
3 Local Context

This section of the DCP addresses the SEPP 65 Design Principal **1: Context**.

Developments should be designed to be consistent with the stated Desired Future Character of the 2(d3) zones, while not detracting from the existing character of adjoining or surrounding areas.

Ku-ring-gai also has a large number of heritage items and identified Urban Conservation Areas. All future residential flat development needs to occur in a manner that will not compromise the integrity of heritage items in the vicinity, or compromise the integrity of Urban Conservation areas.

3.1 Existing Character of Ku-ring-gai

Council adopted statements on “The Character of Ku-ring-gai” and “A Statement of Heritage Significance” on 9 March 2004. Copies of these statements are included as **Appendix B** of this DCP. These statements provided a clear **context** for residential development in Ku-ring-gai.

Ku-ring-gai contains most of the last remnants of Blue Gum High Forest, a threatened plant community. The tall forest and remnant trees are a significant contributor to the visual character of Ku-ring-gai. The area is also characterized by remnants of Sydney Turpentine Ironbark Forest (see **Appendix D** for the extent of the communities).

3.2 Desired future character

The statement below outlines Council's desired future character for the areas in Ku-ring-gai to be developed for multi-unit housing in the 2(d3) zone.

In order to achieve this desired future character, general controls and specific controls are adopted in this DCP. The key planning and urban design principles below provide the basis for detailed objectives and controls in subsequent sections of this DCP.

Council's vision is that multi-unit housing will be in a setting where vegetation, especially in the form of tall trees, is the dominant impression. Ku-ring-gai's streetscape and landscape will be dominated by indigenous canopy trees and bushland and appropriate exotic trees for sunlight access to dwellings and energy efficiency. This will require that at least half of the site be available for deep soil planting. The leafy setting creates a strong visual and aesthetic identity and, equally importantly, serves as a basis for the rich biodiversity which is evidenced by the variety of flora and fauna that lives and visits the area and the presence of threatened vegetation communities. Protecting and enhancing these attributes will form the foundation for environmental and genetic sustainability of this area and region.

Several areas along the Pacific Highway / railway corridor have outstanding heritage buildings and urban conservation areas with many intact high quality residential areas of 19th and 20th century buildings. New development will be of a design incorporating sustainable development principles whilst protecting the integrity of heritage buildings and urban conservation areas. Roof forms, articulation, modulation and other design elements, residential medium density that adjoins will complement their character.

Built form for multi-housing zone will achieve a cohesive streetscape character through consistency in colours, materials and setbacks within the 2(d3) zone while allowing scope for contemporary architecture expression. It will respect and respond to topographic features and established subdivision patterns.

New development will be highly accessible and, where possible, provide improved permeability, allowing improved pedestrian access through blocks to town centres, railway station and community facilities. Residences in adjacent zones will retain, as far as practicable, current levels of privacy and solar access. Buildings will achieve designs that create climatically sensitive dwellings that are accessible and comfortable to live in with minimum need for heating or cooling and optimize water sensitive urban design.

3.3 Landscape and Visual Character

Refer to **Appendix D** to check if your site is in an area which has endangered plant communities and trees.

Existing Landscape Character

Ku-ring-gai is located on an uplifted plateau capped with Wianamatta shales. The area receives high rainfall given its altitude and proximity to the coast. Higher rainfall and shale geology has created deep rich soils which support tall Blue Gum High Forest. Today there are many remnant trees of the former forest remaining in parks, streets and private gardens which provide amenity, shade and shelter for residents. These trees are often old with numerous hollows and faults which provide habitat and nest holes for a wide range of birds and animals. More extensive bushland remnants are protected within the creek valleys and gullies in National Parks and Reserves, these areas support a more complex ecosystem of grasses, herbs, shrubs and trees. The tall forest character is a significant contributor to the visual character, biodiversity and amenity of the area. The extent of Blue Gum High Forest and associated vegetation is shown in the maps contained in **Appendix D**.

The elevated topography of Ku-ring-gai provides opportunities for distant and sometimes panoramic views to the east south and west. The best views are from the Pacific Highway looking south and west where views are framed by roads, by buildings or from parks and other vantage points. Visual and scenic quality is a key contributor to the character of Ku-ring-gai.

The soils and climate of Ku-ring-gai create good conditions for gardening. Historically gardens have retained tall canopy trees and complemented these with gardens that are characterised by imported plants such as Jacaranda, Camellia, Rhododendron and Azalea which all do particularly well on the local soils.

It is Council's intention to maintain existing landscape character to the greatest extent that is possible given multi-unit housing development.

Design Objectives

- O-1 New residential flat development that responds to the landscape character of Ku-ring-gai.
- O-2 Remnant trees are retained as significant elements that contribute to the visual, environmental and historical character of the area.
- O-3 New residential flat development that protects and enhances the biodiversity and ecology of the area.

Design Controls

- C - 1 Medium density development should be responsive to the topography and be designed around existing significant trees and vegetation.
- C - 2 Remnant and indigenous trees, where possible, are assessed from multiple view points including heritage, arboricultural, ecological and landscape (function, habitat, amenity and visual) values so that mature remnant trees are valued correctly.
- C - 3 Adequate open space around existing remnant/indigenous trees is to be retained to minimise future conflicts related to branch drop and root damage from mature trees (all housing to be outside drip-line of significant trees).

Design Objectives**Design Controls**

O-4 New residential flat development is designed to protect the visual and scenic qualities of the area

- C - 4 New locally indigenous trees shall be planted to support and replace maturing remnant trees (refer 4.5 Landscape Design).
- C - 5 Multi-unit housing development and its gardens shall be designed to provide new habitat opportunities for a range of wildlife including birds, micro-bats, mammals, frogs and lizards among others (ponds, wetlands and nest boxes).
- C - 6 New developments shall provide generous front setbacks and communal open space areas for the establishment of high quality gardens with a mix of exotic and indigenous species consistent with surrounding gardens.
- C - 7 Buildings are to be designed and located to respect existing significant views by not blocking or limiting opportunities for public views from roads, streets and parks.
- C - 8 Buildings should be articulated using view corridors to break long continuous facades and create visual linkages and view opportunities wherever possible.
- C - 9 Design shall address issues of view-sharing of private views.
- C - 10 Streetscape shall be enhanced through work such as undergrounding overhead power lines and planting appropriate street trees.

3.4 Development within an Urban Conservation Area

Refer to Appendix C to check if your site is in an Urban Conservation Area.

Ku-ring-gai has 28 precincts that the National Trust has termed “Urban Conservation Areas” (UCA). These precincts contain a number of elements of heritage significance, such as historic subdivision layouts, a consistent pattern of building “footprints” within each block (setbacks), buildings of historic and architectural importance from several periods including Colonial, Federation and Interwar styles, road alignments, gardens, trees gutters and kerb edges which combine to create a sense of place that is worth keeping. It is Council’s intention to conserve that character of the UCAs while allowing appropriate new medium density development that respects and enhances the existing values.

If the proposed development is within a UCA, it is strongly recommended that the applicant discuss the proposed development with Council’s Heritage Advisory at the early stages of the design development and before pre-DA consultation takes place.

Stylistic elements define the character of each separate period of development within the UCAs. The predominant styles are Federation period and Inter-War period. The elements which best define the character of these periods are as follows:

Federation period: complex asymmetrical form and massing; heavily articulated facades; steeply pitched roofs with a combination of hips and gables; combinations of fabric predominately face brick, terra cotta roof tiles, render or timber details.

Inter-War period: asymmetrical form and massing, curvilinear corners, flat parapet roofs, low pitched gable roofs with wide eaves, vertical or horizontal brickwork or render detail, dark face brick, light coloured render surfaces, combinations of stone, brick and timber fabric, horizontal groups of steel frame windows, round porthole, multi-pane or large fixed plate glass windows.

Design Objectives

- O-1 New residential flat development in keeping with the identified historic and aesthetic values and character of the Urban Conservation Area in which it is situated.
- O-2 New residential flats that respect the character of, and minimise visual impact upon, the UCA and its streetscapes through appropriate design and siting.

Design Controls

- C-1 Multi-unit housing development in a UCA should respect the predominant architectural character of the UCA and be designed with reference to predominant design elements such as massing, style, complexity and pitch of roofs, proportions of window and door openings and external materials and colours.
- C-2 Buildings should be well articulated to avoid long continuous facades facing the street frontages. Facades should preferably be broken up into discrete pavilions or the openings in walls arranged so that their shape and size reflect the structure and openings of its neighbour.
- C-3 Scale and massing of new buildings should be proportioned to respect and enhance the scale and character of adjacent or

Design Objectives**Design Controls**

- O-3 New buildings that respect the character and setting of significant items in their vicinity as well as the predominant pattern of street plantings, gardens and landscape character.
- nearby development within the UCA. Façade massing can be varied to break down the scale of new development adjoining new residential development.
- C-4 The form and outlines of new developments should respect the complexity and patterns of predominate roof shapes and skylines of the particular UCA in which they are located. Complex arrangements of hips and gables are suitable in a predominately Federation period UCA, while hips, gables or parapeted roofs are suitable for a predominately Inter-War period UCA.
- C-5 Where there is a uniform building setback, new buildings should respect the established pattern and not be located forward of adjacent buildings.
- C-6 New buildings should not be oriented across sites contrary to the established alignment pattern.
- C-7 New buildings should incorporate modern designs, building materials and techniques which are sympathetic to the predominant character of the UCA. Traditional styles should not be copied but used merely as a point of reference on which to base the characteristics of the new design.
- C-8 Combinations of modern materials are acceptable if the detailing, proportions and colour range are carefully chosen to blend with the existing character of the precinct.
- C-9 Complementary combinations of textures and colours may be used to blend the massing of the new development into the existing streetscape.
- C-10 Design and materials of the front fences, gates and walls are to be appropriately designed and compatible with the heritage context of the UCA.
- C-11 Unsympathetic fences, gates and walls are to be removed and replaced by elements of appropriate heights, style and fabric that complement the character of the UCA.
- C-12 Where original or early fences and gates contribute strongly to the character of a precinct they should be retained and repaired.

3.5 Development within the Vicinity of a Heritage Item

Ku-ring-gai's heritage comprises a rare blend of fine domestic architecture within a landscape of indigenous forest and exotic plantings. Heritage inventory sheets for all existing heritage items are available from Council.

For development within the vicinity of a heritage item, Council must assess the effect of carrying out development on the heritage significance of the item (KPSO Clause 61E). The term "*in the vicinity*" not only means immediately adjoining the site, but depending on site context can be extended to include other sites with a high visual presentation due to landform, size or location of the heritage item.

It is strongly recommended that the applicant discuss the proposed development with Council at the early stages of the design development and before pre-DA consultation takes place.

Design Objectives

- O-1 New medium density development that respects the heritage significance of the adjoining or nearby heritage items.
- O-2 New medium density that does not visually dominate a heritage item.
- O-3 New medium density that does not reduce the views from or to an item from the public realm.
- O-4 New medium density that does not impact on the garden setting of an item, particularly in terms of overshadowing the garden or causing physical impacts on important trees.

Design Controls

- C-1 Medium density development adjacent to a heritage item shall:
 - i. Setback the first and second storeys at least 10 metres from the adjacent heritage building.
 - ii. Setback the third and fourth storeys at least 15 metres from the adjacent heritage building.
 - iii. Be setback from the front boundary so that it is not closer than the adjoining heritage building.
- C-2 Screen planting on all boundaries with an item to achieve a height of at least 4 metres.
- C-3 New development shall respect the aesthetic character of the item and not dominate it.
- C-4 Colours and building materials are to be complementary to the heritage building.
- C-5 The solid component of front and side fences is to be no higher than the fence of the adjoining item and any additional height must be visually transparent.
- C-6 An applicant's statement of environmental effects shall discuss the effect that the proposed development will have on a heritage item (including its garden and setting).

4 Design principles and controls

4.1 Landscape Design



Figure 1: Deep soil landscaping

Deep soil landscaping provides opportunities for tall tree growth. Existing significant vegetation retained in deep soil landscaped zones within development zones to promote tall tree canopy character of Ku-ring-gai.

This section addresses SEPP 65 Design Principle 6: Landscape

Landscaping is important for the amenity of residents living in a development and views from the public domain. Landscape design should build on the site's existing natural and cultural features.

Deep soil zones are areas of natural ground within a development for mature vegetation growth to contribute to the ecology of Ku-ring-gai and to a canopy height that dominates the buildings. Clause 251(2) of LEP 194 requires a minimum of 40% or 50% (depending on the site size) of the site for deep soil planting (Refer to Appendix A)

Figure 1 shows an example of a development that retains existing significant vegetation.

The desired future character of the Railway/Pacific Highway Corridor and St Ives Centre reflects and enhances the landscaped and treed character of Ku-ring-gai. This landscaped and treed character is to be reinforced in multi unit development so that most deep soil planting is commonly owned land. This will ensure buildings will be in a landscaped setting and the landscaping will not be generally broken into a series of private courtyards where Co-ordinated landscaping may break down over time.

The use of permeable paving in landscape design provides high rates of surface infiltration due to a high percentage of voids compared to conventional pavement. Runoff percolates into a deep layer of gravel that acts as a saturated storage. Slow infiltration into the underlying soils then occurs. Permeable paving:

- reduces the peak flow rate and volume of stormwater discharge;
- removes fine particle and dissolved pollutants by filtration processes; and
- Increases ground water recharge.

Design Objectives

- O-1 Integration of the planning and design of buildings with the site's landscaping.
- O-2 Sufficient deep soil for planting and retaining large canopy trees on every site.
- O-3 Landscaping that is appropriate to the scale of the development.
- O-4 Minimal visual impact of hard building surfaces by vegetation

Design Controls

- C-1 At least one area of not less than 150m² per 1000m² of site area of deep soil landscaping shall be provided within the site. This is to be concentrated towards the rear or middle of the site.
- C-2 Landscape design is to ensure that the built form blends with the natural landscape. This is to be achieved by:
 - i) selecting species with an appropriate range of height and foliage density; and
 - ii) allowing for adequate deep soil planting zones for established screen planting where required.
- C-3 Driveways shall not be located in side setbacks as these areas are to

Design Objectives

Design Controls

and trees when viewed from the public domain and neighbouring properties;

consist of deep soil landscaping.

C-4 On lots adjoining the railway and arterial roads landscaping is to be designed to:

- i) soften the hard surfaces of buildings by planting tall trees which contribute to the tree canopy; and
- ii) be durable and suited to the conditions of the road and railway environment.

C-5 Fencing used to define boundaries is to respond to the character of the streetscape in terms of:

- open landscape character;
- visibility and security;
- materials selection;
- solid or transparent qualities;
- height;
- vertical and horizontal composition of the materials; and/or
- location of entries and gates;

Note: Masonry boundary walls are generally inappropriate to the landscape character of Ku-ring-gai.

O-5 Landscaping that contributes to on-site water and stormwater management

C-6 Landscape design is to integrate water and stormwater management measures by:

- i) using locally occurring and other native species as much as possible;
- ii) using permeable surfaces; and
- iii) locating pipelines outside the zone of influence of tree roots at natural growth to maintain pipeline integrity.

C-7 Use permeable pavers for pathways wider than 1m and external visitor parking and at least 50% of driveways. Such paving must comply with standards for access for people with disabilities.

O-6 Maintenance and increase to the tree canopy of Ku-ring-gai.

C-8 Tree replenishment:
Lots with the following sizes are to support a minimum number of tall trees capable of attaining a mature height of at least 13 metres:

O-7 Development characterised by native planting, including trees, understorey and ground cover; to provide habitat for indigenous fauna and reduce the need for water, energy, fertilisers and herbicides.

Table 1: Tree replenishment

Lot size	Number of tall trees
less than 1,200 (residual lots)	1 per 400sqm of site area or part
1,200sqm- 1,800sqm	1 per 350sqm of site area or part
1,800sqm +	1 per 300sqm of site area or part

- (i) Proposed tall trees should be selected from the schedule of suitable plant species for tall tree replenishment at **Appendix E**;
- (ii) In addition to the tall trees, a range of medium trees, small trees and shrubs are to be selected to ensure that vegetation is predominantly in the view of buildings;
- (iii) At least 50% of all tree plantings chosen are to be locally occurring trees and spread around the site.

C-9 Maintain natural ground level beneath the canopy spread of existing

Design Objectives

Design Controls

- O-8 Development that contributes to the quality and amenity of communal and private open space on roof tops, terraces and internal courtyards.
- O-9 Communal and private open spaces with high-quality microclimates.

trees (if the ground level is modified within the canopy spread, a report from a suitably qualified arborist will be required).

- C-10 Private outdoor space for ground floor apartments is differentiated from common areas by:
- change in level and/or;
 - screen planting, such as hedges and low shrubs; and/or
 - up to 1.2m solid wall with at least 30% transparent component above and gate to common open space.
- C-11 Roof terraces and balcony planting
- Roof terraces to be designed for optimum conditions for plant growth by appropriate soil conditions and irrigation methods and drainage.

Note: For further details on requirements for private and communal open space, refer to section 4.5.5.



Figure 2: Landscaping to screen the visual presence of development

Tall trees should be planted in setback areas to reduce the visual intrusiveness of new development and replenish the tall tree canopy of Ku-ring-gai. This is an example of a four storey building.

4.2 Density

This section addresses the SEPP 65 Design Principle 4: Density

LEP 194 seeks to control density of future development through maximum standards for building footprints and height. Under LEP 194 the maximum building footprint must not exceed the following:

Development type	Building foot print as % of total site area
Residential flat buildings	35%,
Townhouses	40%,
Villas	50%,
Combination of townhouses and villas	50%.

In order to achieve the desired landscaped and built character of Ku-ring-gai, the capacity of development in the 2(d3) zone will be limited by the ability to achieve the minimum deep soil landscaping requirements on a particular site.

Design Objectives

O-1 Development density that is in keeping with the optimum capacity of the site and the desired future landscape and built character of the area.

Design Controls

- C-1 The total built upon area of a site must not prevent the minimum deep soil landscaping standards under LEP 194 being achieved on any site. Council gives a priority to achieving landscape standards over any other standards in the LEP in the event of any conflict.
- C-2 Building footprint calculations shall include all elements within the external plane of a building, including the external plane of any balcony.
- C-3 Any areas of ground floor terraces or courtyards that extend beyond the external plane of the above floor/s may not be included in building footprint calculations.
- C-4 The maximum floor space ratio of any development shall in accordance with Table 2 below:

Development type	Site Area (m ²)	Maximum Floor Space Ratio
Residential Flat Building	2400+	1.3:1
	1800 - 2399	1:1
	<1800	0.7:1
Townhouses	1200 +	0.8:1
Villas	1200 +	0.45:1

Table 2: Maximum floor space ratio for multi unit housing

Note: FSR shall not be the sole determinant of built form and density;

it will be linked with all other design and site constraint considerations. Also, the stated FSR controls may not be wholly achievable on all sites due to urban design and site constraint considerations.

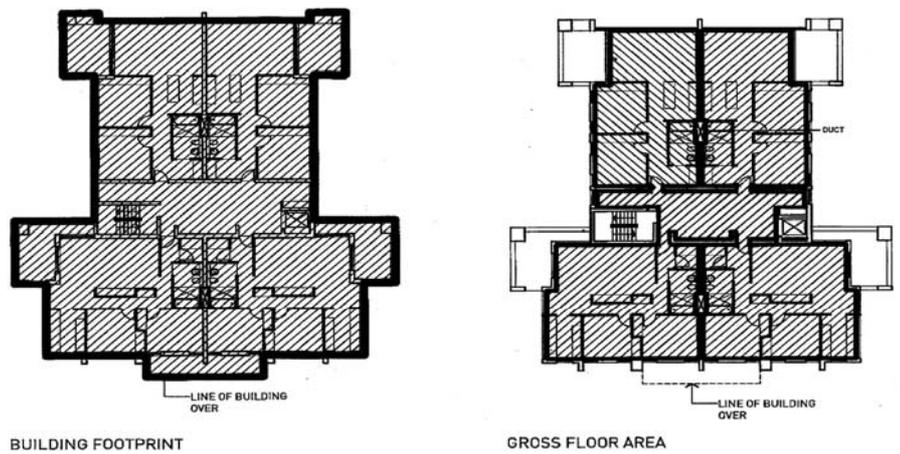


Figure 3: Building Footprint and Gross Floor Area

Building footprint includes all elements within the external plane of the building

4.3 Setbacks

This section addresses the SEPP 65 Design Principle 2: Scale

The scale of a building must be compatible with the desired streetscape character of the area by adhering to height controls and sensitively responding to setback controls.

LEP 194 provides development standards that control the scale of future development. These include standards for number of storeys, maximum perimeter ceiling height, maximum ceiling height generally, minimum site frontage, maximum site coverage, minimum deep soil area, top floor area, and car parking rates. In addition, clause 25L of LEP 194 contains standards for building setbacks at the interface of the 2(d3) zones and any adjoining zone. (Refer to **Appendix A** of this DCP for the relevant development standards that apply under LEP 194)

This section of the DCP provides front, side and rear setback controls designed to achieve site-responsive development at a scale which is compatible with the local context by control of visual impacts relating to height and bulk;

Design Objectives

- O-1 Buildings set behind gardens dominated by canopy trees which screen the buildings, soften the urban form and maintain the garden character of Ku-ring-gai.
- O-2 Adequate space between sites to enable effective landscaping, tree planting between buildings, separation of buildings for privacy and views from the street to rear landscaping.
- O-3 A high level of residential amenity with adequate separation between buildings on different sites for privacy, sun access, acoustic control and natural ventilation.
- O-4 A consistent urban form providing definition of the street edge.

Design Controls

- C-1 The building must be set back the following distances from the boundary (refer to Figure 4):
 - a) Side and rear boundary setbacks: 6m;
 - b) Side boundary setback for buildings 3 storeys or less on sites less than 1800sqm: 3m or 6m to windows of habitable rooms;
 - b) Street boundary setback: setback zone between 10-12m from boundary, no more that 40% of this zone may be occupied by building footprint;
 - c) Street boundary setbacks where road reserve width is less than 12m may be reduced proportionately, but no less than 6m.
- C-2 Where the site has a depth of more than 45 metres and a width of more than 35m, a front setback zone of 13 to 15 metres from the boundary shall apply unless it can be demonstrated that:
 - i. the increased setback will result in the loss of significant vegetation; and
 - ii. other standards contained within the DCP and LEP 194 will be compromised.

Note: This control does not apply to sites fronting the Pacific Highway, Mona Vale Road, Boundary Street (Roseville) or Link Road (St Ives).
- C-3 The setback extends both above and below ground and applies to all built elements of the development including car parking,

Design Objectives**Design Controls**

storage, detention tanks or the like.

C-4 The following elements may encroach into the setback:

- i. eaves;
- ii. sun shading;
- iii. blades, fins, columns;
- iv. private courtyards in the front setback (see C5-C6).

C-5 On corner sites the minimum street boundary setbacks in C-1 and C-2 above shall apply on both street frontages.

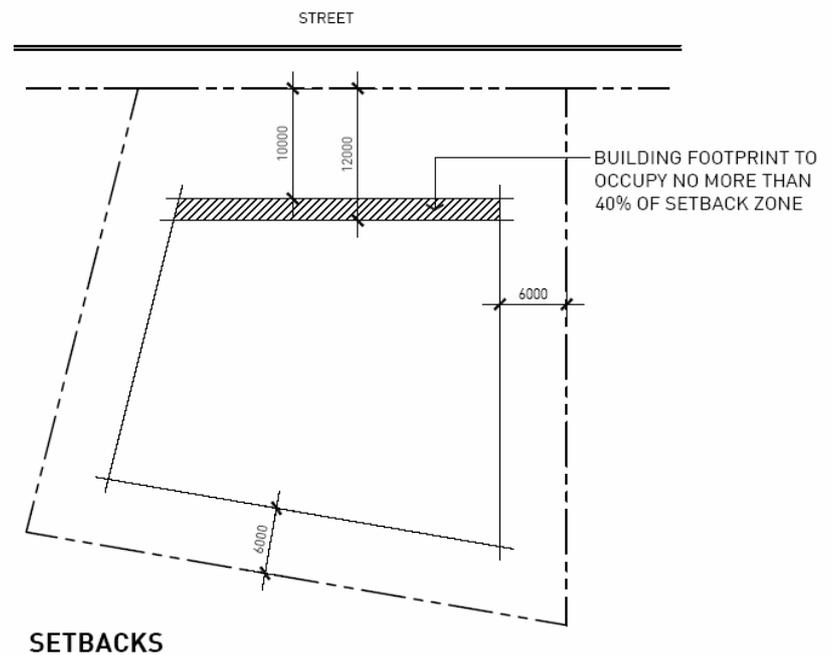
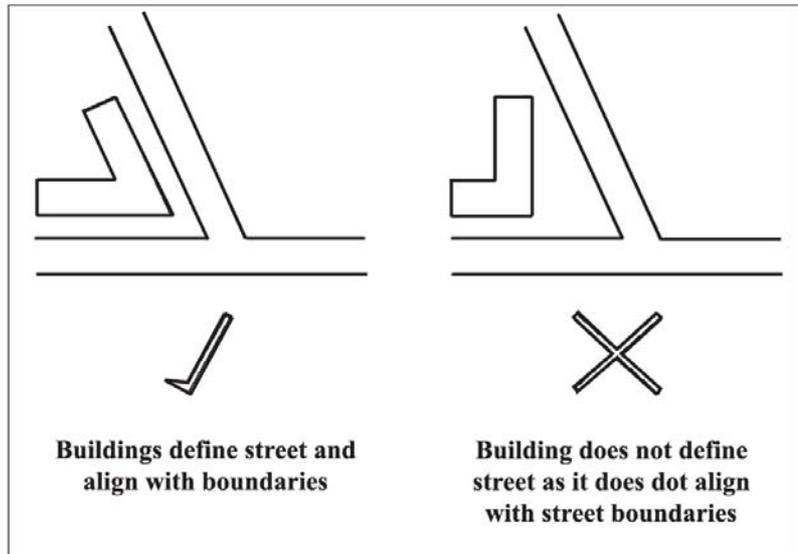


Figure 4: Site setbacks

O-5 Private open space in the front of buildings that allows the establishment and maintenance of canopy trees and does not visually dominate the front of the building

C-6 The building alignment shall be parallel to the street alignment.



C-7 Ground floor private terraces/courtyards must be set back 8m from the street boundary or 11m where the setback is 13-15m to allow for deep soil planting within the common area.

C-8 No more than 15% of the total area of the front setback is to be occupied by private terraces/courtyards.

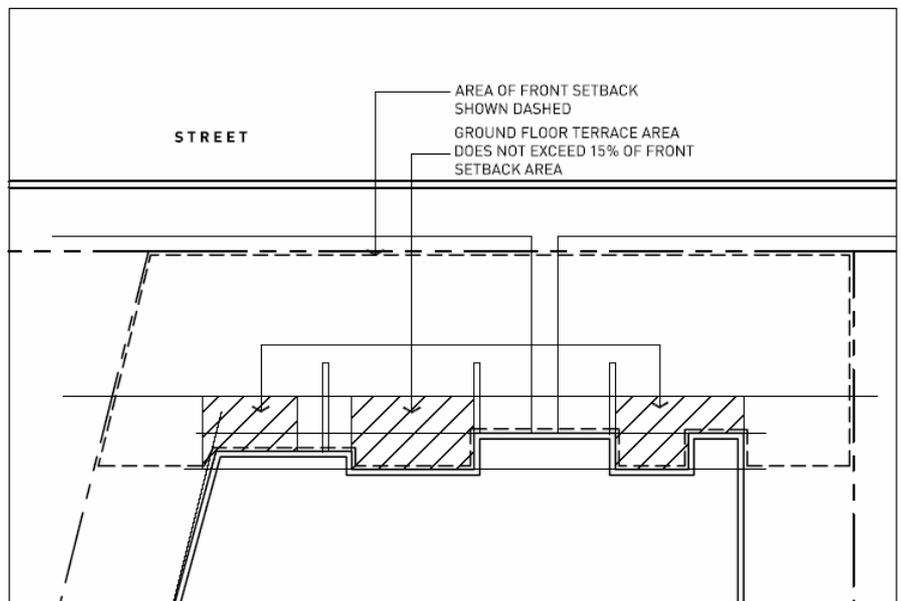


Figure 5: Ground floor Terraces in the Front setback.

O-6 Top floor design that minimises visual bulk, promotes articulation and prevents any increased overshadowing.

C-9 Top floor design:

This clause refers to the top floor as referred to in LEP 194 which is 60% of the floor area of the level below.

Design Objectives***Design Controls***

The top storey of a residential flat building of 3 storeys or more is to:

- i. Be setback from the outer face of the floors below on all sides;
- ii. Not result in any overshadowing of adjoining properties; and
- iii. Be designed in the form of setback floor space, attics and dormers, lofts and clerestories in order to minimise the appearance of the top floor as viewed from the street.

4.4 Built Form and Articulation

This section addresses the SEPP 65 Design Principle 3: Built form and Design Principle 10: Aesthetics

Large buildings can visually impact on the public domain and must be modulated in their building width facing the street. In order that soft landscape features predominate, it is important that there is sufficient separation between neighbouring buildings by side landscaped areas for views from the street between buildings to rear landscaping reinforcing the vegetated character of the locality.

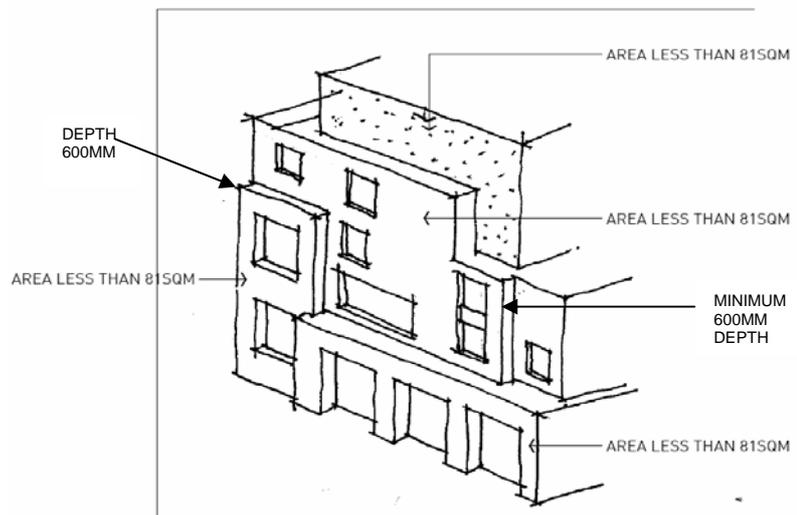
High quality architectural and landscape design are essential in multi-unit residential zones to mitigate the change in scale to nearby single dwelling zones.

Design Objectives

- O-1 Residential flat buildings in Ku-ring-gai of a high architectural quality.
- O-2 A predominance of soft landscape features.
- O-3 Mitigated change in scale between new development and existing lower density housing.
- O-4 Varied articulation in building design.
- O-5 Building elements that are integrated into the overall building form.
- O-6 Visual connection between dwellings and the public domain

Design Controls

- C-1 All facades to the public domain shall be articulated with wall planes varying in depth by not less than 600mm (Figure 6).
- C-2 No single wall plane shall exceed 81 sqm in area (Figure 6).



SINGLE WALL PLANE LESS THAN 81SQM

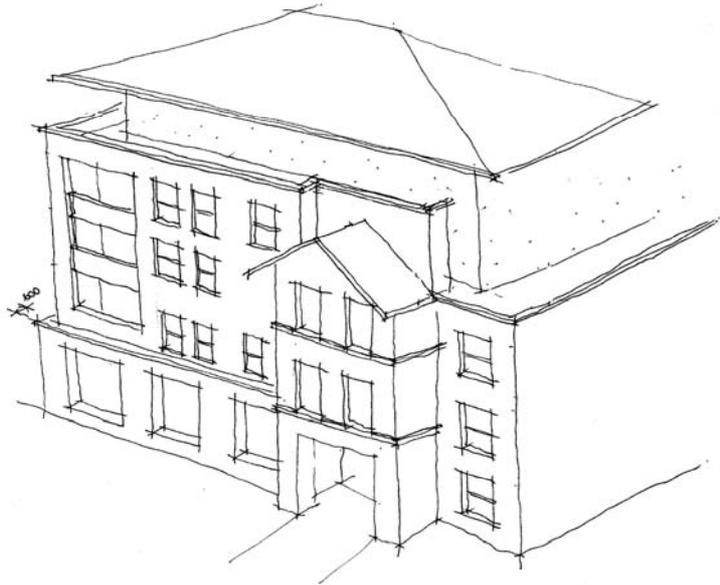


Figure 6: Façade Articulation

Provide a varied articulation pattern of solid/void, light/shade in building facades. Building facades should be articulated so that a single wall plane shall not exceed 81 sqm in area

- C-3 The width of a single building on any elevation facing the street should not exceed 36 metres.
- C-4 On sites where a building length greater than 36 metres has been justified by an applicant, that portion of a building in excess of 36 m shall be sufficiently recessed and/or articulated so as to present to the street as a separate building.
- C-5 Limit building length along side boundaries to promote view corridors between buildings and provide a leafy outlook from all dwellings
- C-6 Balconies shall project not more than 1.2m from the outermost part of the building façade.
- C-7 Service elements (such as lift over runs, service plants, vent stacks, telecommunications infrastructures, gutters and down pipes) shall be integrated into the overall design of the roof.
- C-8 Buildings shall address the street either
- with main entrances to lift lobbies directly accessible and visible from the street footpath, or
 - where site configuration is conducive to having a side entry, with the path to the building entry readily visible from the street.
- C-9 Unit layouts must respond to the opportunities and constraints of the natural and built environments with:
- main living spaces oriented to the front or rear of a property (rather than to a side boundary), and
 - primary private open spaces located adjacent to main living areas.

4.5 Residential amenity

This section addresses the SEPP 65 Design Principle: 7: Amenity

The layout of buildings and landscaping affects residential amenity and residents' enjoyment of their living spaces. Providing a pleasant and attractive living environment is socially important as it encourages long term occupancy that assists in achieving a thriving community.

4.5.1 Solar access

Appropriate solar access contributes to pleasant environments in which to live. Within an apartment, daylight and sunlight reduces reliance on artificial light, improves energy efficiency and residential amenity.

Design Objectives

- O-1 Natural lighting of all living spaces.
- O-2 Development that enables adequate natural lighting of adjoining properties.

Design Controls

- C-1 70% of apartments shall receive a minimum of 3 hours direct sunlight on 21 June to living room windows or adjacent balconies between 9.00am and 3.00pm on June 21 (Note: shadows cast by trees and fences excluded from this calculation).
- C-2 At least 50% of the principal area of common open space of the development shall receive direct sunlight for at least 3 hours between 9.00am and 3.00pm on June 21.
- C-3 Entry lobbies and common corridors should be naturally lit and ventilated.
- C-4 No single-aspect units shall have a southern orientation.
- C-5 Not more than 15% of the total units proposed shall be single-aspect with a western orientation.
- C-6 The development shall allow the retention of at least 3 hours of sunlight between 9.00am and 3.00pm on June 21 to the habitable rooms and the principal portion of the outdoor living area of adjoining houses in single house zones (2(c1) and 2(c2) zones). (Note: where existing overshadowing by buildings is greater than this, sunlight is not to be reduced by more than 20%.)

4.5.2 Visual Privacy

The privacy of residents in the proposed development and adjoining properties is important, particularly important with regard to principal living spaces and private open space.

Design Objectives

Design Controls

- O-1 Visual privacy for residents and adjoining neighbours;
- O-2 Integration of architectural and landscape screening devices into the overall design of the building.

- C-1 Windows shall be offset from those of neighbouring buildings to minimize the opportunity for direct overlooking.
- C-2 The minimum separation between windows and balconies of a building and any neighbouring building either on site or adjoining sites.

Storeys 1 to 4

- i. 12 metres between two habitable rooms
- ii. 9 metres between a habitable room and a non-habitable room
- iii. 6 metres between two non-habitable rooms

5th Storey

- iv. 18 metres between two habitable rooms
- v. 13 metres between a habitable room and a non-habitable room
- vi. 9 metres between two non-habitable rooms

- C-3 Roof terraces are to be designed to avoid overlooking of neighbours' principal outdoor living areas (e.g. roof terraces facing side boundaries are generally inappropriate).

4.5.3 Acoustic privacy

Designing for acoustic privacy relates to the location and separation of buildings especially the proximity of noisy/quiet spaces between units and the design of buildings in near external noise sources such as main roads and railway lines.

Design Objectives

Design Controls

- O-1 Minimal acoustic disturbance to occupants of the development from activities and services.
- O-2 Acoustic privacy for all occupants of the development.
- O-3 Housing located next to the Pacific Highway and the Railway line is designed and constructed so as to minimize the impact of external noise and facilitate comfortable living

- C-1 All dwellings are to meet the sound insulation provisions and standards of the Building Code of Australia.
- C-2 Buildings shall be designed such that noise-generating rooms (such as living rooms) are located adjacent to (ie, sharing common walls / floors) those in adjoining units.
- C-3 Bedrooms and private open space shall be located away from noise sources including active garages, driveways, mechanical equipment and recreation areas.
- C-4 Where physical separation from noise sources cannot be achieved, windows are to be located away from noise sources or buffers used.

Design Objectives**Design Controls**

conditions.

- C-5 Mechanical equipment, such as pumps, lifts or air conditioners shall not be located next to bedrooms or living rooms of dwellings on adjoining properties unless separated from such noise sources by buffers such as storage, wardrobes and circulation areas.
- C-6 Development located adjacent to major roads or other sources of high noise generation shall be designed in accordance with the *EPA Environmental Criteria for Road Traffic Noise 1999*, with:
- noise-insensitive areas such as kitchens, storage areas and laundries located towards the noise source;
 - noise sensitive uses (i.e. bedrooms) located away from the noise source; and
 - appropriate noise shielding or attenuation techniques incorporated into the design and construction of the building.
- C-7 Balconies and other external building elements are to be designed, located to minimise infiltration and reflection of noise onto the facade.
- C-8 Residential flat development within 60m of the railway line shall be designed in accordance with the *Rail Infrastructure Corporation and State Rail Authority: Interim Guidelines – Consideration of Rail Noise and the Planning Process*.

Note 1: Fencing may be designed to supplement noise control of the building facade for dwellings facing major roads.

Note 2: Greater front setbacks and landscaped mounds can sometimes be used along main roads (e.g. Pacific Highway and Mona Vale Road) as an alternative to masonry walls for noise control.

4.5.4 Internal amenity

With an increasing proportion of Sydney's population being housed in apartments, it is important to have better levels of internal amenity (e.g. better daylight penetration which means higher ceiling heights and reduced apartment depths; encouraging long term occupancy which relates to facilities such as providing storage and basement car parking etc).

Design Objectives**Design Controls**

- O-1 A high level of internal living amenity for all occupants.
- O-2 Adequate storage for everyday household items within easy access of each unit.
- O-3 To provide adequate storage for everyday household items within easy access of each unit; and
- C-1 Habitable rooms shall have a minimum floor to ceiling height of 2.7m.
- C-2 Non-habitable rooms shall have a minimum floor to ceiling height of 2.4m.
- C-3 One and two bedroom units shall have a minimum plan dimension of 3m (excluding wardrobe space) in all bedrooms.
- C-4 Units with three or more bedrooms shall have at least two bedrooms with a minimum plan dimension of 3m (excluding wardrobe space).

Design Objectives**Design Controls**

- C-5 All single common corridors shall:
- i. serve a maximum of 8 dwellings;
 - ii. be at least 1.5m wide (to allow ease of movement of furniture); and
 - iii. be at least 1.8m wide at lift lobbies.
- C-6 Storage space shall be provided for each unit at the following minimum volumes:
- i. 6m³ for studio and one-bedroom units;
 - ii. 8m³ for two-bedroom units; and
 - iii. 10m³ for units with three or more bedrooms, with at least 50% of the storage space for each dwelling provided within the unit.

Note 1: Storage space within dwellings can be in the form of cupboards in halls, living rooms, laundries, flexible spaces (which can also be used as studios/media rooms etc). Storage in kitchens, bedrooms or bathrooms will not count towards this requirement; and

Note 2: Storage space outside dwellings can be in garages and dedicated storeroom. The rear of a parking space is an appropriate location in the basement for part of the storage Controls.

Note 3: Where 2 car spaces are provided for a unit, the requirement for the basement storage component may be waived in order to ensure basements do not extend greater than 10% of the ground floor perimeter.

4.5.5 Outdoor living

The primary function of outdoor living spaces is to provide a high level of amenity for the occupants with access to fresh air and daylight /sunlight, visual privacy and opportunities to recreate and socialise. Private and common outdoor living spaces are to be provided for all occupants.

Design Objectives**Design Controls**

Private open space

- O-1 Private passive and active recreation spaces for all occupants.
- O-2 Private open space that is functional.
- O-3 Private open space that is responsive to the environmental character and integrated into the overall design of development.
- C-1 Ground level apartments shall have a terrace or private courtyard with a minimum area of 25m².
- C-2 All units that are not at ground level are to include outdoor living space (such as a balcony, deck or terrace) with a minimum area of:
- 10 m² for each 1 bedroom unit;
 - 12 m² for each 2 bedroom unit;
 - 15 m² for each unit with 3 or more bedrooms;
- of which at least one space shall be at not less than 10m² in area.

Design Objectives

Design Controls

Common open space

- O-4 Deep soil planting in common areas of the site.
- O-5 Easy access to common open space for all residents and visitors.

- C-3 The primary outdoor living space shall be directly accessible from the main living areas.
- C-4 The primary outdoor living space shall have a minimum dimension of 2.4m.
- C-5 Balconies are to be integrated into the overall architectural form and detail of residential flat buildings and not run the full length of a façade of a building
- C-6 Locate private open space facing north, east or west for solar access;
- C-7 Design balustrades and screens to provide visual and acoustic privacy for residents where appropriate.
- C-8 Roof terraces shall contain soft landscaping to soften the appearance of the top storey of the building.

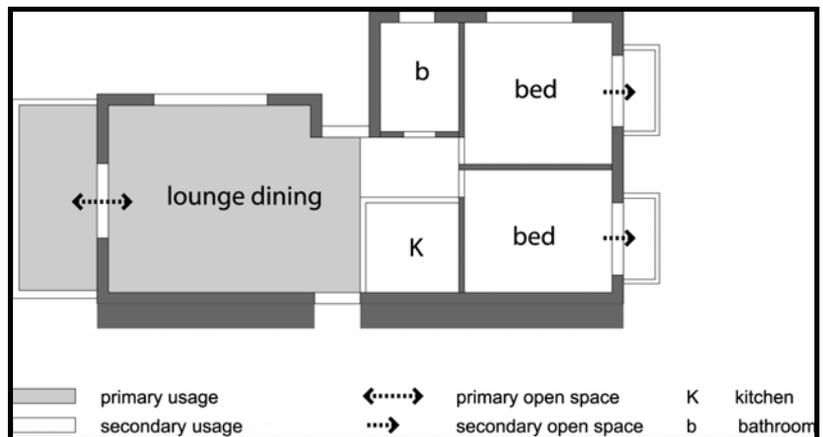


Figure 7: Private open space example

Private open space should be located adjacent to living areas and can be in the form of ground floor terraces and upper level balconies.

- C-9 At least 30% of the site area is to be common open space principally for tall tree planting.
- C-10 Private open space adjoining common open space shall not be enclosed with high solid fences.
- C-11 Locate common open space at the front and rear of lots and to optimize solar access to the open space and units.

4.6 Safety and security

This section addresses SEPP 65 Design Principle 8: Safety and security.

Quality building design helps to ensure both a truly safe human environment and to enforce the perception that an area is safe.

Design Objectives

O-1 Safe and secure multi-unit housing for residents and visitors.

Design Controls

- C-1 Apartments adjacent to common open space areas or public streets shall have at least one window or a habitable room with an outlook to that area.
- C-2 Open space
- i. Design of common open spaces, including the location and design of facilities so as not to create concealment or entrapment areas;
 - ii. Common open space areas are to be visible from the street, and/or overlooked by apartments; and
 - iii. Paths are to have unimpeded sightlines.
- C-3 Lighting on pathways surrounding the development to have a high level of illumination and good uniformity to increase visibility quality.
- C-4 Entries to buildings are to be clearly visible from streets or internal driveways.
- C-5 Buildings are to be designed to minimise access between roofs, balconies and windows of adjoining apartments.

4.7 Social dimensions

This section addresses SEPP 65 Design Principle 9: Social dimensions.

Adaptable housing is housing that is designed to be flexible to be easily modified at a later stage to cater for the special needs of an occupant or frequent visitor who may become frail, develop a disability or who have a disability that may become worse over time. Simple inexpensive design features incorporated during construction can save the need for expensive renovations as needs change in the future.

Clause 25N(2)(a) of LEP 194 requires that at least 10% of dwellings in a residential flat development be designed as adaptable housing in accordance with the provisions of Australian Standard AS4299-1995: Adaptable Housing.

Design Objectives

Design Controls

Adaptability and accessibility

- O-1 Housing choice for aged and disabled persons.
- O-2 Housing that allows people to stay in their home as their needs change due to aging or disability.
- O-3 Housing that is appropriate to the needs of visitors who are elderly or who have a disability.

- C-1 Applicants are to demonstrate that planning and design measures provide access for people with disabilities:
 - i. Building design shall be consistent with the Controls of AS 1428.1-1998 Design for Access and Mobility.
 - ii. Disabled access paths / ramps should be of a sufficient width and gentle slope up to 1 in 14 slope, include handrails and path lighting and offer direct access between the street frontage and principal building entrances.
 - iii. Bends or corners in access paths and ramps shall be of sufficient width and radius to allow the maneuvering of wheelchairs and mobility scooters.
 - iv. The ramp should not dominate the visual appearance of the development.

C-2 Each adaptable dwelling must be provided with at least one disabled car parking space designed in accordance with AS2890.1

C-3 At least 70% of dwellings are to be "visitable" in accordance with the definition prescribed under **Appendix F**.

C-4 In the case of residential flat buildings without lifts:

- i. if the whole of the site has a gradient of less than 1:10, 100% of the ground floor dwellings must be visitable
- ii. if none of the site has a gradient of less than 1:10, a percentage (which is not less than the proportion of the site that has a gradient of less than 1:10, or 50%, whichever is the greater) of all ground floor dwellings must be visitable.

Housing Mix

- O-4 A range of unit types, sizes and layouts for housing choice.

C-5 Residential flat developments are to include a range of unit sizes and types.

4.8 Building Sustainability

This section deals with the following SEPP 65 Design Principle:

Ecological sustainability

Ecologically sustainable development principles have been adopted at national, state and local levels to integrate viable development with environmental responsibility. In this way, future generations may enjoy a natural, social and economic environment that does not compromise their needs.

4.8.1 Building materials and finishes

Past building practices have often advocated the use of certain building materials that are now a recognised health risk or that have adverse environmental impacts. Alternative methods and materials are now available which can lead to cost savings as well as causing less health risk and environmental impact.

Design Objectives

- O-1 Use of construction materials with a low environmental impact.
- O-2 A high level indoor air quality.

Design Controls

- C-1 Any timber specified for the construction or finishing of the development shall be either plantation and recycled timbers.
- C-2 Medium Density Fibreboard (MDF) and particleboard shall not be specified as a construction material for the development.
- C-3 The use of alternatives to PVC piping is encouraged including Colorbond (above ground only), HDPE where appropriate.
- C-4 Roof surfaces with a sheen finish reduce unwanted heat gain in summer and are to be used where they do not impact on the amenity of neighbours in terms of glare and reflectivity.

4.8.2 Biodiversity, topography and soils

Ku-ring-gai's natural heritage is highly valued. In establishing multi-unit housing it is therefore important to conserve the natural environment, including landforms and soils. It is particularly important that development adjacent to areas of remnant bushland or endangered ecological communities (such as Blue Gum High Forest or Sydney Turpentine Ironbark Forest) will not be detrimental to the health of the local biodiversity.

Design Objectives**Design Controls**

O-1 Conservation of indigenous vegetation and other existing trees.

C-1 Maximise the retention and protection of significant vegetation on the site including understorey and ground covers.

C-2 Indigenous plant species (canopy/under storey and ground cover) that are appropriate to the soil types shall be incorporated in the landscape design to provide food and shelter for wildlife.

O-2 Development that does not significantly alter the natural topography or water table.

C-3 Excavation:

- i. Development is to be accommodated outside the canopy spread of existing trees; and
 - ii. Natural ground level is to be maintained within 2m setback of a side and rear boundary.
-

4.8.3 Waste management

All levels of government have set goals to reduce resource consumption, reduce waste generation and reduce waste disposal.

Design Objectives**Design Controls**

O-1 Efficient, effective and sustainable waste management practices.

C1 The design of residential flat developments is to be consistent with Council's adopted **DCP 40: Construction and Demolition Waste Management** for the separation, storage and collection of solid wastes.

O-2 Waste collection and storage within the site that does not affect the amenity of residents.

C2 Residential flat developments are to include a common rubbish collection/separation area sufficient in size to store all wheelie garbage bins and recycling bins provided by Council for the propose number of units in the development.

C3 The location of rubbish collection/separation units is to allow bins and associated storage area to be conveniently located, screened from view (internal to the main building or if outside the building, landscaped so as to be fully screened from public view and no closer than 6m to the front boundary) and easily wheeled to the street for collection.

C4 The design of buildings is to provide ample space for recycling systems, compactors, balers and space for sorting.

C5 The landscape plan is to incorporate an area for a composting facility and worm farm.