to bushland must be consistent with the requirements of Part B: Section 15 - *Bushland* of the DCP.
- Note:** Refer to the *Bushland Buffer Map* in Appendix 4 to this DCP to determine if the subject property is located in proximity to bushland.
- P2 Maintain existing ground levels on land adjoining land zoned *E2 Environmental Conservation*.

1.3.3 Properties on Bush Fire Prone Land

Objectives

- O1 To minimise the risk of harm to persons and property in the event of a bush fire.

Provisions

- P1 Where relevant, new development on Bush Fire Prone Land must comply with the relevant requirements of the NSW Rural Fire Service’s *Planning for Bush Fire Protection* (as amended).
- P2 Bush fire mitigation controls must be integrated wholly within the boundaries of the land being developed. Asset Protection Zones or other mitigation controls must not be placed on Council land.

1.3.4 Properties with a foreshore frontage

Objectives

- O1 To promote a scale and form of development that enhances the scenic, environmental and cultural qualities of the foreshore.
- O2 To ensure that development considers coastal processes, such as sea level rise.
- O3 To ensure development is consistent with Council's *Foreshore Access Strategy*.

Provisions

- P1 Development on land adjacent to the foreshore must be designed with regard to sea level rise.

Note: Further information about sea level rise can be obtained from the Department of Planning (www.planning.nsw.gov.au).

- P2 Development on land adjacent to the foreshore must be designed with regard to the provisions of [SREP \(Sydney Harbour Catchment\) 2005](#) and *Sydney Harbour Foreshores and Waterways Area DCP (2005)*.
- P3 Development must not alienate public access to foreshores by the location of foreshore structures.
- P4 Mature trees or significant landscaping should not be removed in order to locate foreshore structures.
- P5 Sea walls, rock outcrops or sandstone platforms should not be removed or covered in order to locate foreshore structures.
- P6 Minimise disturbance of existing, surface and underground drainage to minimise run-off into the water.
- P7 In accordance with Part B: Section 15 – *Bushland* and Part B: 16 – *Tree and Vegetation Management* of the DCP, preserve existing trees and vegetation wherever feasible and replace any tree or vegetation removed or damaged as part of development.
- P8 Natural materials and colours should be used that blend with the water, foreshore sandstone and vegetation, for any foreshore structure.
- P9 Avoid the use of large areas of blank, hard or reflective surfaces.
- P6 Buildings or structures must respect the topographical features of the site.

Note: For example, buildings are not cantilevered, but follow the topography.

1.3.5 Visual Impact - Access

Objectives

- O1 To minimise adverse visual effects as viewed from the harbour.

Provisions

- P1 Landscaping should be used to soften the appearance of structures such as inclimators.
- P2 Structures such as inclimators should be recessed below the ground level (existing).
- P3 The use of pathways and graded ramps is preferable to the use of inclimators for access. Where inclimators are to be used, they must be minimised in length.

1.3.6 Views

Due to North Sydney's sloping topography and proximity to Sydney Harbour, views and vistas comprise special elements that contribute to its unique character and to the amenity of both private dwellings and the public domain.

Residential Development

New development has the potential to adversely affect existing views. Accordingly, there is a need to strike a balance between facilitating new development while preserving, as far as practicable, access to views from surrounding properties.

When considering impacts on views, Council will generally not refuse a development application on the grounds that the proposed development results in the loss of views, where that development strictly complies with the building envelope controls applying to the subject site.

Objectives

- O1 To protect and enhance opportunities for vistas and views from streets and other public places.
- O2 To encourage view sharing as a means of ensuring equitable access to views from dwellings, whilst recognising development may take place in accordance with the other provisions of this DCP and the LEP.

Provisions

- P1 Development should be designed such that views from streets and other public places, as identified in the relevant area character statement (refer to Part C of the DCP), are not unreasonably obstructed.
- P2 Development should be designed to maximise the sharing of views from surrounding properties and public places.
- P3 Ensure that existing and proposed dwellings will have an outlook onto trees and sky.
- P4 Where a proposal is likely to adversely affect views from either public or private land, Council will give consideration to the Land and Environment Court’s Planning Principles for view sharing established in *Rose Bay Marina Pty Ltd v Woollahra Municipal Council and anor* [2013] NSWLEC 1046 and *Tenacity Consulting v Warringah Council* [2004] NSWLEC 140. The Planning Principles are available to view on the Land and Environment Court’s website (http://www.lec.justice.nsw.gov.au/planning_principles).

1.3.7 Solar access

Objectives

- O1 To ensure that all dwellings have reasonable access to sunlight and daylight.

Provisions

- P1 Developments should be designed and sited such that solar access at the winter solstice (21st June) provides a minimum of 3 hours between the hours of 9.00am and 3.00pm to:
 - (a) any solar panels;
 - (b) the windows of main internal living areas;
 - (c) principal private open space areas; and
 - (d) any communal open space areas.
 located on the subject property and any adjoining residential properties.
Note: Main internal living areas excludes bedrooms, studies, laundries, storage areas.
- P2 Despite P1 above, living rooms and private open spaces for at least 70% of dwellings within a residential flat building should receive a minimum of 2 hours of solar access between the hours of 9.00am and 3.00pm at the winter solstice (21st June).
- P3 Avoid providing apartments that have a sole orientation to the south. Where south facing apartments can not be avoided, ensure that they are provided with adequate access to natural light (e.g. by providing enlarged windows, skylights and the like). No

more than 15% of all dwellings in the development must not receive no direct sunlight between 9am and 3pm at mid-winter.

- P4 The use, location and placement of photovoltaic solar panels should take into account the potential permissible building forms on adjacent properties.

1.3.8 Acoustic privacy

Objective

- O1 To ensure all residents are provided with a reasonable level of acoustic privacy.

Control

- P1 New dwellings shall be designed and constructed to comply with the criteria specified in Table B-1.2 for all noise intrusion from external noise sources (including mechanical services noise from within the development itself), with windows and doors closed:

TABLE B-1.2: Noise intrusion criteria from external sources		
Internal Space	Time Period	Max 1hr noise level (LAeq 1 Hour)
Living areas	Day or Night	≤ 40 dBA
Sleeping Areas	Day or Night	≤ 35 dBA

Notes: Readings are to be LAeq (1hour), when measured during the noisiest 1 hour period between Day 7am to 10pm; and Night – 10pm to 7am.

- P2 Where multiple dwellings are provided within the same building, the building shall be designed and constructed to comply with the requirements in Table B-1.3 regarding acoustic insulation of walls and floors.

TABLE B-1.3: Internal acoustic insulation criteria	
Item	Criteria
Field Sound Reduction Index R'w of walls, floors services and ducts	BCA as amended. Except that Field Noise Reduction Index of all inter-tenancy walls shall be designed to achieve ≥R'w55 and the intent of the BCA requirements.
Field Sound Reduction Index R'w of Doors	Any door (including the effects of its frame and any edge gaps) in a wall between a dwelling and a stairwell or other internal common area shall be designed to achieve an ≥R'w28.
Impact Isolation of Floors	Where the floor of a dwelling separates a habitable room of one dwelling and a habitable room, bathroom, toilet, laundry, kitchen, plant room, stairway, public corridor, hallway and the like of a separate tenancy, the floor shall be designed to achieve a weighted standardised impact sound pressure level, Ln'tw not more than 55dB.

- P3 An acoustic report prepared by a certified acoustic consultant must be submitted and address the requirements to P1 where the proposal involves the construction of 4 or more new dwellings.
- P4 Buildings are to be designed and rooms positioned to reduce noise transmission within and between dwellings.
- P5 Bedrooms should be designed so that wardrobes provide additional sound buffering between rooms within the dwelling or between adjoining dwellings over and above the requirements in P2 above.

Residential Development

- P6 Windows and doors should be located away from external noise sources, or buffers used where separation can not be achieved.
- P7 Materials with low noise penetration properties should be used where practical.
- P8 Locate bedrooms and private open spaces away from noise sources such as garages, driveways, mechanical equipment and recreation areas.
- P9 Mechanical equipment, such as pumps, lifts or air conditioners should not be located adjacent to bedrooms or living rooms of dwellings on adjoining properties.
- P10 Where dwellings are located on busy roads the following construction techniques are to be considered for incorporation into the design of the development to reduce traffic noise within the dwelling:
 - (a) cavity brick walls;
 - (b) double glazing;
 - (c) solid core doors;
 - (d) concrete floors; and
 - (e) recessed balconies.
- P11 Where possible, avoid the use high brick fences on busy roads. High fences present a harsh and bland appearance to the street, obstruct views from the footpath to gardens and dwelling entries, reduce amenity for pedestrians and reduce casual surveillance of the street. Try to reduce acoustic impacts through other acoustic reduction measures.
- P12 Development on land which is on or is within 100m of a railway corridor, a road corridor for a freeway, a tollway, a transit way or any other road with an annual average daily traffic volume of more than 40,000 vehicles (based on the traffic volume data published on the website of the RMS) must consider the requirements of the DoP's *Development Near Rail Corridors and Busy Roads – Interim Guideline* (19 December 2008) in accordance with cl.87(2) and cl.102(2) of [SEPP \(Infrastructure\) 2007](#). An acoustic report may be required to demonstrate compliance with this Guideline and the acoustic requirements within cl.87(3) and cl.102(3) of the [SEPP \(Infrastructure\) 2007](#).

1.3.9 Vibration

Objectives

- O1 To ensure that dwellings are not unreasonably impacted upon by vibrations caused by the operation of railways and roadways.

Provisions

- P1 Development on land which is on or is within 60m of a railway corridor, or is adjacent to a road corridor for a freeway, a tollway, a transit way or any other road with an annual average daily traffic volume of more than 40,000 vehicles (based on the traffic volume data published on the website of the RMS) must consider the requirements of the DoP's *Development Near Rail Corridors and Busy Roads – Interim Guideline* (19 December 2008) in accordance with cl.87(2) and cl.102(2) of [SEPP \(Infrastructure\) 2007](#). In particular, consideration should be given to the vibration criteria contained within the NSW Environment Protection Authority's *Assessing Vibration: a technical guideline*. A vibration assessment report may be required to be prepared to demonstrate compliance with these Guidelines.

1.3.10 Visual privacy

Objectives

- O1 To ensure that existing and future residents are provided with a reasonable level of visual privacy.

Provisions

Building Separation

- P1 Provide visual separation between any non-residential use and dwellings.
- P2 Residential flat buildings are to provide adequate separation between habitable rooms, balconies and non-habitable rooms, consistent with [SEPP 65](#). The relevant building separation distances are reproduced in Table B-1.4. Increased setbacks may be required to ensure that adequate solar access to be provided to neighbouring dwellings.

Building height (metres)	Between habitable rooms and balconies	Between habitable & non-habitable rooms	Between non-habitable rooms
Up to 4 storeys (approx. 12m)	12m	9m	6m
5 to 8 storeys (approx.-25m)	18m	12m	9m
9 storeys (approx. 25m +)	24m	18m	12m

Windows

- P3 Locate windows to avoid direct or close views into the windows, balconies or private open space of adjoining dwellings.
- P4 Where windows are located with a direct outlook to windows of an adjacent dwelling, the windows must be provided with a minimum sill height of 1.5m, or use fixed obscure glazing or other privacy devices.
- P5 Provide suitable screening structures to minimise overlooking from proposed dwellings to the windows, balconies or private open space of adjacent dwellings, to windows, balconies or private open space of dwellings within the same development.

Decks, Patios and Terraces

- P6 Limit the width and depth of any deck, patio or terrace located greater than 1m above ground level (existing) where privacy and loss of views is an issue and consider using screen devices where relevant.
- P7 Private or communal open spaces such as terraces, patio, gardens and the like are not permitted on rooftops or garage roofs.
- P8 Despite P7 above, private or communal open spaces on roofs may be considered, but only if:
 - (a) the space is designed such that there is no potential for existing or future overlooking of the space and subsequent noise and privacy issues;
 - (b) the space is setback at least 1m from the extent of the external enclosing walls to the floor level below; and
 - (c) the space does not exceed 50% of the floor area of the storey immediately below or 18m², whichever is the lesser; and
 - (d) there is no other appropriate ground level space for outdoor recreation off a primary living room.

1.4 QUALITY BUILT FORM

In response to their local context, buildings need to be designed to respect the existing topography and relate to the rhythm and pattern of characteristic buildings in the prevailing streetscape. A comfortable and memorable street will be one where no one building or feature dominates.

Kerb and guttering, footpaths, fences, front gardens and the street frontage of buildings all contribute to the appearance of a street and influence how people feel in them and about them. Streets where people feel comfortable will exhibit consistency in these elements and relationships between the scale of these elements.

1.4.1 Context

Objectives

- O1 To ensure that the site layout and building design responds to the existing characteristics, opportunities and constraints of the site and within its wider context (adjoining land and the locality).

Provisions

- P1 Proposed developments must be designed to respond to the issues identified in the site analysis and in the relevant area character statement (refer to Part C of the DCP).

1.4.2 Subdivision pattern

Objectives

- O1 To ensure that the characteristic subdivision pattern remains apparent, even if lots are subdivided or amalgamated.

Provisions

- P1 Maintain lot sizes, shape and orientation identified in the relevant area character statement (refer to Part C of the DCP), or if not identified in the relevant area character statement, that are characteristic of the area.
- P2 Design and locate buildings to reinforce the characteristic subdivision pattern in the neighbourhood (i.e. walls of buildings are generally built parallel to the property boundaries).
- P3 Where lots have been amalgamated, the bulk of larger buildings must be articulated through the use of bays or indents on the original lot line.
- P4 Residential flat buildings using single-aisle parking should not be constructed on lots with a street frontage of less than 15m. If double-aisle parking is proposed, lots should have a street frontage of not less than 18m.

1.4.3 Streetscape

Objectives

- O1 To ensure that footpaths, kerb and guttering and street trees contribute to a consistent streetscape.

Provisions

- P1 All works within the road reserve must be undertaken in accordance with the *North Sydney Council Performance Guide* (refer to Part B: Section 20 – *Public Infrastructure* of the DCP).
- P2 All existing sandstone kerb and guttering must be retained and maintained.

- P3 Existing street trees are to be retained and protected by avoiding excavation or building within the drip line of the tree (refer to Part B: Section 16 - *Tree and Vegetation Management* of the DCP).
- P4 Plant new trees of the same species that are present in the street, or in accordance with guidelines or strategies adopted by Council.
- P5 Maintain a nature strip on-street if one exists.

1.4.4 Laneways

Objectives

- O1 To ensure that laneways are functional, attractive, safe and comfortable places for use by residents as part of their public space and pedestrian network.

Provisions

- P1 Where a laneway is the principal frontage to a property, dwellings are to address the lane (i.e. do not conceal the front façade of such buildings behind high walls, fences or garages).
- P2 The height of buildings facing laneways should respect the width of the lane (i.e. a one storey building generally provides the most appropriate scale). A two storey building ancillary to the main dwelling may be permitted adjacent to the laneway, but only if:
- (a) the laneway does not comprise the site's primary frontage; and
 - (b) the building does not result in any adverse impacts in terms of visual and acoustic privacy, overshadowing, heritage and an area's character.
- P3 Where a site has a sole frontage to a laneway, any 2 storey component of a building must be set back at least 10m from the laneway boundary.
- P4 Dwellings addressing laneways are to be provided with a reasonable level of privacy through design and landscaping (e.g. the use of obscure glazing and medium height shrubs that partially obscure windows).
- P5 Where car parking is only capable of being located at the boundary to the laneway, only open car spaces or carports will be permitted (i.e. roller doors are not permitted).
- P6 No more than 50% of the width of a laneway frontage may be allocated for car accommodation of any kind, or car park entrances.
- P7 Front fences are to be softened by planting trees and shrubs that hang over or through fences.
- P8 Existing trees on land that abut the laneway should be retained.
- P9 All new and rebuilt fences and structures (including car parking spaces) must be setback at least 1.2m from the laneway frontage. This setback is to be landscaped with appropriate low maintenance plants.

1.4.5 Siting

Objectives

- O1 To maintain the characteristic building orientation and siting.

Provisions

- P1 Buildings are to be sited in accordance with that described in the relevant area character statement (refer to Part C of the DCP), or if not identified in the relevant area character statement sited to relate to neighbouring buildings.
- P2 Site buildings within a single building form, addressing the street.



Residential Development

P3 Orient each external wall parallel to the corresponding boundary of the site, unless another orientation is characteristic.

1.4.6 Setbacks

Objectives

- O1 To reinforce the characteristic pattern of setbacks and building orientation within the street.
- O2 To control the bulk and scale of buildings.
- O3 To provide separation between buildings.
- O4 To preserve the amenity of existing dwellings and provide amenity to new dwellings in terms of shadowing, privacy, views, ventilation and solar access.

Provisions

Front

P1 The front setback must match the alignment of the primary facades of buildings on adjoining properties. Where different setbacks occur, the average of the setbacks of those primary facades is to be used.

Side

P2 Building setbacks are to comply with the requirements set out in Table B-1.5.

TABLE B-1.5 - Side Setback Requirements			
Zone	Development Types	Minimum Setback Requirement	
E4 – Environmental Living	Dwelling houses; Group homes; Seniors housing	1st storey (up to 4m)	900mm
		2nd storey (up to 7m)	1.5m
		3rd storey or higher (greater than 7m)	2.5m
R2 – Low Residential Density	Boarding houses; Dual occupancies; Dwelling houses; Group homes; secondary dwellings; Semi-detached dwellings; Seniors housing	1st storey (up to 4m)	900mm
		2nd storey (up to 7m)	1.5m
		3rd storey or higher (greater than 7m)	2.5m
R3 – Medium Residential Density	Attached dwellings; Boarding houses; Dual occupancies; Dwelling houses; Group houses; Multi dwelling housing; Secondary dwellings; Semi-detached dwellings; Seniors housing	1st storey (up to 4m)	900mm
		2nd storey (up to 7m)	1.5m
3rd storey or higher (greater than 7m)		2.5m	
	Residential flat buildings	3m; and The building must not exceed a building height plane commencing at 3.5m above ground level (existing) from side boundaries and projected internally to the site at 45° (refer to Figure B-1.3).	
R4 – High Residential Density	Attached dwellings; Dual occupancies; Dwelling houses; Group Homes; Secondary dwellings; Semi-detached dwellings;	1.5m; and The building must not exceed a building height plane commencing at 3.5m above ground level (existing) from side boundaries and projected internally to the site at 45° (refer to Figure B-1.3).	

TABLE B-1.5 - Side Setback Requirements		
Zone	Development Types	Minimum Setback Requirement
	Boarding houses; Multi-dwelling housing; Residential flat building; seniors housing	On land with a height limit of 12m or less 3m; and The building must not exceed a building height plane commencing at 3.5m above ground level (existing) from side boundaries and projected internally to the site at 45° (refer to Figure B-1.3).
		On land with a height limit greater than 12m 1st to 3rd storey (up to 10m) 4.5m Above 3rd storey 6m
B1 - Neighbourhood Centre	Boarding houses	0m, up to 4 storeys, but only where no window or other openings are provided on the side elevation of the building. Otherwise, the setbacks are to be as follows:
		1st to 3rd storey (up to 7m) 4.5m Above 3rd storey 6m
IN2 - Light Industrial	Boarding houses; Dwelling houses; Dual Occupancies; Attached dwellings; Group homes; Multi dwelling housing; Semi detached dwellings; Seniors housing;	0m, up to 4 storeys but only where no window openings are provided on that elevation of the building, otherwise the setbacks are to be as follows:
		1st to 3rd storey (up to 7m) 4.5m Above 3rd storey 6m

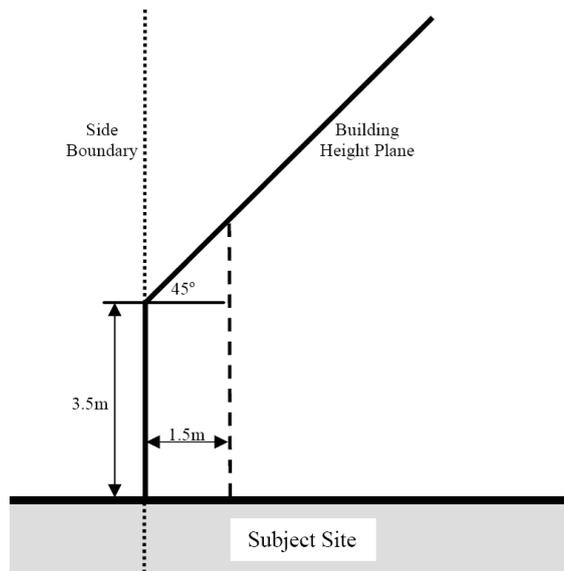


Figure B-1.3:

Setback and building height plane controls for the R4 High Density Residential zone, where the height limit is equal to 12m or less.

Note: The actual setback of the building may need to be increased to satisfy building separation requirements within cl.1.3.10 to Part B of the DCP.

P3 Despite P2 above, Council may grant consent to a development with a 0m setback to a side boundary. However, Council must not grant consent, unless the applicant has satisfactorily addressed the questions identified in the Land and Environment Court Planning Principle "Building to the side boundary in residential areas" established in

Residential Development

Galea v Marrickville Council [2003] NSWLEC 113 and consideration has been given to that statement. The Planning Principle is available to view on the Land and Environment Court's website (http://www.lec.justice.nsw.gov.au/planning_principles). The relevant questions are summarised as follows:

- (a) **Is the street characterised by terrace housing?** Building to the boundary is only considered appropriate in streets where the existing form of development is characterised by attached dwellings, semi detached dwellings and multi dwelling housing (e.g. villas and townhouses).
- (b) **What is the height and length of the wall on the boundary?** The length and height of any wall built to the boundary should be minimised to limit any adverse impacts in terms of overshadowing and visual privacy.
- (c) **Has the applicant control over the adjoining site(s) or the agreement of their owners?** Unrestricted access should be made to all components of a building which is built to the boundary to ensure that those components can be adequately maintained over its life.
- (d) **What are the impacts on the amenity and/or development potential of adjoining sites?** It must be adequately demonstrated above all else that building to the boundary will not result in any adverse amenity impacts or development potential of adjoining sites.
- (e) **Are there arrangements in place for the maintenance of the wall or gutters?** Access and maintenance arrangements should be in place before a development application is assessed by Council to avoid disputes later on.

P4 Where possible, side setbacks should match those on adjoining properties, or, if adjoining properties are not characteristic, with setbacks identified in the relevant area character statement.

Rear

P5 Provide rear building setbacks that match those on adjoining properties, or, if adjoining properties are not characteristic, with setbacks identified in the relevant area character statement.

P6 Despite P5 above, buildings within the *R4 High Density Residential* zone:

- (a) must be setback a minimum of 1.5m from the rear boundary; and
- (b) where the land is restricted by a height limit:
 - (i) of 12m or less, must not exceed a building height plane commencing at 3.5m above ground level (existing) rear boundary and projected at an angle of 45° internally to the site (refer to Figure B-1.3); or
 - (ii) in excess of 12m must be setback at least 4.5m from the rear boundary for the 1st to 3rd storeys of the building (no more than 7m above existing ground level) and 6m for any part of the building above the 3rd storey.

Note: The actual setback of the building may need to be increased to satisfy building separation requirements within s.1.3.10 to Part B of the DCP.

Laneways

P7 Despite P1, P5 and P6 above, all buildings and structures must be setback at least 1.2m from a laneway. This provision does not apply to side setbacks.

Building Separation

P8 In addition to the setback controls in P1-P7 above, residential flat buildings are required to provide adequate separation between habitable rooms, balconies and non-habitable rooms, in accordance with the provisions contained within s.1.3.10 to Part B of the DCP.

1.4.7 Form, massing & scale

Objectives

- O1 To ensure the size of new buildings are consistent with surrounding, characteristic buildings and they are not significantly larger than characteristic buildings.

Provisions

- P1 The height of buildings is not to exceed that stipulated within cl.4.3 to NSLEP 2013.
- P2 Where applicable, the number of storeys within a building should be consistent with that identified in the relevant area character statement (refer to Part C of the DCP).
- P3 The finished floor height of the ground floor level should not exceed 1m above ground level (existing), measured vertically at any point.
- P4 Finished floor to ceiling heights are a minimum of 2.7m. A lesser height may be permitted by Council, but only where the applicant can satisfactorily demonstrate that the dwelling is capable of receiving satisfactory natural daylight and ventilation (e.g. shallow apartments with large amounts of window area).
- P5 Facades of buildings which face any public street should not be dominated by large expanses of glass (i.e. facades should incorporate smaller door and window openings, so that glass does not dominate the façade).
- P6 Ancillary buildings (e.g. garages, carports, garden sheds, etc) are a much smaller scale than the residential building.
- P7 Residential flat buildings should use a pitched roof form to reflect the prevailing roof typology or that identified in the relevant area character statement (refer to Part C of the DCP).
- P8 Despite P7 above, Council may consider approval of a residential flat buildings with a flat roof, but only where:
 - (a) the development complies with the height requirements under P1 above; and
 - (b) where the top-most storey has been setback to comply with a 36 degree angle back from the top edge of the storey located immediately below (refer to Figure B-1.4).

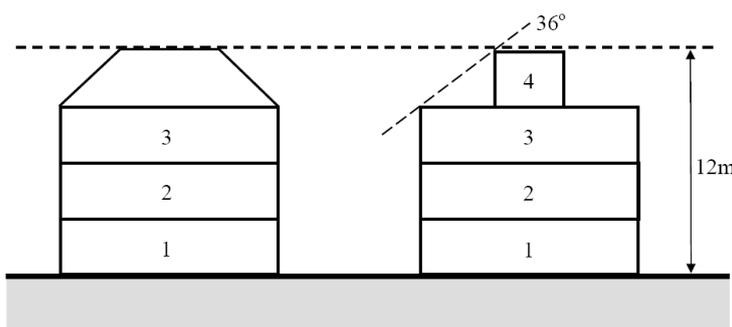


Figure B-1.4:
Residential flat building height controls

1.4.8 Built form character

Objectives

- O1 To ensure that the design of new buildings reflects and reinforces, or is complementary to, the existing character of the locality.
- O2 To ensure that alterations and additions to or the rebuilding of residential accommodation relying on existing use rights and that existing residential

Residential Development

accommodation exceeds the key built form controls applying to that land, that the new development does not result in increased negative impacts on the character of the locality or the amenity of adjoining dwellings.

Provisions

General

- P1 Where a building is part of a uniform group of buildings of similar character, locate any additions or alterations to the rear and not visible from the street or any public place. Council may permit alterations and additions to the front of a building, but only where those alterations and additions contribute to, or are sympathetic to the character of those buildings.
- P2 Where a building is to be located amongst buildings having a consistent façade, repeat the size, location and proportions of window, door openings and other distinctive features such as roof form.
- P3 Balconies are to be incorporated within the building envelope.
- P4 Where alterations and additions to or rebuilding of any residential accommodation relying on existing use rights are proposed, they must not result in the:
 - (a) material loss of views from other properties or public places, or
 - (b) material overshadowing of other properties or public places, or
 - (c) material loss of privacy to other properties, or
 - (d) increasing of the overall building height, or
 - (e) landscaped area of the development being below the requirements set out in the DCP, or further decrease the landscaped area where the landscaped area is already below the requirements of the DCP, or
 - (f) site coverage of the development exceeding the requirements set out in this DCP or further increase the site coverage where the site coverage is already above the requirements of this DCP.

Attached Dwellings / Multi-dwelling Housing

- P5 The layout of the development must not result in a "gun-barrel" form (e.g. long perpendicular driveways flanked by dwellings).
- P6 Where practical, each dwelling should be provided with an individual entrance from a public street or public place.
- P7 Developments should invoke a traditional row housing form fronting the street.

Residential Flat Buildings

- P8 Building facades should be modulated in plan and elevation and articulated to reduce the appearance of the building's bulk and to express the elements of the building's architecture.

1.4.9 Dwelling entry

Objectives

- O1 To provide a sense of address.
- O2 To provide safe access to dwellings and security for residents.

Provisions

- P1 The front door of dwellings and at least one window to a habitable room must be oriented to the street.



- P2 Dwelling entries should be clearly identifiable from the street, have adequate lighting and have direct access from the street frontage (e.g. do not conceal or substantially recess dwelling entries).
- P3 Street numbering must be clearly visible from the primary street frontage.
- P4 In multi-dwelling developments, each dwelling must be clearly marked by number and indicate at communal entry points (e.g. a stair or lift lobby) the numbers of the dwellings that are accessed from that entry point.
- P5 Where multiple external dwelling entries are provided to a single building, the building should be detailed or articulated so that individual dwellings can be easily identified from the street and avoid unintentional entry.
- P6 Multi-dwelling developments should provide disabled access through the principal entrance to the building, in accordance with Part B: Section 12 – Access of the DCP.

1.4.10 Roofs

Objectives

- O1 To ensure the provision of a characteristic roof typology through the use of similar forms, shapes and materials.

Provisions

- P1 Buildings should incorporate a pitched roof, except where another roof form is identified in an area character statement (refer to Part C of the DCP) for the neighbourhood, or as being compatible with the characteristic roof form for the neighbourhood.
- P2 Roofs should be similar in form and utilise similar materials to those identified in the relevant area character statement (refer to Part C of the DCP), or if not identified in the relevant area character statement that positively relates neighbouring buildings.
- P3 Roofs should be pitched generally between 25 degrees and 36 degrees, and preferably within the lower end of this range at an angle of 27-28 degrees.
- P4 Despite P3 above, Council may grant consent to a building with a roof pitch less than 25 degrees to maintain views or to correspond with a particular building design.
- P5 Flat or skillion roofs may be considered, where they are provided to the rear of buildings and not seen from the primary street frontage.
- P6 Use terracotta tiles, slate or corrugated iron where appropriate.
- P7 Avoid locating solar panels on the street elevation of a roof. They should be located towards the rear of the property as far as possible.
- P8 Minimise roof projections and internalise roof access.
- P9 If an attic is proposed, it must not exceed more than 50% of the floor area of the storey, immediately below.
- P10 Wherever possible, buildings are designed to include a north facing roof where a solar hot water system or photovoltaic solar panel may be installed.

1.4.11 Dormers

The roof line of a building is one of its most dominant features and it is important that any proposal to change the shape, pitch cladding or ornament of a roof is very carefully considered. This is particularly important within heritage conservation areas, where the change to one property can have an adverse affect on the appearance or character of a whole street.

Traditionally, dormers were conceived and constructed as part of the original building design, but many have been added at a later date to allow the better use of attic space. Whether by

Residential Development

design or accident, dormers were usually accommodated without generally upsetting the balance of the roof. Recently however, dormers have been incorporated with the sole purpose of maximising of floorspace as the primary consideration.

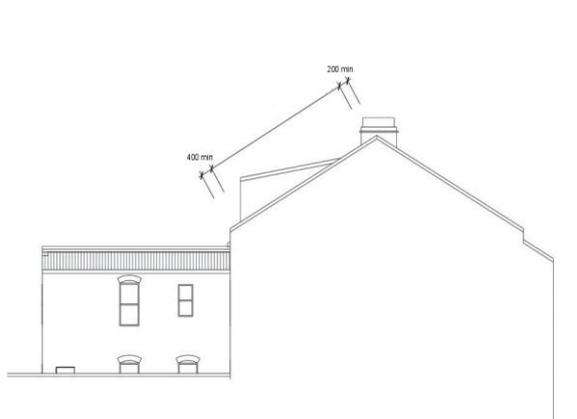


Figure B-1.31
Dormers are to be set below the main ridge line.

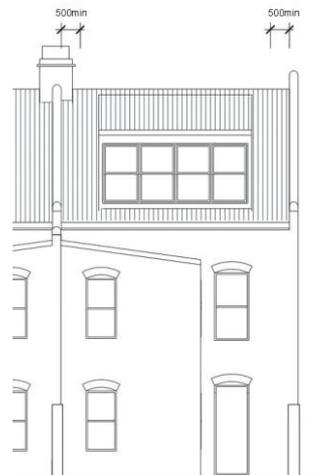


Figure B-13.32
Dormers should be inset from party walls.

Objectives

- O1 To ensure that the location, design, pitch and scale of any dormer is appropriate to the building and roof form to which it is attached, is in character with the area and does not result in any negative impacts on the amenity of adjoining properties.

Provisions

- P1 Dormers must be appropriate to the style of building to which it is attached, and their style should reflect that which is characteristic of the neighbourhood.
- P2 Dormers may be permitted, where it can be demonstrated that:
 - (a) there will be no significant impacts on privacy to adjoining properties;
 - (b) it will not result in any adverse impacts to the significance of any heritage item or heritage conservation area;
 - (c) the existing ridge line will be maintained, and any additions will be set below the ridge line;
- P3 Dormers on the street elevation of a building must not comprise more than $\frac{1}{3}$ of the width of the roof plane upon which they are placed, excluding laneways.
- P4 Rear dormers or roof additions must be set back a minimum of 200mm from the ridge line, 500mm from party walls and 400 mm from the rear wall as shown in Figures B-1.31 and B-1.32.
- P5 Dormers will not be permitted, if it results in the need to alter the pitch or ridge height of the roof to accommodate the dormers.
- P6 Dormers must not exceed a height of more than 1.5m from its base to its ridge where it faces the street.
- P7 Dormers must be contained within the relevant building envelope applying to the land.



P8 Balconies are not permitted off dormers which are located on any street elevation, excluding rear laneways. Balconies off dormers may only be considered in any other instance, providing there are no privacy impacts.

P9 The sides of dormers must not contain glass.

1.4.12 Colours and materials

Objectives

O1 To ensure new buildings reflect and reinforce the existing and desired character of a locality.

Provisions

P1 Buildings should use colours, finishes and materials identified in the relevant area character statement (refer to Part C of the DCP), if provided.

P2 Natural colours and muted and earth tones should be used for major areas of the building, such as walls and roof, with stronger colours restricted to smaller features, such as window frames, doors and decorative features.

P3 Avoid the extensive use of reflective glass, reflective metal and plastics on the exterior of buildings.

P4 Buildings should incorporate a high proportion of masonry to glass as follows - if a vertical or horizontal line is drawn in any position on any façade it should not pass over more than 50% of glass, or 75% of clear opening and glass.

P5 Solar panels should be integrated into dwelling design where possible.

1.4.13 Balconies - Apartments

Objectives

O1 To ensure the provision of functional private open space for apartments.

Provisions

P1 Apartments must be provided with at least one balcony with a minimum depth of 2m and a minimum area of 8m² (n.b. best practice standard for balcony size is 15% of the floor area³ of the apartment).

P2 If an apartment is not provided with a balcony, the size of the apartment should be increased by a minimum of 8m² (i.e. the apartment size being increased by the minimum balcony size).

P3 Balconies must be incorporated within building envelope (as specified by setbacks and or building height plane) and should not be located on roofs, podiums or be cantilevered.

P4 Balconies should be integrated into the overall architectural form and detail of the building.

P5 No balconies, verandahs or the like are to project over the public domain.

P6 Where a proposal involves the conversion of an existing commercial building, and that commercial building's envelope does not comply with the setback and/or building envelope controls for the site, any new balcony must not project beyond the existing building's envelope.

P7 Balconies should not be enclosed.

³ Balconies are not included within total floor area of an apartment.

Residential Development

- P8 Notwithstanding P7, Council may permit the enclosure of a balcony, but only if:
- (a) the building is predominantly characterised by enclosed balconies; or
 - (b) if the building is not predominately characterised by enclosed balconies, subject to the approval of a balcony strategy for the building.
- P9 A balcony strategy should:
- (a) include details outlining the size, scale and choice of materials of the proposed enclosure/s); and
 - (b) be adopted by the body corporate before being submitted to Council.

1.4.14 Front fences

This subsection of the DCP applies to fences which are located between the front property boundary and the street elevation of the building.

Objectives

- O1 To ensure that front fences contribute to a characteristic pattern of fences.
- O2 To enable causal surveillance of the public domain, minimising the potential for criminal activities to occur.
- O3 To provide visual and acoustical privacy.
- O4 To minimise their dominance on the street and contribute to a garden setting.

Provisions

- P1 Front fences and side fences located between the street frontage and its respective building line are not to exceed 1m in height. Where sites have a dual street frontage, consideration may be given to higher side fences to provide privacy.
- P2 Fences should be designed and constructed with materials similar to those identified in the relevant area character statement (refer to Part C of the DCP), if provided.
- P3 The design of the fence should not obscure views of the building and garden areas from the street.
- P4 Transparent fences (i.e. comprising no more than 50% solid construction – measured vertically across its entire length) must not exceed 1.5m in height, unless otherwise indicated in this DCP.
- P5 Solid fences (e.g. masonry, lapped and capped timber, brushwood) must not exceed 1m in height, unless otherwise indicated in this DCP.
- P6 Despite P4 and P5 above, Council may permit a higher fence in the following instances:
 - (a) Where the scale and or heritage value of the property are appropriate for a higher fence, Council may allow a fence up to 1.5m in height but only where that part of the fence over 1.2m is of open construction.
 - (b) Where traffic noise is likely to cause an adverse impact on the privacy of the residence, Council may permit a fence up to 1.8m in height of solid construction on land fronting the following streets:
 - (i) Bannerman Street;
 - (ii) Belgrave Street;
 - (iii) Brook Street;
 - (iv) Chandos Street, between Oxley and Brook Streets;
 - (v) Clarke Street;
 - (vi) Ernest Street;

- (vii) Falcon Street;
- (viii) Gerard Street;
- (ix) Harriette Street;
- (x) High Street, between Warringah Expressway and Clarke Road;
- (xi) Kurraba Road, between Clarke and Wycombe Road;
- (xii) McPherson Street;
- (xiii) Miller Street;
- (xiv) Military Road;
- (xv) Murdoch Street;
- (xvi) Pacific Highway;
- (xvii) River Road;
- (xviii) Shirley Road between, River Road and the Pacific Highway;
- (xix) Wycombe Road; or
- (xx) any other street where the traffic volume exceeds 5,000 movements a day.

- P7 Fences should incorporate setbacks from the boundary of the site and be articulated to minimise their visual impact.
- P8 Must not reduce the significance of any heritage item or heritage conservation area.
- P9 Soften the appearance of solid fences by:
- (a) providing a continuous landscaped area of not less than 600mm wide on the street side of the fence or
 - (b) the use of openings, variation in colour, texture or materials to create visual interest.
- P10 Match the height of transparent fences (such as metal grille) to the characteristic height in the street.

1.5 QUALITY URBAN ENVIRONMENT

The design, site layout and facilities of residential development should meet the needs of future residents and allow them to enjoy a reasonable standard of living, without having adverse affects on those residents, on residents of existing development or on the wider community and environment.

1.5.1 High quality residential accommodation

Objectives

- O1 To provide a high level of internal amenity for those who reside in the building.

Residential Development

Provisions

- P1 Dwellings within multi dwelling housing or residential flat buildings must be designed to provide the following minimum internal areas⁴:
 - (a) Studio 35m²
 - (b) 1 bedroom 50m²
 - (c) 2 bedrooms 70m²
 - (d) 3+ bedrooms 90m²
- P2 Include courtyards, balconies and gardens as the principal open space area for residents.
- P3 Communal corridors must have a minimum width of 2m to facilitate movement (i.e. no right angled corners).
- P4 No more than 8 dwellings are to be accessible from a single common lobby space.
- P5 Avoid the use of double loaded corridors.
- P6 The depth of a habitable room from a window, providing light and air to that room, must not exceed 10m.
- P7 Apartments must provide a minimum width of 4m. An apartment's width should increase relative to an increase in its depth.
- P8 The depth of a single aspect apartment must not exceed 8m from a window.
- P9 The habitable space serviced by a window is no more than 10 times the glazed area of the window.
- P10 At least 60% of apartments are to be provided with cross ventilation (i.e. window openings that face different directions. Refer to Figures B-1.5 - B-1.8). For apartments with no cross ventilation, ceiling fans must be provided.
- P11 The amount of glazing on eastern and western elevations is to be minimised and incorporate external shading devices.

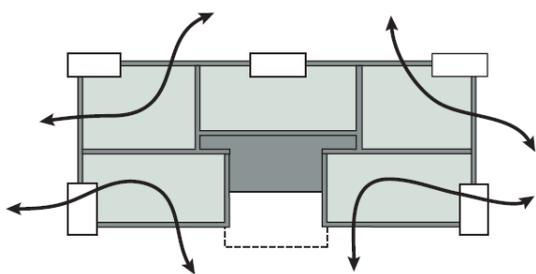


Figure B-1.5:
Corner apartments can achieve effective natural cross ventilation

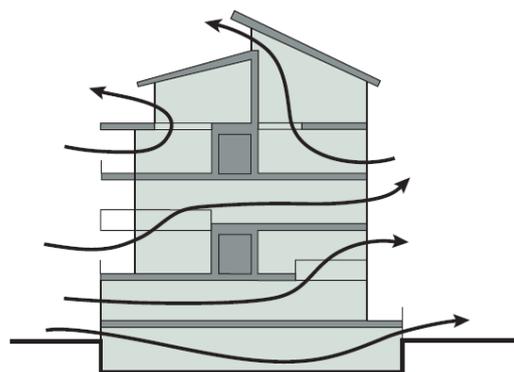


Figure B-1.6:
Good cross ventilation can be achieved with cross over apartments, maisonette apartments and semi-basement carparks

⁴ Minimum internal space excludes balconies, garages and ancillary storage space. For multi-dwelling developments with one predominant dwelling type strict compliance with minimum space is required.

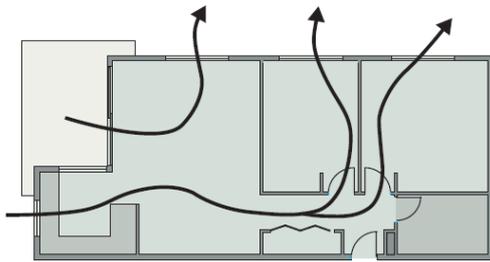


Figure B-1.7:

Natural ventilation in this corner apartment is drawn through windows having different orientation. This layout works well in upper floor apartments

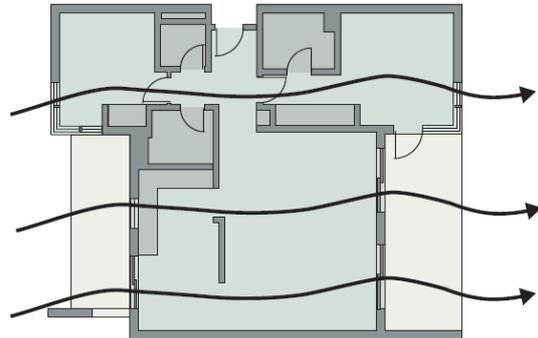


Figure B-1.8:

This optimal layout allows air flow directly from one side of the apartment to the other

1.5.2 Lightwells and Ventilation

Objectives

- O1 To ensure that dwellings are provided with sufficient natural solar access and ventilation, where the provision through conventional means (i.e. windows) is adversely restricted or compromised.

Provisions

- P1 Council does not support the use of lightwells for the provision of light and ventilation to dwellings. However, Council may consent to the use of lightwells, but only if the following criteria are satisfactorily met:
- (a) the lightwell does not provide the primary source of natural daylight and ventilation to any habitable room of a dwelling within the development; and
 - (b) the dimensions of the lightwell comply with the building separation requirements set out in P5 to s.1.3.10 to Part B of the DCP (e.g. if non-habitable rooms face into a lightwell under 12m in height, the lightwell should measure 6m x 6m in plan); and
 - (c) the lightwell is directly connected at ground level to streets or lanes in buildings greater than 30m in height to allow air movement in the lightwell; and
 - (d) all building services (e.g. utility installations, pipes, cabling and the like) are concealed and not overlooked by principal living rooms or bedrooms; and
 - (e) the lightwell is fully open to the sky.
- P2 Despite P1(b) above, a lesser dimension may be considered, but only if it can be satisfactorily demonstrated that acoustic privacy, visual privacy and daylight access to all dwellings can be provided.
- P3 Alternative methods of ventilation of dwellings may be considered, but only if it can be satisfactorily demonstrated that there is no impact on privacy, noise, and fire safety.
- P4 If an alternative method of ventilation is proposed, submit a ventilation report by a certified ventilation consultant in accordance with the AS 1668, which recommends that the minimum natural cross ventilation rate of airflow should be 60L/s and the minimum removal of excess heat should be 10 air changes per hour, to provide reasonable comfort to occupants.

1.5.3 Safety and security

Objectives

- O1 To ensure a high level of personal safety for people who use or visit the building.

Provisions

- P1 Maximise views of the street and dwelling entries and communal areas within the development (from dwelling entries, windows and balconies).
- P2 Limit the number of dwellings sharing one entry or lobby to 10 dwellings.
- P3 Maintain sight lines along pathways (i.e. avoid blind corners or hiding places).
- P4 Use design, materials and features (such as street furniture, pavers, fencing and landscaping) to clearly distinguish public, communal and private domains.
- P5 In public areas, use materials that discourage vandalism (i.e. non-porous surfaces such as glazed ceramics or treated masonry).
- P6 Install locks on doors and windows, viewers to doors.
- P7 Roller shutters should not be installed on windows or doors.
- P8 Provide lighting to communal areas (laundries, garbage storage, pathways, lobbies, car parking areas and stairwells).
- P9 Locate shared facilities in areas that will be well used.

1.5.4 Vehicular Access & Car Parking

Objectives

- O1 To provide adequate on-site car parking for residents.
- O2 To ensure adequate access for all vehicles.
- O3 To maintain garden settings.
- O4 To minimise adverse visual impacts on the appearance of the street or building.

Provisions

Quantity

- P1 Comply with the parking requirements within Part B: Section 10 – *Car Parking and Transport* of the DCP.

Location

- P2 All parking associated with multi dwelling housing and residential flat buildings must be provided underground (i.e. within a basement).
- P3 All parking for attached dwellings, detached dwellings, dual occupancies or semi-detached dwellings must not be provided underground, unless site conditions dictate that this is the only or most appropriate solution for parking provision.
- P4 Where security doors/gates are proposed, an intercom system to facilitate visitor/service access to underground parking areas must be provided.
- P5 Design accessways, driveways and parking areas to:
- (a) enable vehicles to enter the parking space or garage in a single turning movement;
 - (b) enable vehicles to leave the parking space in no more than two turning movements;
 - (c) enable vehicles to avoid queuing on public roads;



- (d) comply with AS 1428.2 Design for Access and Mobility; and
 - (e) comply with the requirements of vehicular crossings and driveways as set out in s.20.4 to this Part of the DCP.
- P6 Parking areas must be designed to enable cars to enter and leave the site in a forward direction.
- P7 Driveway and pedestrian access must be separated.
- P8 The use of car spaces within a development is restricted to the occupiers of that development.
- P9 Visitor car parking spaces must be designated as common property.
- P10 Garages, carports or other like parking structures must not be located between the primary street frontage and the primary street façade of the building.
- P11 A single car parking space (i.e. not within a garage, carport or other structure) may be located between the primary street frontage and the primary street façade of the building, but only if:
- (a) no other on-site parking exists or is possible;
 - (b) no rear laneway exists to provide vehicle access from the laneway rather than from the street;
 - (c) no demolition or partial demolition of the property is required to cater for the space;
 - (d) any excavation required is minimal in comparison to the area of the parking space;
 - (e) on-street parking is constrained by commuter parking and/or RMS clearways;
 - (f) the parking space is uncovered;
 - (g) porous materials are used for the parking space's surface;
 - (h) landscaped area complies with the minimum requirements under s.1.5.5 to this Part of the DCP, or if it is already less than the minimum requirement, the landscaped area is not further reduced;
 - (i) adequate space to fit vehicles within the property boundary exists to avoid overhang onto the footpath;
 - (j) it complies with AS 2890.1.

Access

- P12 Provide vehicular access, directly from a public road, to any allotments to be created by subdivision.
- P13 Where site has frontages to both a street and a rear laneway, vehicular access should be provided from the laneway rather than the street.
- P14 Do not compromise streetscape, building form and landscaped area, or heritage significance through the provision of vehicle access.
- P15 Where there is no parking on an original lot, and on-site parking is not characteristic, do not introduce vehicle access from the street.
- P16 Limit the width of vehicle access to 2.5m and locate to one side of the property, or to side or rear of the building if possible.
- P17 Provide a minimum of 5.5m between gates or doors to parking areas and the boundary to allow a car to stand within the property boundary while the gates/doors are opening.
- P18 If security gates/doors are to be used, provide an intercom to allow access for visitors.



Residential Development

- P19 Set back any development, including fences, at least 1.2m from a boundary with a laneway to provide adequate turning space.
- P20 Widen the laneway, as required, for attached dwelling development or residential flat buildings.

1.5.5 Site Coverage

Objectives

- O1 To ensure that development is balanced and in keeping with the optimum capacity of the site with no over development.
- O2 To ensure that development promotes the existing or desired future character of the neighbourhood.
- O3 To control site density.
- O4 To limit the building footprint so as to ensure adequate provision is made for landscaped area and private open space.

Provisions

- P1 Maximum site coverage must be in accordance with Table B-1.6.

TABLE B-1.6: Maximum Site Coverage Requirements		
Residential Development Type	Lot Size (m ²)	Site Coverage (max)
Detached dwelling, semi detached dwelling, attached dwelling (including any secondary dwelling if provided)	0-229	60%
	230-499	50%
	500-749	40%
	750-999	35%
	1000+	30%
Dual Occupancy	All	45%
Multi-dwelling housing	All	50%
Residential Flat Building	All	45%

- P2 For the purposes of P1, the following items are considered to constitute site coverage:
 - (a) buildings as defined by the [EP&A Act 1979](#);
 - (b) garages and carports;
 - (c) sheds;
 - (d) enclosed / covered balconies, decks, pergolas and the like;
 - (e) swimming pools, spa pools and the like;
 - (f) other structures including:
 - (i) permanent BBQ structures;
 - (ii) cabanas;
 - (iii) external staircases;
 - (iv) gazebos;
 - (v) greenhouse/glasshouse;
 - (vi) plant rooms;

- (vii) rainwater tanks;
- (viii) ramps;
- (ix) garbage storage facilities.

However, site coverage excludes:

- (g) any basement;
- (h) any part of an awning that is outside the subject site;
- (i) any eaves;
- (j) unenclosed balconies⁵, decks, pergolas and the like;
- (k) paving and patios (porous and non-porous);
- (l) driveways and car stand areas (porous and non-porous);
- (m) water features; or
- (n) anything else defined as landscaped area.

P3 For the purposes of P1, the area of any access handle, access way or right of carriageway is to be excluded from the calculation of site area and site coverage.

1.5.6 Landscape Area

Objectives

- O1 The specific objectives of the landscaped area controls are to:
- (a) promote the character of the neighbourhood;
 - (b) provide useable private open space for the enjoyment of residents;
 - (c) provide a landscaped buffer between adjoining properties;
 - (d) maximise retention and absorption of surface drainage water on site;
 - (e) minimise obstruction to the underground flow of water;
 - (f) promote substantial landscaping, that includes the planting of trees that when mature will have significant canopy cover;
 - (g) control site density;
 - (h) minimise site disturbance;
 - (i) contributes to streetscape and amenity;
 - (j) allows light to penetrate between buildings;
 - (k) encourage the provision of space for biodiversity conservation and ecological processes; and
 - (l) provide a buffer between bushland areas and development.

Provisions

- P1 Provide minimum landscaped area and maximum un-built upon areas in accordance with Table B-1.7.

⁵ Balconies which are open on more than 1 side and are not located under the roof line of the building or a balcony directly above.

Residential Development

TABLE B-1.7: Minimum Landscaped Area and Un-built Upon Area Requirements			
Residential Development Type	Lot Size (m ²)	Landscaped Area (min)	Un-built Upon Area (max)
Detached dwelling, semi detached dwelling, attached dwelling (including any secondary dwelling)	0-229	20%	20%
	230-499	30%	20%
	500-749	40%	20%
	750-999	45%	20%
	1000+	50%	20%
Dual Occupancy	All	40%	15%
Multi-dwelling housing	All	30%	20%
Residential Flat Building	All	40%	15%

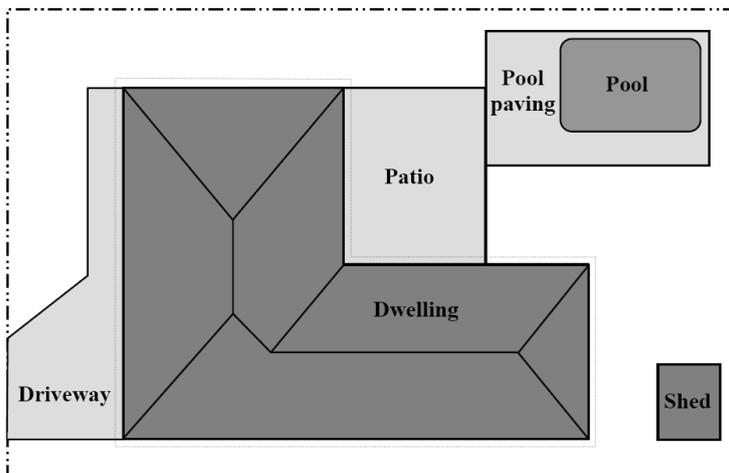


Figure B-1.9:

Areas of "landscaped area", "site coverage" and "unbuilt upon area".

LEGEND

-  Site
-  Landscaped Area
-  Site Coverage
-  Un-built upon area

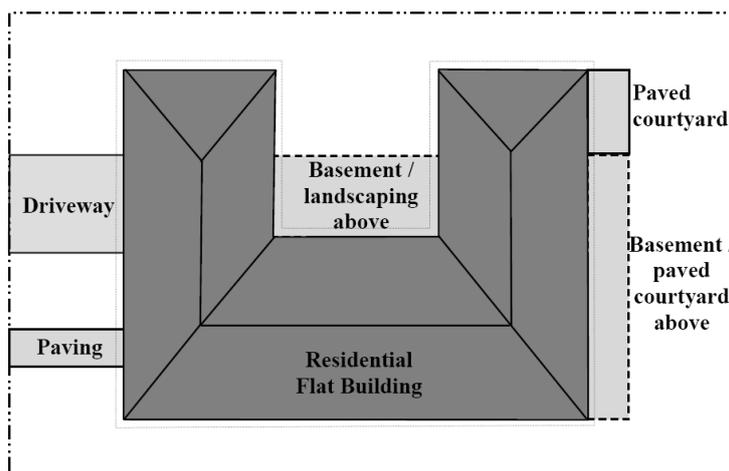


Figure B-1.10:

Areas of "landscaped area", "site coverage" and "unbuilt upon area".

LEGEND

-  Site
-  Landscaped Area
-  Site Coverage
-  Un-built upon area

P2 For the purposes of P1:

- (a) Landscaped area is considered to comprise all parts of a site used for growing plants, grasses and trees, but does not include any building, structure or hard paved area⁶;

⁶ Landscaping located above a basement or on the roof of a building does not constitute "landscaped area".

- (b) The area of any access handle, access way or right of carriageway is to be excluded from the calculation of site area, landscaped area and un-built upon area; and
- (c) the following items are considered to constitute un-built upon area:
- (i) any part of a basement which does not comprise site coverage;
 - (ii) unenclosed balconies⁷, decks, pergolas and the like;
 - (iii) paving and patios (porous and non-porous);
 - (iv) driveways and car stand areas (porous and non-porous); or
 - (v) water features.

However, un-built upon area excludes:

- (vi) anything else defined as site coverage; or
 - (vii) anything else comprising landscaped area.
- P3 Avoid creating landscaped areas that are broken into a series of small fragmented unusable areas.
- P4 Establish a significant landscaped setting for pathways and paved areas.
- P5 Use planting to create a buffer against cold winter winds (generally westerly), or to direct cooling breezes in summer (generally north easterly), into living areas of dwellings.
- P6 Locate driveways and pathways at least 500mm from common boundaries.
- P7 Provide screen planting, including trees, within the 1.5m setback from the common boundary.
- P8 Retain existing mature vegetation and trees and show what measures are to be implemented to protect this vegetation during construction (refer to Part B: Section 16 – *Trees and Vegetation Management* of the DCP).
- P9 Vegetation and landscape elements should be selected and designed to avoid overshadowing existing solar panels or roof spaces which are capable of accommodating solar panels.
- P10 Use pervious materials or stepping stones where pathways are incorporated within side setbacks.

1.5.7 Landscaping

Objectives

- O1 Landscaping and planting satisfies minimum performance standards and is sustainable and appropriate to the site.
- O2 Landscaping should not adversely impact upon the amenity and usability of adjoining properties.
- O3 To encourage biodiversity conservation and ecological processes.
- O4 To provide a buffer between bushland and development.

Provisions

- P1 Development on properties in proximity to bushland must be consistent with the requirements of Part B: Section 15 - *Bushland* of the DCP.

⁷ Balconies which are open on more than 1 side and are not located under the roof line of the building or a balcony directly above.

Residential Development

Note: Refer to the Bushland Buffer Map in Appendix 4 to this DCP to determine if the subject property is located in proximity to bushland.

- P2 Retain existing trees wherever practical.
- P3 Avoid works which are to occur within the drip line of any tree that has a height greater than 6m, or a girth greater than 1m, measured 1m above the base of the tree.
- P4 Where a development proposes to incorporate plant containers, they should have a minimum diameter of 110mm and a minimum depth of 135mm.
- P5 Developments should incorporate locally occurring native species to reduce water and fertilizer requirements.
- P6 Achievement of maximum density, pursuant to Council’s controls, will be subject to retention of significant trees (as identified by Council) and other important topographic features.
- P7 Minimise disturbance of natural ground levels, native vegetation and topography in the vicinity of identified significant trees.
- P8 New hedges must not result in the unreasonable reduction of access to sunlight or views. A condition may be imposed on a development consent which may restrict the maximum height of a hedge.
- P9 Trees should provide at least 50% canopy cover over landscaped areas at maturity.
- P10 Plant the largest growing and longest lived tree species appropriate to the site conditions.
- P11 Council encourages the incorporation of green walls into developments where appropriate.

Notes: Refer to the North Sydney Council Green Roof and Wall Resource Manual for technical guidance on the design, construction and maintenance of green walls.

1.5.8 Front gardens

Objectives

- O1 To maximise water infiltration on a site.
- O2 To soften the built form.

Provisions

- P1 The entire front setback must not be paved or concreted.
- P2 Where car parking and driveways are located in the front yard, use the minimum amount of paving as practicable.
- P3 Allow private gardens to merge with those adjoining and support the landscape character of the area.
- P4 Plant trees and shrubs that will hang over or through fences.
- P5 Complement the existing landscape character of the street, including street planting undertaken through Council’s Street Tree Strategy (refer to Part B: Section 16 – *Tree and Vegetation Management* of the DCP).
- P6 Design front gardens that will soften and complement the view of buildings from the street and surrounding properties.
- P7 Avoid medium height, dense planting around dwelling entries.

1.5.9 Private and Communal Open Space

Objectives

- O1 To ensure residents are provided with a reasonable level of outdoor amenity.

O2 To ensure private open space is of sufficient size to be useable.

Provisions

P1 Must provide minimum private open space areas in accordance with Table B-1.8.

TABLE B-1.8: Minimum Private Open Space Requirements				
Residential Development Type	Lot Size (m ²)	Minimum area at ground level (m ² /dw)	Minimum area above ground level (m ² /dw)	
<i>Detached dwelling, semi detached dwelling, attached dwelling</i>	0-229	40m ²	NA	
	230-499	40m ²	NA	
	500-749	50m ²	NA	
	750-999	50m ²	NA	
	1000+	70m ²	NA	
<i>Dual occupancy</i>	All	40m ²	NA	
<i>Multi-dwelling housing</i>	All	35m ²	8m ²	
<i>Residential flat building</i>	All	25m ²	Studio	4m ²
			1 - Bed	8m ²
			2 - Bed	10m ²
			3 + -Bed	12m ²

P2 Usable private open space areas should be located to the rear or over the northern portion of the site to maximise privacy and solar access.

P3 Where private open space areas are to be provided at ground level, it must have a minimum dimension of 4m, or a minimum dimension of 2m where provided above ground level, or 2.4m where it applies to a 3+ bedroom apartment.

P4 Private open spaces should be located such that they are directly accessible off a main living area of the dwelling.

P5 In addition to the requirements of P1, multi-dwelling developments are encouraged to provide communal open space areas to encourage social interaction.

Notes: It is considered best practice to provide communal open space areas in the order of 25% to 30% of the site area. A reduction in this requirement could be considered acceptable where private open spaces in excess of the minimum requirements are provided.

1.5.10 Swimming pools and spas

Objectives

O1 To minimise the visual impact of swimming pools and spas.

O2 To minimise the acoustic impacts on residents of adjoining properties.

O3 To minimise the use of potable water supplies.

Provisions

P1 Pools, spas and any associated structures (such as pool coping levels, surrounding decks and the like) are not to exceed 500mm above ground level (existing). Compliance with this requirement requires the applicant to illustrate the proposed RLs against spot RL's provided on the site survey plan.

P2 The application must be accompanied by cross section plans of the proposed pool through both axis demonstrating proposed finished levels of the pool and surrounds in



Residential Development

relation to existing ground levels, the boundaries of the site, and the ground levels (existing) on adjacent sites.

- P3 Pools and any associated structure must be set back a minimum of 1.2m from any property boundary.
- P4 Pools and any associated structures must be set back a minimum of 6m from any habitable room within a dwelling on an adjoining property.
- P5 Where illumination of the pool is proposed, use low level lighting only and direct away from adjoining properties.
- P6 Locate any associated pool equipment in close proximity to the principal dwelling.
- P7 A water tank must be installed and be of sufficient capacity to ensure that the pool can be topped up to the manufacturer’s recommended level without the need to rely on potable water supplies. This requirement is over and above any additional requirements associated with P3, P4 and P5 to s.1.6.9 to this Part of this DCP relating to water conservation and water tanks. The tank must be fed by down pipes from a minimum of 50m² of roof area of the dwelling on the site. The size of the water tank must be provided in accordance with that specified in Table B-1.9.

Pool Size (litres)	Rainwater tank size (litres)
<20,000l	1,500l
20,000-40,000l	3,000l
>40,000l	Complies with BASIX

- P8 A pool cover must be installed where a proposed development includes a swimming pool or spa.

1.5.11 Tennis courts

Objectives

- O1 To minimise adverse affects on residents of adjoining properties.

Provisions

- P1 Must be setback a minimum of 1.5m from any property boundary.
- P2 Must be setback a minimum of 6m from any habitable room of a dwelling on an adjoining property.
- P3 A landscape screen should be provided between a tennis court and adjoining properties and the colour of any associated fencing should be black to blend with landscaping and to minimise disruption to views.
- P4 Must not be floodlit.
- P5 All stormwater run-off should be detained on-site before draining to Council’s stormwater system.
- P6 The surface of the tennis court should not be located more than 500mm above or below ground level (existing).

1.5.12 Garbage storage

Objectives

- O1 To minimise any adverse affects on residents and the wider community by ensuring that adequate garbage storage and holding areas are provided which are conveniently accessible for residents and garbage contractors.
- O2 To ensure developments are designed to maximise resource recovery through waste avoidance, source separation and recycling.

Provisions

Waste Receptacles

- P1 Each dwelling must be provided with a waste storage cupboard within the kitchen, capable of accommodating at least 2 days of waste and to enable the source separation of garbage, recyclables and compost within separate containers.
- P2 On-site garbage storage areas must be provided which are capable of accommodating at least the number of garbage and recycling bins indicated in Table B-1.10.

TABLE B-1.10: Waste bin requirements		
No. of dwellings	No. of garbage bins required	No. of recycling bins required
1-3 dwellings	1 x 80L bin / dw*	1 x 140L commingled mobile bin / dw
4-12 dwellings	1 x 80L bin / dw or 1 x 240L bin / 3 dws or part thereof	2 x 240L comingled mobile recycling bin each colour coded and dedicated specifically for paper and co-mingled glass/plastic bottles and cans
13 or more	1 x 240L bin / 3 dws 660L bins permitted	2 x 240L mobile bins / 15 dws or part thereof 660L bins permitted colour coded and dedicated specifically for paper and co-mingled glass/plastic bottles and cans

* dw = dwelling

- P3 Notwithstanding the rates to P2, Council may permit a reduction in the number of bins required, but only if a garbage compactor is required or proposed to be incorporated within the development.
- P4 All multi-dwelling developments containing a lift must provide:
 - (a) a garbage chute leading to a central garbage storage room that has a waste compaction unit attached with a minimum compaction ratio of at least 2:1; and
 - (b) an interim recycling room with a minimum dimension of 1.5m square on each level of the building, with at least one point of access to the garbage chute, which is provided with space to accommodate 1 x 240 litre bin for the separate collection of recyclable materials.
- P5 Multi-dwelling developments which do not contain a lift, but propose to incorporate a garbage chute, must comply with the requirements of P4(a) and P4(b).
- P6 A garbage storage area should be located within 2m of the street boundary.



Residential Development

P7 Notwithstanding P6 above, a garbage storage area may be located anywhere on a site, but only if a garbage collection area, capable of accommodating all of the required bins for the entire development is located within 2m of the street boundary.

Location

- P8 If the garbage storage area is to be the collection point, provide clear and unimpeded access that is no more than 2m from the street boundary entrance to the site.
- P9 Ensure that the garbage storage area is easily accessible from all parts of the building and from the collection area.
- P10 Locate and design garbage storage areas to complement the streetscape.
- P11 Ensure garbage/recycling bins/green waste bins/general household bulky waste clean-up materials will not be visible from the street in the garbage storage area.
- P12 Where possible integrate garbage storage areas with the building.
- P13 Do not place structures for garbage storage areas that are more than 1m high on the boundary or within the front building line.
- P14 Garbage facilities are to be designed and constructed in accordance with Council's Waste Management Guide (refer to Appendix 3 of this DCP).

1.5.13 Site facilities

Objectives

- O1 To ensure that site facilities are unobtrusive, integrated into developments, provide for needs of residents and reduce impact of development on the environment.

Provisions

- P1 Provide open air clothes drying facilities in a sunny location, which is adequately screened from streets and public places and receives no less than 2 hours of direct sun per day.
- P2 Provide a lockable mailbox, for each dwelling, close to the main pedestrian entry to the dwelling or building.
- P3 Provide no more than one telecommunications/TV antenna per residential building.
- P4 Provide ancillary storage facilities within residential flat buildings at the rates outlined in Table B-1.11 and linked to each dwelling through provisions of the relevant Strata Plan (at least 50% within the apartment).

TABLE B-1.11: Residential storage	
Dwelling Size	Minimum Storage Rate
Studio	4m ³
1 bedroom dwelling	6m ³
2 bedroom dwelling	8m ³
3+ bedroom dwelling	10m ³

1.5.14 Servicing of new lots

Objectives

- O1 To ensure new lots are adequately serviced.

Provisions

- P1 Applicant's must demonstrate how the site is to be serviced for gas, water, electricity, drainage, sewerage, telephone and storm water removal, including any easements that need to be created and practical access for long term maintenance.
- P2 All new allotments must provide gravity drainage to the nearest street gutter or inter-allotment drainage system.

1.6 EFFICIENT USE OF RESOURCES

Nearly half the energy consumption in buildings is through heating, cooling, ventilation and lighting. By incorporating passive solar design and technologies that reduce energy consumption it is possible to reduce costs to the resident (e.g. lower energy bills) and to the environment (e.g. a reduction in greenhouse gases and use of non-renewable resources), both of which contribute to sustainable development.

All development applications for residential development, including mixed-use development, must submit an *Efficient Use of Resources Commitment Table* in order to demonstrate the proposed development will achieve an efficient use of resources.

1.6.1 Energy efficiency**Objectives**

- O1 To ensure that developments minimise their use of non-renewable energy resources.

Provisions

- P1 A BASIX Certificate is required to be submitted with all residential development types nominated under [SEPP \(Building Sustainability Index: BASIX\) 2004](#).

Note: BASIX assessments and certificates can be obtained on-line at www.basix.nsw.gov.au

- P2 Where alterations affect more than half the total volume of the original building (measured over the roof and the external walls), achieve the targets in s.1.6 to this Section of the DCP for the whole of the building.
- P3 Development should be designed, such that it does not reduce the energy efficiency of buildings on adjoining lands.
- P4 Incorporate on-site renewable energy sources to supplement energy needs during daily peak energy use.
- P5 In considering proposals for renewable energy, consideration should be given to the economic and environmental benefits to the broader community of renewable energy generation while also considering the need to minimise the effects of a proposal on the local community and environment.
- P6 Timers and movement sensors should be used to minimise energy consumption, particularly for lighting and mechanical ventilation in public areas.
- P7 Energy efficient lighting and technology should be used to reduce energy consumption. Consider the use of solar powered illumination.
- P8 Use solar powered lighting for external areas
- P9 Consider the following issues when assessing the energy rating of buildings and whether any of these issues prevent the achievement of the energy ratings:
- (a) orientation or shape of the block;
 - (b) existing overshadowing due to either the surrounding terrain or existing development;
 - (c) topography, geology or geo-technical constraints preclude energy saving design such as slab-on-ground construction;



Residential Development

- (d) conflict with requirements or guidelines in relation to privacy, area character, building design, bulk and scale or heritage considerations set out in the LEP or the DCP.

P10 Where the proposed development involves the installation of any of the following:

- (a) hotwater systems;
- (b) clothes drier;
- (c) dishwasher;
- (d) fixed air conditioning systems (including reverse cycle systems);
- (e) fixed heating systems;

they must have a minimum energy star rating of 3.5 stars.

1.6.2 Passive solar design

Objectives

- O1 To ensure that site layout and building orientation allows for maximum solar access to dwellings, especially to living areas, and are adapted to local climatic conditions and prevailing site characteristics.

Provisions

- P1 To achieve maximum solar access orient the building within 20° west of north to 30° east of north.
- P2 Adapt site layout and building orientation to local climatic conditions and prevailing site characteristics, such as existing overshadowing, planting and slope.
- P3 Locate the main daytime living areas (e.g. family, dining and meal rooms) on the northern side of dwellings.
- P4 Orient the long axis or length of the building to the northerly aspect.
- P5 Provide shading devices on north facing walls to completely shade glazing from October to late February. To calculate the extent of shading device, draw a section and extend a line from the base of the window at 70°. The outer edge of the eaves or shading device should reach this line.
- P6 Ensure windows of living areas that face north will receive at least three hours of sunlight between 9am and 3pm over a portion of their surface during the winter solstice.
- P7 If landscaping is proposed as part of the development, a documented landscape design concept demonstrates how the landscaping contributes to energy efficiency by providing substantial shade in summer, especially to west facing windows and open car parking areas, and enabling winter sunlight to penetrate outdoor and indoor living and working areas.
- P8 Consideration should be given to using north facing pergolas to shade walls and windows (deciduous vines can be trained over the pergola to provide effective cooling in warm weather).
- P9 Where a north facing pergola contains fixed louvres, space and orient the louvres so that a line between the top of one blade and the bottom of the next makes an angle of 70°.
- P10 Angle louvres to correspond to the lowest altitude angle the sun reaches at noon in winter (31° in Sydney).
- P11 Provide adjustable awnings, shutters and external louvres on east and west facing windows.

- P12 Where main living areas are oriented northwards, aim to achieve a glazed area of 30% of the dwelling's floor area in this direction.
- P13 East and west facing glazing should be minimised and fully shaded at the summer solstice.
- P14 South facing glazing should be kept to a minimum to reduce winter heat losses.

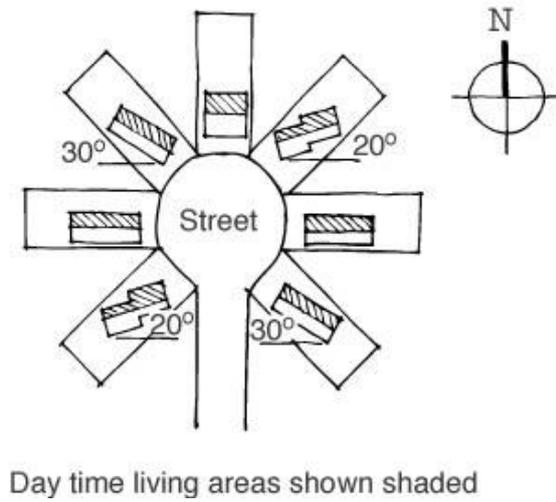
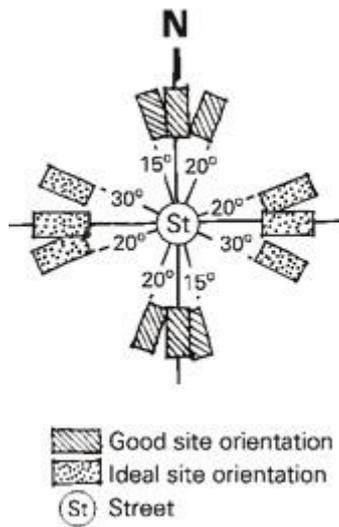


Figure B-1.10: Good passive solar performance can be achieved at minimal cost if the development is appropriately oriented.

Figure B-1.11: Where possible, orient the development such that daytime living areas and outdoor spaces are north-facing.

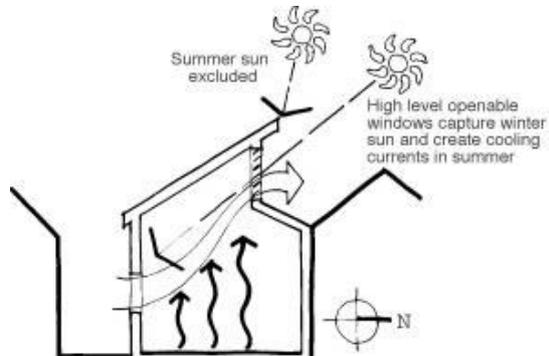
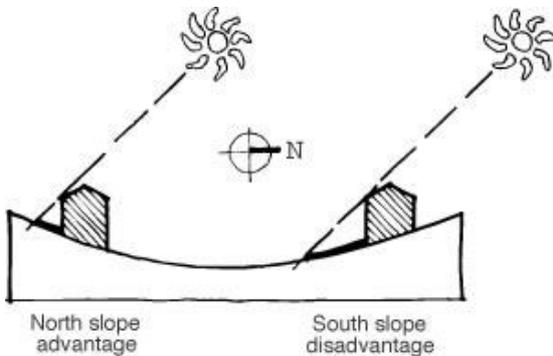


Figure B-1.12: A north facing slope increases the potential for access to northern sun and is ideal for higher housing densities. A south facing slope increases the potential for overshadowing

Figure B-1.13: Poor orientation can exclude winter sun, and cause overheating in summer by allowing low angle east or west sun to strike glass surfaces

1.6.3 Thermal Mass and Insulation

Thermal mass is the ability of a material to absorb heat energy. Materials like concrete, bricks and tiles are deemed to have a high thermal mass, as they require a lot of heat energy to change their temperature. Lightweight materials such as timber have low thermal mass. More thermal mass results in more even range in inside air temperature. Appropriate use of thermal mass throughout your home can make a big difference to comfort and heating and cooling bills.

Residential Development

Thermal mass is not a substitute for insulation. Thermal mass stores and re-radiates heat whereas insulation stops heat flowing into or out of the building. A high thermal mass material is not generally a good thermal insulator.

Insulation acts as a barrier to heat flow and is essential to keep your home warm in winter and cool in summer. A well insulated and well designed home will provide year-round comfort, cutting cooling and heating bills by up to half. This, in turn, will reduce greenhouse gas emissions.

Objectives

- O1 To achieve more even, year-round average temperature, making the dwelling more comfortable to live in and resulting in less demand for artificial heating or cooling.

Provisions

- P1 To maximise natural heating, provide flooring that will absorb heat from the winter sun (i.e. A concrete slab floor on the ground offers the best thermal massing properties, whilst timber floors have minimal performance in terms of thermal mass. Dark coloured tiles laid over a concrete slab is the most desirable covering in terms of maximising the performance of thermal mass in a dwelling).
- P2 To maximise natural cooling, protect thermal mass from summer sun with shading and insulation. Allow cool night breezes and air currents to pass over the thermal mass, drawing out all the stored energy.
- P3 Incorporate masonry walls and insulated walls and ceilings to contribute to the effectiveness of thermal mass.
- P4 Thermal insulation is used in the roof, walls and floor.
- P5 Ceiling/roof insulation must have at least an R3.0 rating or equivalent and wall insulation must have at least an R1.5 or equivalent rating. Insulation of cavity brick walls is not required. These ratings are based on AS 2627: Part 1-1993.
- P6 Use bulk or reflective insulation, or a combination of both, to achieve the required insulation value.

1.6.4 Natural ventilation

Ventilation is essential for good health and prevention of condensation. However, the lack of natural ventilation can cause discomfort for occupants and waste energy if artificial ventilation is installed.

Objectives

- O1 To ensure that dwellings are designed to provide all habitable rooms with direct access to fresh air and to assist in promoting thermal comfort for occupants.
- O2 To reduce energy consumption by minimising the use of mechanical ventilation, particularly air conditioning.

Provisions

- P1 Locate windows and openings in line with each other on opposing walls and with prevailing breezes.
- P2 Provide ceiling fans for use in summer (fans produce a cooling air movement that is preferable to letting in the hot daytime air).

1.6.5 Colours and materials

Colours and materials can be used to absorb or reflect heat from the sun. Dark colours tend to absorb the sun's rays whereas light colours are more reflective. There is little advantage in using dark external colours to absorb heat in winter. However, the use of lighter colours, particularly on the roof area and on east and west facing walls, are particularly advantageous

during summer to reflect the sun's heat. Glare effects and streetscape issues need to be considered when choosing external colours.

Objectives

- O1 To maximise the energy efficiency of dwellings.

Provisions

- P1 Buildings should use lighter coloured materials and finishes on main external parts of the building.

1.6.6 Hotwater systems

Objectives

- O1 To ensure the most efficient water heating methods are used to assist in the reduction of greenhouse gas emissions and use of non-renewable resources.

Provisions

- P1 New hotwater systems installed in dwellings must not solely rely on electrical mains power to heat the water (n.b. sole electrical hotwater systems are not permitted in new dwellings).
- P2 Install solar powered water heaters on any residential development. Solar powered water heaters may be either gas or electrically boosted, but boosting should be limited to a maximum of 50% of total heating requirement with the remainder of heating requirements achieved through solar gain.
- P3 Where it can be demonstrated that insufficient solar access is available for a solar powered system install a heat pump or natural gas system.
- P4 Locate solar cells, heat pumps or any associated structures so as to avoid impact on the aesthetics of a building, the streetscape, or heritage significance of a building or conservation area.
- P5 Centralise solar or heat pump hot water systems in larger scale residential flat buildings or attached dwelling developments, to achieve economies of scale.
- P6 Where it can be demonstrated that the installation of a low greenhouse gas emission water heating system would require additional expenditure which is not cost-effective over a five year period other systems may be considered.

1.6.7 Water conservation

Objectives

- O1 To minimise the use of potable water.

Provisions

- P1 A BASIX Certificate is required to be submitted with all residential development types nominated under [SEPP \(Building Sustainability Index: BASIX\) 2004](#).

Note: BASIX assessments and certificates can be obtained on-line at www.basix.nsw.gov.au

The following provisions only apply to residential developments that do not require a BASIX Certificate.

- P2 Consideration is to be given to incorporation of grey-water and black-water reticulation systems.
- P3 Where the proposed development involves the installation of new:
(a) shower roses;

Residential Development

- (b) taps for use over a basin, ablution trough, kitchen sink or laundry tub;
 - (c) flow restrictors;
 - (d) toilets;
 - (e) white goods, such as clothes washers or dishwashers;
- they must have the highest WELS star rating available at the time of development.

- P4 Rainwater tanks are to be installed in accordance with the exempt development requirements under [SEPP \(Exempt and Complying Development Codes\) 2008](#).
- P5 Install a stormwater tank where this will not affect amenity, views and other requirements of this section of the DCP.

1.6.8 Stormwater management

Objectives

- O1 To mimic pre-development or natural drainage systems through the incorporation of WSUD on-site.
- O2 To protect watersheds by minimising stormwater discharge and maximising stormwater quality.
- O3 To minimise off-site localised flooding or stormwater inundation.

Provisions

- P1 An Erosion and Sediment Control Plan for the construction of the building is required in accordance with Part B: Section 17 - *Erosion and Sedimentation Control* of the DCP.
- P2 A Stormwater Drainage Plan is required demonstrating compliance with this subsection as well as Part B: Section 18 - *Stormwater Drainage* of the DCP.
- P3 Demonstrate how run-off from the site will be minimised and the quality of water leaving the site will be improved.
- P4 Use site contouring and landscaped areas to increase on-site infiltration of stormwater.
- P5 Rainwater tanks should be installed for all residential developments, including major alterations and additions, and be plumbed to appropriate end uses, including toilet flushing, water features, car washing and garden irrigation, to ensure sufficient use of tank water so that capacity exists to accommodate rainwater from storm events.
- P6 As a minimum, post-development stormwater discharge rates should be less than pre-development stormwater discharge rates.
- P7 As a minimum, post-development stormwater quality should be improved from pre-development levels.
- P8 Grade land around structures to divert surface water clear of existing and proposed structures and adjoining premises.
- P9 On -site stormwater detention, including the use of grass swales and detention basins, should be pursued where practicable to minimise and filter stormwater runoff.
- P10 Do not construct over any registered easement without the approval of the body benefiting from the easement.
- P11 Do not construct within 3m of a sewer/water main without the prior approval of the relevant service authority.
- P12 Impervious surfaces should be minimised.
- P13 Ensure paved areas are at least 50% pervious.
- P14 In addition to a Stormwater Drainage Plan, residential developments with a gross floor area greater than 2000m² must also submit a Water Sensitive Urban Design report

from a suitably qualified consultant demonstrating that WSUD has been incorporated to the maximum extent practicable and that stormwater discharge will be reduced to the maximum extent practicable.

- P15 All developments with a gross floor area greater than 2000m² are to undertake a stormwater quality assessment to demonstrate that the development will achieve the post-development pollutant load standards indicated below:
- (a) Litter and vegetation larger than 5mm: 90% reduction on the Baseline Annual Pollutant Load;
 - (b) Total Suspended Solids: 85% reduction on the Baseline Annual Pollutant Load;
 - (c) Total Phosphorous: 65% reduction on the Baseline Annual Pollutant Load;
 - (d) Total Nitrogen: 45% reduction on the Baseline Annual Pollutant Load.

1.6.9 Waste Management & Minimisation

Objectives

- O1 To minimise material usage and waste during building, construction and demolition.
- O2 To minimise the level of waste during operation reduce new building material usage and minimise volume of demolition materials.

Provisions

- P1 A Waste Management Plan for the demolition, construction and operation of the building must be provided in accordance with Part B: Section 19 - *Waste Minimisation and Management* of the DCP.
- P2 The building should be designed to encourage waste minimisation (e.g. source separation, reuse and recycling).
- P3 Adequate recycling systems must be provided in the design of the garbage room.
- P4 Materials with long lives and low maintenance needs are encouraged to be incorporated.
- P5 Contractors and sub-contractors employed to undertake proposed construction works and waste removal should be educated about the waste objectives of the development.
- P6 The storage of any hazardous waste materials must be adequately secured.

1.6.10 Green roofs

A green roof can comprise a roof system that is designed to promote the growth of various forms of vegetation, renewable energy production and/or water collection technology on the tops of buildings. Although a green roof is only one element of a building, it is extremely important when considering the long term sustainability of buildings and their impacts on the environment.

Green roofs can not only assist in minimising impacts on the environment but can also help to reduce a building's running costs.

Applicants are requested to consult the *North Sydney Council Green Roof and Wall Resource Manual* for technical guidance on the design, construction and maintenance of green roofs.

Objectives

- O1 To provide accessible roof space providing increased amenity for the occupants and visitors of the building.
- O2 To improve the aesthetics and amenity of the urban environment (this particularly relates to the appearance of the roof when viewed from surrounding buildings).
- O3 To provide space to accommodate renewable energy production.



Residential Development

- O4 To improve stormwater management by controlling both the quality and flow of stormwater.
- O5 To increase biodiversity by the use of plant material, and in particular to promote food production where appropriate.
- O6 To protect the building structure by increasing its thermal protection which will also help to reduce internal heating and cooling requirements.

Provisions

- P1 Development applications for all new buildings or alterations and additions to an existing building that involves the creation of new roof spaces which are generally flat, must submit a roof plan demonstrating how the new available roof space⁸ contributes to the achievement of at least three of the above objectives.
- P2 In satisfying provision P1 above, the roof plan must illustrate those parts of the available roof space to be used as a green roof immediately after construction of the proposed works and/or areas capable of being retrofitted for a green roof at a later date. Applicants are encouraged to accommodate green roofs immediately after construction.

1.6.11 Wind Turbines

Objectives

- O1 To manage the impacts of wind turbines

Provisions

- P1 Wind turbines are:
 - (a) not to involve the removal or pruning of a tree or other vegetation that requires a permit or development consent for removal or pruning, unless that removal or pruning is undertaken in accordance with a permit or development consent;
 - (b) to be clear from power lines in accordance with the requirements of the relevant electricity authority;
 - (c) not to affect the structural integrity of the building;
 - (d) should not detract from the significance of a heritage item or a heritage conservation area;
 - (e) not to be located along a bat or bird flyway; and
 - (f) to be installed in accordance with manufacturer’s specifications.
- P2 Wind turbines are not to cause the following LAeq levels to be exceeded in any nearby residential development (with windows closed):
 - (a) in any bedroom in the building—35 dB(A) at any time between 10pm and 7am;
 - (b) anywhere else in the building (other than a garage, kitchen, bathroom or hallway)—40 dB(A) at any time.

⁸ "Available roof space" excludes plant rooms, lift overruns and other equipment such as building maintenance units. Available roof space includes the roof tops of any podiums.



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