3 Development Principles

3.1 Preliminary Building Envelope

An allotment of land may be required to have a minimum site area or minimum frontage for a particular development either under the Parramatta LEP 2011 or this DCP. Development proposals must include a site analysis as outlined in Part 2 of this DCP to identify key opportunities and constraints for the development of the site. A preliminary building envelope is then identified, this being the three dimensional space that limits the extent of a building on the allotment. The building envelope may be defined by height and front, rear and side boundary setbacks.

The controls that define the preliminary building envelope for different types of development are set out in the Preliminary Building Envelope Tables in this section of the DCP. Once the preliminary building envelope has been determined, refinement of the envelope is necessary to 'mould' the development to best meet the planning objectives and design principles of this DCP.

The total area defined by the building envelope is generally greater than the resultant building form.

- The building envelope ***includes*** articulation zones for blade walls, shading devices and the like. These features may not project outside the building envelope.
- The building envelope ***excludes*** dormer windows, balconies, bay windows, awnings, light weight pergolas, chimneys, gutters and eaves. These elements may project outside the building envelope, subject to assessment of other development principles.

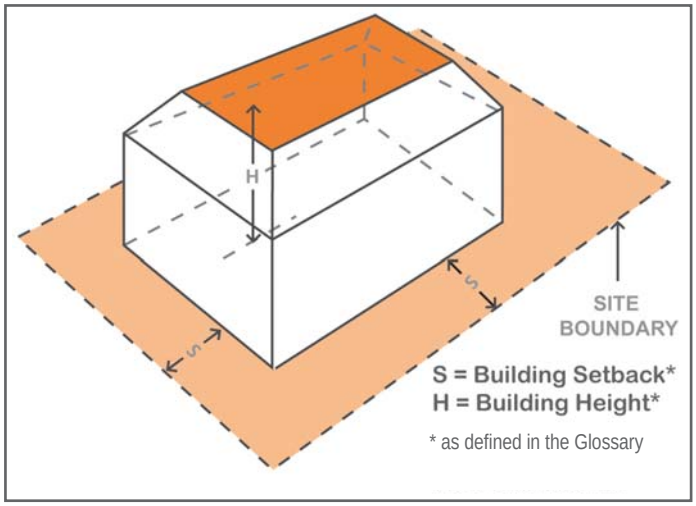

Figure 3.1 Preliminary building envelope

The preliminary building envelope is further refined by applying the relevant building, environmental, social and transport principles for development. These controls will modify the preliminary building envelope to give a form and shape to a new building.

The development principles are to be applied in all areas to which this DCP applies except where it is clear that the principle is not relevant to a particular type of development. The sequence in which the principles appear in the DCP does not represent any particular order of priority or importance.

Each principle has a set of objectives and a set of design principles which are to be considered for all development types. Where applicable, design controls for specific types of development are also included.

The objectives state the desired outcome, while the design principles and controls show ways in which that outcome may be achieved. It is expected that the design principles will inform the 'best practice' design for a development.

Applications will be considered on merit with reference to achievement of the objectives, design principles and design controls. Development that varies design principles and/or controls must satisfy the objectives of the particular general principle and balance the design outcome with the objectives of other general principles. The variation must be justified as part of the development application submission.

3.1.1 Height

The building height provisions in the Parramatta LEP 2011 indicate the maximum building height expressed in metres. This DCP specifies height limits measured both in storeys and metres. The number of storeys, as well as the height limit in metres, is not to be exceeded. This is included as a means of encouraging interesting and varied roof forms, as opposed to encouraging developments which maximise the number of storeys within the height limit and utilises a flat roof.

This DCP may specify instances where, for reasons of consistency of character, streetscape or heritage considerations, pitched roof forms will be encouraged.

Additionally, certain places have special characteristics, such as heritage significance, view corridors, amenity considerations and the like, which require particular design outcomes as outlined in Part 4 of this DCP. In this context, there are circumstances where site conditions require consideration of a lower height than that expressed in the LEP and are considered to be 'exceptions'. These exceptions are noted in the tables in this section and also in Part 4 – Special Precincts.

3.1.2 Height Transition

Where there is a common boundary between areas where a different height limit is specified, the top storey on the land with the higher height limit is to be stepped back to fit within a plane projected at a 45 degree angle from the floor below the topmost floor as show in Figure 3.2.

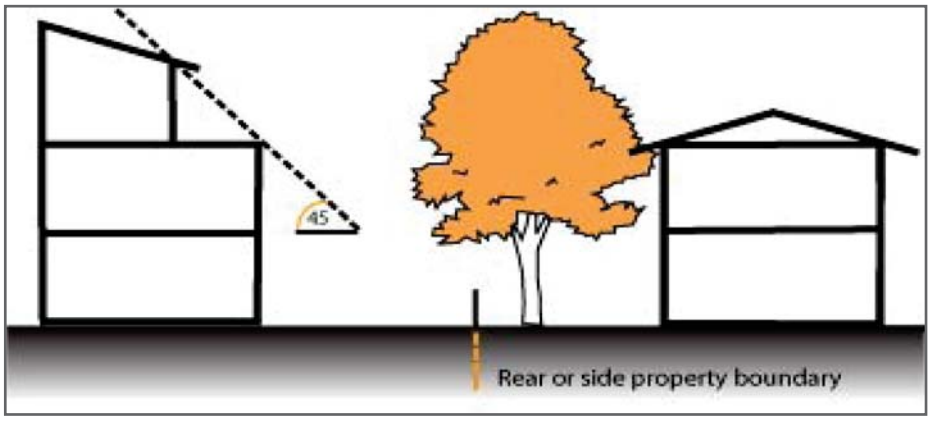

Figure 3.2 Transition in height

3.1.3 Preliminary Building Envelope Tables

Dwelling houses, Dual occupancies, Secondary dwellings and Outbuildings

NOTE 1: Area specific provisions for these development types are contained in Part 4 of this DCP.
NOTE 2: Setbacks are to be measured from their respective wall elevation.
NOTE 3: Refer to Glossary for the definition of storey.

	Dwelling Houses	Dual Occupancies	Secondary Dwellings	Outbuildings
minimum allotment size			• 450m2 • not more than one secondary dwelling is permitted on a single allotment of land	
height	• maximum height is shown on the Parramatta LEP 2011 Height of Buildings Map – 9 metres; max 2 storeys • on battleaxe allotments the maximum permissible height is 1 storey / 4.5 m, with attic rooms permitted	• maximum height is shown on the Parramatta LEP 2011 Height of Buildings Map – 9 metres; max 2 storeys; • where a property fronts a rear lane; contains a heritage item or is within a heritage conservation area, the maximum height is 1 storey / 4.5 m, with attic rooms permitted • on battleaxe allotments, the maximum height is 1 storey / 4.5 m, with attic rooms permitted	• maximum 8.5 metres • a lesser height may be required in Heritage Conservation Areas or on a heritage item	maximum height of 1 storey / 4.5 m
floor space ratio	as shown on the Parramatta LEP 2011 Floor Space Ratio Map		the secondary dwelling and principal dwelling together are not to exceed the maximum floor space ratio as shown on the Parramatta LEP 2011 Floor Space Ratio Map	all buildings together must not exceed the maximum floor space ratio as shown on the Parramatta LEP 2011 Floor Space Ratio Map
minimum site frontage	minimum 15m	• minimum 15 m • minimum 12 m for sites with two street frontages		
front setback	• primary street frontage: 5-9 m, consistent with the prevailing setback along the street • secondary street frontage (corner allotments): 3 m • small lot (< 550m2): consistent with prevailing street setback and not less than 3 m	• primary street frontage: 5-9 m, consistent with the prevailing setback along the street • secondary street frontage (corner allotments): 3m • rear lane: 3-5 m	• not forward of the main building frontage unless integrated into the design of the principal dwelling and setback in accordance with provisions for dwelling houses • secondary street frontage (corner allotments): 3 m • rear lane: minimum 1.5 metres	not forward of the main building frontage
side setbacks	minimum 900mm	minimum 1.5 metres	• minimum 900 mm for 1 storey • minimum 2 metres for 2 storeys	minimum 900 mm
rear setback	• generally: minimum 30% site length (refer to Figure 3.3) • small lot (< 550 m2): minimum 6m or consistent with the prevailing rear setback	minimum 30% site length except on corner sites and on land containing a heritage item or within a heritage conservation area, where the rear setback is to be at least 15% of the site length	• minimum 3 metres for 1 storey • minimum 6 metres for 2 storeys	minimum 3 metres
deep soil zone	• minimum 30%, including at least 50% at the rear of the site and 15% at the front of the site • dimensions not less than 4 m x 4 m	• minimum 30%, including at least 50% at the rear of the site and 15% at the front of the site • dimensions not less than 4 m x 4 m	establishment of a secondary dwelling must not reduce deep soil zone for the property to less than the minimum required for a dwelling house	
landscaped area	• minimum 40% (including deep soil zone)	• minimum 40% (including deep soil zone)		

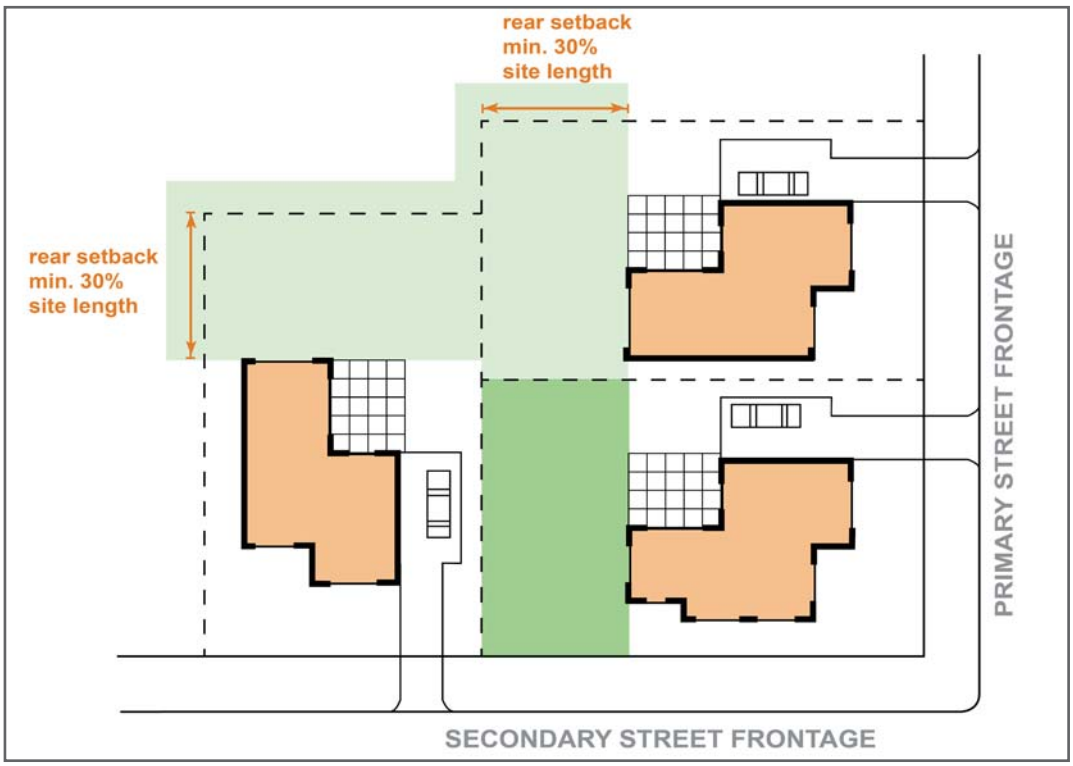

Figure 3.3 *Corner site rear setback for dwelling houses*

Multi dwelling housing and Residential flat buildings

NOTE 1: The provisions in this table do not apply to multi dwelling housing and residential flat buildings in the B4 Mixed Use zone.
NOTE 2: Area specific provisions are contained in Part 4 of this DCP.
NOTE 3: Setbacks are to be measured from their respective wall elevation.
NOTE 4: Refer to Glossary for the definition of storey.
NOTE 5: The provisions in this table do not apply to the Parramatta City Centre identified in Section 4.3.3 of this DCP.

	multi dwelling housing	residential flat buildings
height	maximum height is shown on the Parramatta LEP 2011 Height of Buildings Map – 11 metres; maximum 2 storeys within a building envelope determined by projecting a plane at 45° from the ceiling level of the uppermost storey, except where the maximum permissible height is 1 storey / 8m (with attic rooms permitted), within a building envelope determined by projecting a plane at 45° from the ceiling level of the uppermost storey. This applies to: a) rows or other arrangements of townhouses that are situated to the rear of properties (e.g. a second row of townhouses not fronting the street), or b) a row of townhouses that predominantly faces the side boundary rather than the street, for that part of the building that is not within the first 20m of building length. (NOTE: the exceptions do not apply if the row of townhouses has frontage to a road, lane, public reserve or land zoned R4 High Density Residential. In such cases, 2 storeys and a maximum building height of 11m may be permitted.)	refer to the Parramatta LEP 2011 Height of Buildings Map and transition requirements at Section 3.1.2 Height is to correspond in metres and storeys as follows: Height is to correspond in metres and storeys as follows: metres / storeys 11 / 3 14 / 4 17 / 5 20 / 6
floor space ratio	as shown on the Parramatta LEP 2011 Floor Space Ratio Map	as shown on the Parramatta LEP 2011 Floor Space Ratio Map
minimum site frontage	minimum 24m, including for each street frontage on a corner site	24 metres, except 18 metres for sites with two street / lane frontages
front setback	• primary frontage: 5 - 7 metres and consistent with the prevailing setback along the street secondary street / lane: 3 - 5m • basement carparks are not to extend beyond the building envelope into the front setback	• primary frontage: 5 – 9 metres • secondary street / lane frontage: 3 – 5 metres
side setbacks	minimum 3m, except where dwellings primarily address side boundaries, where the side setbacks must be a minimum of 4.5m. On corner allotments, to measure the side boundary setback, the side boundaries are taken to be those without street frontage.	minimum 4.5 metres
rear setback	minimum 15% of length of site	minimum 15% of length of site
deep soil zone	30% (minimum dimensions 4m x 4m) of which: • at least 50% is to be located at the rear of the site, • at least 15% is to be located at the front of the site, and • at least 10% must be communal landscaped open space (refer to Section 3.3.2 Private and Communal Open Space)	• minimum 30% of which at least 50% is to be located at rear of site • minimum dimensions 4m x 4m
landscaped area	• minimum 40% (including deep soil zone)	• minimum 40% (including deep soil zone)

Business Zones

NOTE 1: The provisions in this table relating to the B4 Mixed Use Zone apply to all the land uses permitted in this zone.
NOTE 2: The provisions in this table relating to shop top housing apply to all zones (except for the B4 Mixed Use Zone) where this development type is permitted.
NOTE 3: Area specific provisions are contained in Part 4 of this DCP.
NOTE 4: Setbacks are to be measured from their respective wall elevation.
NOTE 5: The provisions in this table do not apply to the Parramatta City Centre identified in Section 4.3.3 of this DCP

	General B1 Zone	General B2 Zone	General B4 Zone	General B6 Zone	Shop top housing	General B5 Zone
height	refer to the Parramatta LEP 2011 Height of Buildings Map and transition requirements at 3.1.2 Height of this DCP					
floor space ratio	refer to Parramatta LEP 2011 Floor Space Ratio Map					
minimum site frontage	18 metres where more than 10 metres in height	18 metres where more than 10 metres in height	18 metres where more than 10 metres in height	18 metres where more than 10 metres in height	18 metres where more than 10 metres in height	
front setback	Nil. A greater setback may be required to align with the predominant street setback.	Nil. A greater setback may be required to align with the predominant street setback.	• 3 metres except where specified in Part 4 of the DCP. • a lesser setback may be permitted if consistent with predominant street setback.	Nil. A greater setback may be required to align with the predominant street setback.	• ground level setback to be consistent with predominant street setback. • residential component to be setback an additional 2 metres beyond the ground level setback.	
side setbacks	dependent upon amenity impact/s on adjoining development.*	dependent upon amenity impact/s on adjoining development.*	dependent upon amenity impact/s on adjoining development.*	dependent upon amenity impact/s on adjoining development.*	dependent upon amenity impact/s on adjoining development.*	refer to Section 4.3.1.1 of this DCP
rear setback	15% of site length where boundary adjoins a residential development or a residential zone; and otherwise on merit.*	15% of site length where boundary adjoins a residential development or a residential zone; and otherwise on merit.*	15% of site length for residential component; and/or where boundary adjoins a residential development or a residential zone; and otherwise on merit.*	15% of site length where boundary adjoins a residential development or a residential zone; and otherwise on merit.*	15% of site length for residential component; and/or where boundary adjoins a residential development or a residential zone; and otherwise on merit.*	
deep soil zone landscaped area	rear setback area is to be a deep soil landscaped area for the following: • in the B4 Zone if residential development is proposed at ground level • for all business zones, if site adjoins residential development or a residential zone, or otherwise on merit.					

* Where development proposes a residential use (if permitted in the zone) or adjoins a residential use and is more than 2 storeys in height, building separation is to be provided as per the *Residential Flat Design Code* published by NSW Department of Planning.

Industrial Zones

NOTE: Area specific provisions are contained in Part 4 of this DCP.

height	refer to the Parramatta LEP 2011 Height of Buildings Map
floor space ratio	refer to the Parramatta LEP 2011 Floor Space Ratio Map
front setback	correspond to existing predominant building line in street where there is a defined built edge – a continuous setback to the street is desirable
rear setback	dependent on impact on amenity of adjoining development
side setbacks	nil where there will be no impact on streetscape or amenity of adjoining development
landscaped area	• 10% • landscaping with a minimum width of 2.5m is to be provided surrounding car parking and outdoor storage areas • where sites have dual street exposure, landscaping is to be provided on both frontages

3.2 Building Elements

3.2.1 Building Form and Massing

The form and massing of individual buildings, including height, bulk and scale, is a critical element in defining character and creating unity within a streetscape. To ensure successful integration of new development within existing neighbourhoods and centres in Parramatta, it is important to have sympathetic relationships between the form and massing of buildings and for development to be compatible with site conditions.

Objectives

O.1 To ensure buildings are compatible in form relative to the spatial characteristics of the local area.

O.2 To ensure building mass and form reinforces, complements and enhances the visual character of the street.

O.3 To ensure the distribution of building height and mass preserves and enhances neighbourhood amenity, site characteristics and environmental constraints.

O.4 To ensure that where changes in building scale, mass and/or height is proposed, it occurs in a manner that is sensitive to amenity issues of surrounding or nearby development.

O.5 To ensure development that achieves the maximum floor space ratio permitted on any site does not inhibit any other Objective, Performance Criteria, Design Principle or Design Controls contained within this DCP.

Design Principles

P.1 Buildings are to be of a height that responds to the topography and the shape of the site.

P.2 The proportion and massing of buildings is to relate favourably to the form, proportions and massing of existing and proposed buildings patterns in the street.

P.3 Building height and mass should not result in unreasonable loss of amenity to adjacent properties, open space or the public domain.

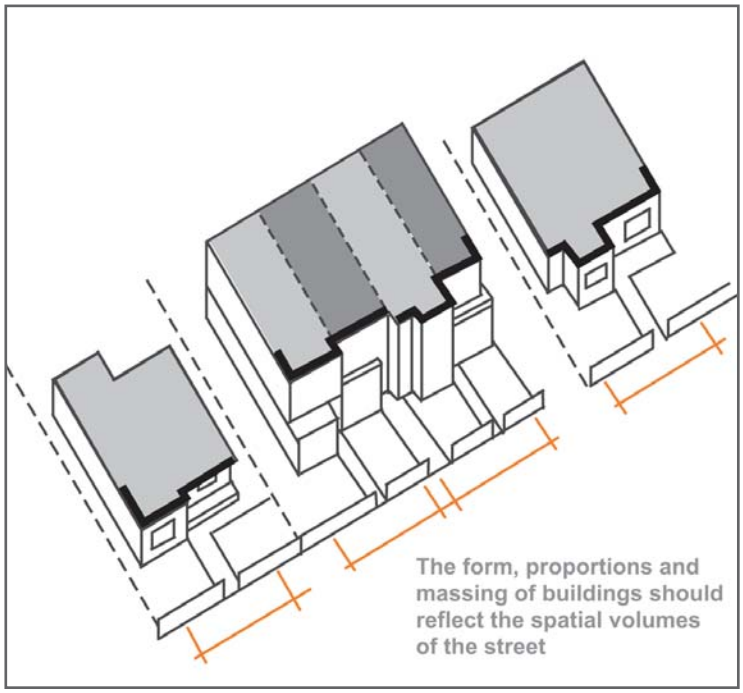

Figure 3.4 Building form and massing

P.4 The form and massing of buildings is to provide a transition between adjoining land use zones and building types.

P.5 Building form and massing is to support individual and communal entries.

P.6 For all mixed use developments, potential management arrangements, including ownership/ lease patterns are to be considered at the design stage to ensure proper functioning of various components of the building.

Design Controls

Secondary Dwellings

C.1 Secondary dwellings that are attached to the principal dwelling are to be integrated with the design, colour and materials of the principal dwelling.

C.2 Secondary dwellings are to be of a construction that is durable and robust and meets the standards specified under the Building Code of Australia. In particular, where the secondary dwelling is proposed as the conversion of an existing structure, applicants should seek expert technical advice to ensure compliance with the relevant standards.

C.3 The appearance of a secondary dwelling is not to detract from the visual amenity of the development on the site and surrounding locality.

NOTE: Refer to Appendix 4 - Neighbourhood Character Areas for details of the patterns, form, proportions, materials and detailing of housing styles that characterise different areas. These are to be used to assist in developing contemporary design of new housing development that fits sympathetically with existing local context.

3.2.2 Building Facades and Articulation

Facade treatment and the design detail and construction contribute significantly to the way a building 'reads' from the street and to the character and continuity of the streetscape. The composition and detailing of the building facade also has an impact on the apparent bulk and scale of a building.

It is important when considering the design of new development that the predominant patterns, compositions and articulation of facades reinforces the character and continuity of the streetscape. This does not mean replicating the appearance of buildings. Contemporary design solutions based on sound design principles, which reinforce and make reference to the underlying elements that create the character of the area are encouraged.

Objectives

O.1 To ensure the appearance of buildings complement and enhance neighbourhood and streetscape character.

O.2 To encourage contemporary designs which integrate with the appearance of the streetscape.

O.3 To provide attractive building facades which establish identity and contribute to the streetscape.

Design Principles

P.1 Building design and architectural style is to interpret and respond to the positive character of the locality, including the dominant patterns, textures and compositions of buildings.

P.2 Design consideration is to be given to the underlying building elements that contribute to the character of the area. Such things include roof shape, pitch and overhangs; entry porches, verandas, balconies and terraces; materials, finishes, fixtures, patterns, fenestrations, colours and detailing; the location and proportion of windows and doors. The descriptions of housing character types in Appendix 4 – Neighbourhood Character Areas for different areas of the local government area are to be interpreted in the design of residential development to protect and enhance neighbourhood amenity and character.

P.3 Building facades should be modulated in plan and elevation and articulated to reduce the appearance of building bulk and to express the elements of the building's architecture.

P.4 The facades of buildings should be designed with a balance of horizontal and vertical elements.

P.5 Alterations and additions are to be compatible with design elements of the existing building.

P.6 Building frontages and entries are to provide a sense of address and visual interest from the street.

P.7 Where security grilles/screens, ventilation louvres and carpark entry doors are used, they are to be integrated in facade designs. Solid security shutters are not encouraged.

P.8 New buildings and facades should not result in glare that causes discomfort or threatens safety of pedestrians or motorists. A Reflectivity Report that analyses the effects of potential glare from the proposed new development on pedestrian and motorists may be required.

P.9 New business and industrial buildings shall be designed so that entry points and client service areas are easily identified from the street and are clearly linked to car parking areas and pedestrian paths.

Design Controls

Balconies and Eaves

C.1 Balconies and eaves are not to project more than 800mm beyond the building envelope. Juliet balconies and bay windows are not to project more than 600mm outside the building envelope.

Residential Flat Buildings

C.2 Multiple stair/lift cores should be provided to encourage multiple street entries to buildings containing multiple dwellings.

Dwelling Houses, Dual Occupancies and Multi Dwelling Housing

C.3 Where dwellings do not face the street, they are to have recognisable entries and a sense of address as they would if they faced the street.

C.4 A mix of building materials and/or colours should be used to reduce the appearance of bulk and to integrate the building within the materials and colour palettes of the local area.

C.5 Large areas of blank, minimally or poorly articulated walls are not acceptable. Measures to avoid this may include windows, awnings, sun shading devices, pergolas, or a recognisable increased setback to the upper storey.

Refer to Appendix 4 - Neighbourhood Character Areas for details of the patterns, form, proportions, materials and detailing of housing styles that characterise different areas. These are to be used to assist in developing contemporary design of new housing development that fits sympathetically with existing local context.

3.2.3 Roof Design

Objectives

O.1 To encourage roof forms that provide continuity and consistent character in the streetscape.

O.2 To encourage roof designs that integrate with the building composition and form.

Design Principles

P.1 Attention should be given to the roof as an important architectural element in the street which can provide continuity and character.

P.2 Roof form should minimise the appearance of bulk and scale of a building.

Figure 3.5 Sympathetic and complementary roof designs

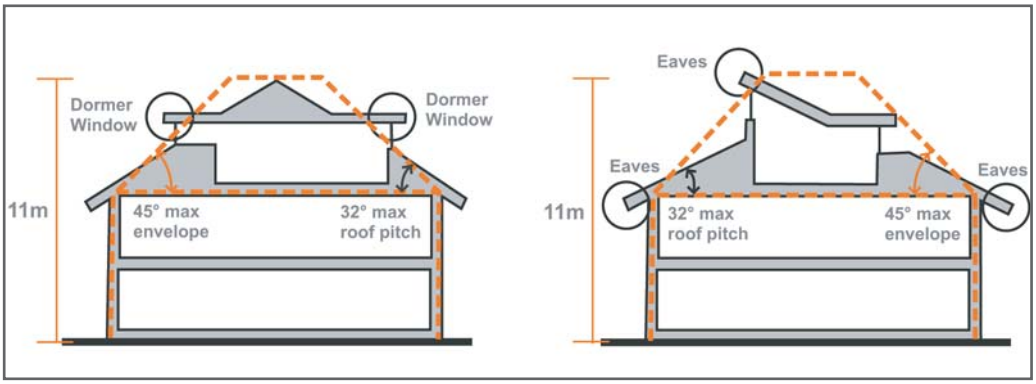

Figure 3.6 Roof envelope and pitch

P.3 Roof forms are to respond to the neighbouring roofs, in particular in scale and pitch.

P.4 The visual intrusiveness of service elements, such as service plants, lift over-runs and the like, is to be minimised by integrating them into the design of the roof.

Design Controls

Multi Dwelling Housing

C.1 Roof forms are to be contained within a building envelope determined by projecting a plane at 45° from the ceiling level of the uppermost storey (applying to all elevations of the building), to a maximum height of 11m for two storey buildings and 8m for single storey buildings. Within this envelope, a range of roof forms can be used to respond to the building type and orientation.

Buildings with Attics

C.2 The design of buildings with attics is to minimise roof bulk.

C.3 Attics are to be no greater than 25 square metres in floor area.

C.4 Roofs containing attics are not to exceed 32 degrees pitch.

C.5 Attics are to be designed to fit within the building envelope (with the exception of dormer windows) and are not to increase the bulk and height of the roof.

C.6 Dormer windows may be included in attics, provided they are no higher than the height of the main roof of the building, no greater than 1.5 metres in width and are not to incorporate or access a balcony.

C.7 Attics are to be cross ventilated.

C.8 Attic windows are not to allow overlooking of adjacent dwellings or their private open spaces.

NOTE: *Attic* has the same meaning as in the Parramatta LEP 2011.

NOTE: Refer to Appendix 4 – Neighbourhood Character Areas for details of the patterns, form, proportions, materials and detailing of housing styles that characterise different areas. These are to be used to assist in developing contemporary design of new housing development that fits sympathetically with existing local context.

3.2.4 Energy Efficient Design

Objectives

O.1 To promote sustainable development which uses energy efficiently and minimises non-renewable energy usage in the construction and use of buildings.

O.2 To ensure that development contributes positively to an overall reduction in energy consumption and greenhouse gas emissions.

O.3 To reduce energy bills and the whole of life cost of energy services.

Design Principles

Residential

P.1 Where applicable, development is to demonstrate compliance with the design principles embodied in the Building Sustainability Index (BASIX). All commitments listed on a BASIX certificate must be marked on all relevant plans and specifications.

P.2 The principles and properties of thermal mass, glazing, insulation and solar energy are to be recognised and incorporated into the design of residential development not subject to BASIX.

Non-residential Development

P.3 Improve the control of mechanical space heating and cooling by designing heating/cooling systems to target only those spaces which require heating or cooling, not the whole building.

P.4 Improve the efficiency of hot water systems by:
- encouraging the use of solar powered hot water systems. Solar and heat pump systems must be eligible for at least 24 Renewable Energy Certificates (RECs) and domestic type gas systems must have a minimum 3.5 star energy efficiency rating;
- insulating hot water systems; and
- installing water saving devices, such as flow regulators, 3 stars Water Efficiency Labelling and Standards Scheme (WELS Scheme) rated shower heads, dual flush toilets and tap aerators.

P.5 Reduce reliance on artificial lighting and design lighting systems to target only those spaces which require lighting at any particular 'off-peak' time, not the whole building. Incorporate a timing system to automatically control the use of lighting throughout the building.

P.6 All non-residential development Class 5-9 will need to comply with the Building Code of Australia energy efficiency provisions.

P.7 An Energy Efficiency Report from a suitably qualified consultant that demonstrates a commitment to achieve no less than 4 stars under the Australian Building Greenhouse Rating Scheme or equivalent must be provided for all commercial and industrial development with a construction cost of over $5 million.

Further Information

BASIX website: *www.basix.nsw.gov.au*

BASIX Design Guidelines, including Thermal Insulation and Active Heating and Cooling Systems

3.2.5 Streetscape

Streetscape represents the inter-relationship between buildings, landscape and open spaces in the street scene. The quality of the streetscape impacts on local amenity and identity. Development should recognise predominant streetscape qualities, such as building form, scale, materials and colours in order to contribute to the character of the local area.

Objectives

O.1 To ensure new development responds to, reinforces and sensitively relates to the spatial characteristics of the existing urban environment.

O.2 To increase the legibility of streetscapes and urban spaces so that the inter-relationship between development, landscape and open space is visually coherent and harmonious.

O.3 To maximise opportunities for buildings to define the public domain.

O.4 To encourage attractive street frontages and improve pedestrian amenity.

Figure 3.7 Streetscape continuity, rhythm and spacing

Design Principles

P.1 Development is to respond and sensitively relate to the broader urban context including topography, block patterns and subdivision, street alignments, landscape, views and vistas and the patterns of development within the area.

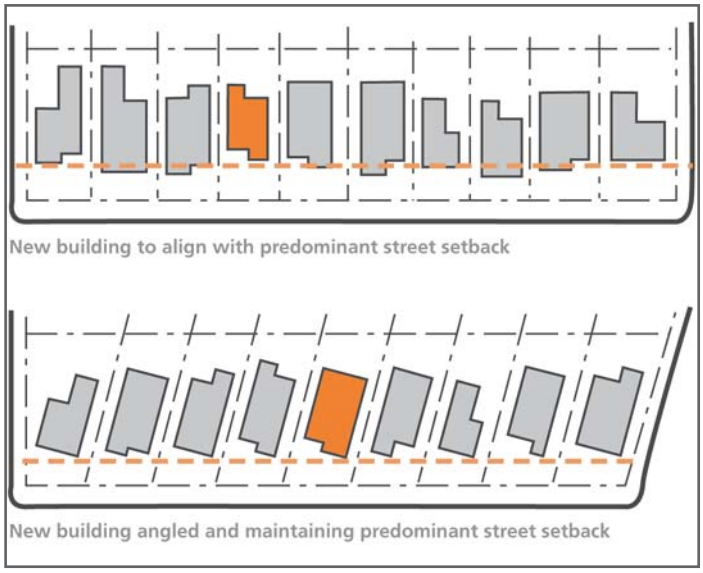

Figure 3.8 Building frontage setbacks - rectilinear streets

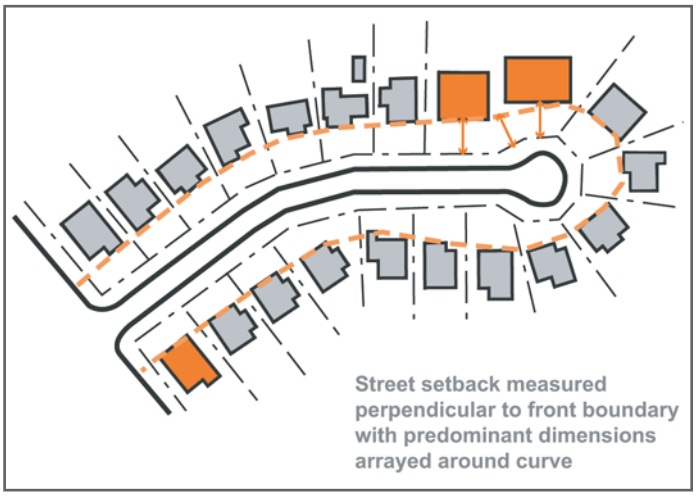

Figure 3.9 Building frontage setbacks - curvilinear street

P.2 Building design and landscaping are to be in harmony with the form, mass and proportions of the streetscape.

Figure 3.10 Transitional building between land use zones

P.3 New buildings are to recognise and enhance the patterns and elements of facades within the street. Designs are to provide visual cohesion, continuity and distinction, and in particular, have regard to the horizontal and vertical proportions of building elements which create the visual scene.

P.4 Building setbacks from the street boundary are to be consistent with prevailing setbacks of adjoining and nearby buildings.

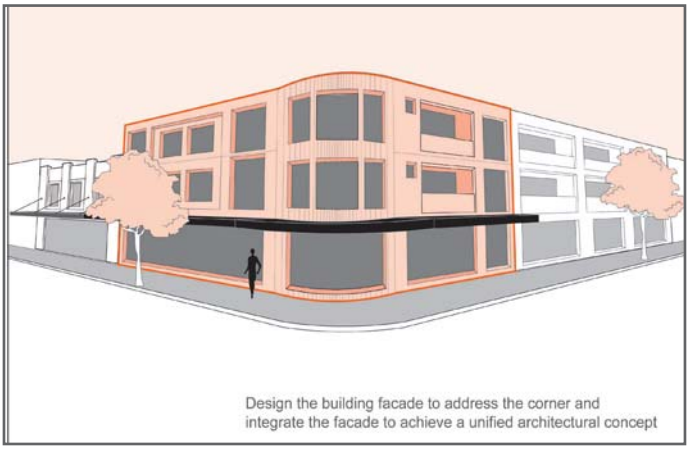

Figure 3.11 Corner building articulation

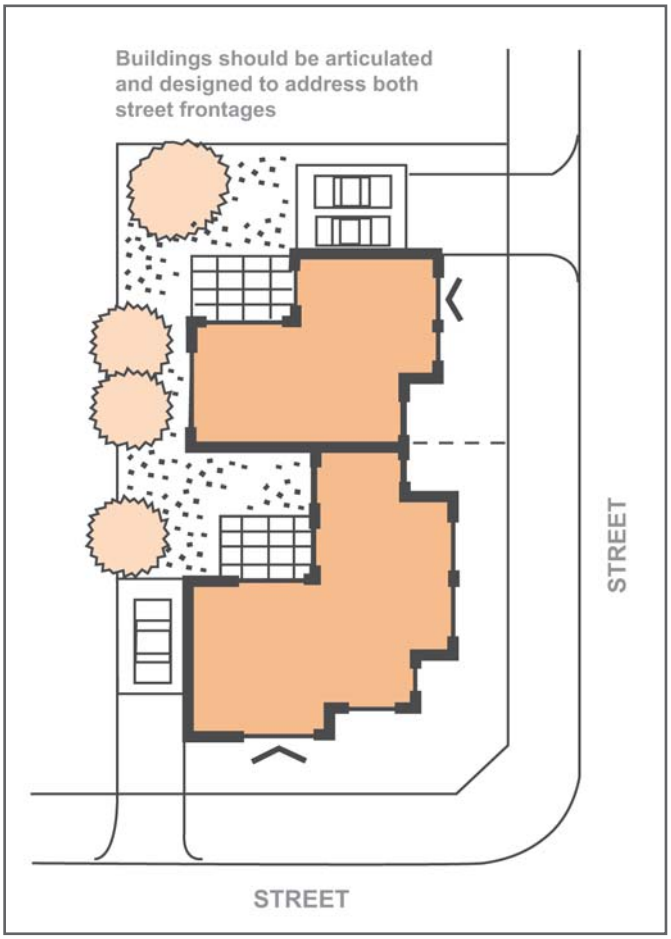

Figure 3.12 Plan view - corner articulation

P.5 Buildings on corner sites are to be articulated to address each street frontage and are to define prominent corners.

P.6 Development adjoining land use zone boundaries should provide a transition in form, considering elements such as height, scale, appearance, materials and setbacks.

P.7 Buildings on corner sites are to be articulated to address each street frontage and are to define prominent corners.

P.8 Buildings are to be constructed of suitably robust and durable materials which contribute to the overall quality of the streetscape.

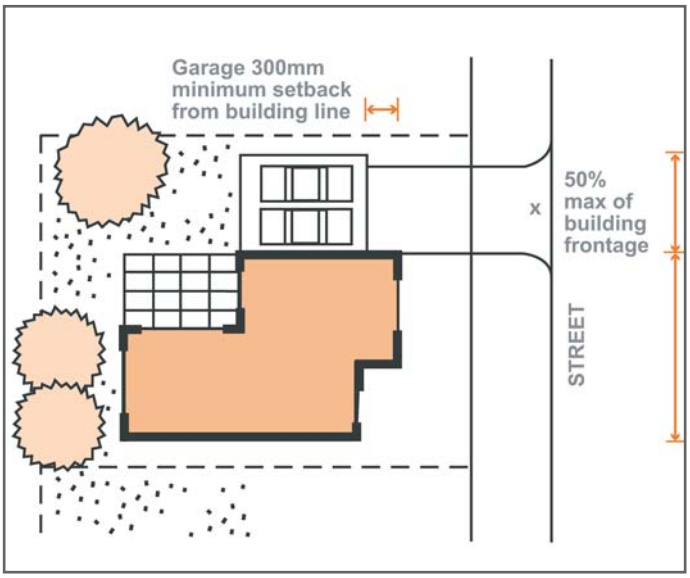

Figure 3.13 Garage setback behind building lines

P.9 Vehicular access points are to be minimised and should not break the continuity of the streetscape. Landscaping should be used to minimise the visual intrusion of vehicular access points.

P.10 Garages and parking structures are not to dominate the building facade and front setback.

P.11 Where development adjoins an existing or desired pedestrian or vehicle laneway, development should provide an address to the laneway and provide opportunities to activate the space to improve pedestrian amenity and safety. This could be achieved as follows:

For residential development:
- Create pedestrian entries from private property directly onto the laneway.
- Encourage fencing which is partially transparent to encourage surveillance of the laneway.
- Provide for landscaping to the laneway.

For business and retail development:
- Encourage active uses at the ground (laneway) level.
- Provide for landscaping to the laneway.

P.12 To create interaction with the laneway, development is encouraged to be located within 3m of the laneway edge.

P.13 Locate satellite dish and telecommunication antennae, air conditioning units, ventilation stacks and any ancillary structures;
- Away from the street frontage,
- Integrated into the roof design and in a position where such facilities will not become a skyline feature at the top of any building,
- Adequately set back from the perimeter wall or roof edge of buildings, and
- Using a master antenna for residential apartment buildings.

Design Controls

Dwelling Houses

C.1 Garages are to be a maximum of 6.3m wide or 50% of the width of the street elevation whichever is the lesser.

C.2 At grade garages and carports are to be located a minimum of 300mm behind the front wall of the building, or recessed behind the second storey front wall.

C.3 Carports and garages associated with dwelling houses should be located at the rear of the property where this is the prevailing pattern of development in the street and the garage does not compromise other controls such as soft soil requirements.

Multi Dwelling Housing

C.4 Multi dwelling housing is to be designed to integrate with the built and natural elements defining the streetscape, including the street layout and building pattern and the landscape elements contributing to the streetscape, including street trees and front gardens.

C.5 In all areas the maximum length of building frontage along the street is 20m.

C.6 The minimum separation between buildings along the street is 3m. Where this space is proposed to be used as part of the outdoor area associated with a dwelling, fencing and landscaping is to be designed to address any privacy needs for that space and also to address the amenity of the streetscape presentation of the development.

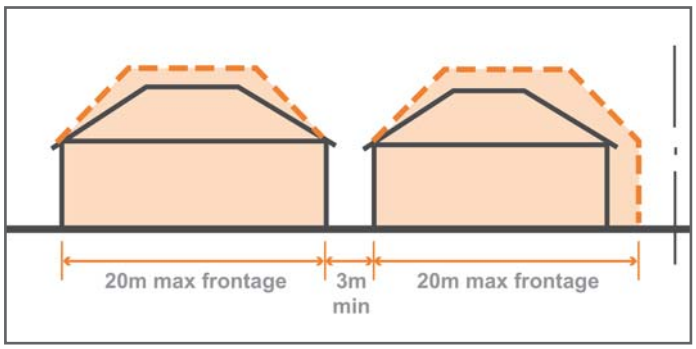

Figure 3.14 Maximum building frontage

C.7 Dwellings are not to be positioned over driveways to basement carparks where this results in an unacceptable impact on the visual amenity and continuity of the streetscape.

NOTE: Refer to Appendix 4 - Neighbourhood Character Areas for details of the patterns, form, proportions, materials and detailing of housing styles that characterise different areas. These are to be used to assist in developing contemporary design of new housing development that fits sympathetically with existing local context.

Mail Boxes for Multi Dwelling Housing and Residential Flat Buildings

C.8 Mail boxes are to be:

- visually integrated with the development and have regard to the amenity of the streetscape. Design and location details are to be provided with the development application;
- located for convenient access by residents and deliverers on main pathways; and
- in compliance with Australia Post requirements for positioning and dimensions.

B1 Neighbourhood Centre, B2 Local Centre and B4 Mixed Use zones; shop-top housing; and mixed use buildings

C.9 In the B1 Neighbourhood Centre and B2 Local Centre zones, and mixed use development in the B4 Mixed Use zone, the ground floor frontage is to provide for active non-residential uses with at-grade pedestrian access.

C.10 Ground floor retail and business shopfronts are to involve minimal use of solid walls, with frontages divided into discrete sections to maintain a fine grain, human-scale appearance.

C.11 Where buildings align to the front boundary, continuous awnings are to be provided, with new awnings the same height as, or the average of, the two adjacent awnings. Council may omit this requirement where an awning would otherwise effect street trees, heritage items or similar.

NOTE: Refer to Part 4 of the DCP for required awning locations.

C.12 Where development adjoins a laneway or through block connection, ground level uses should be designed to provide a direct interface to that space.

C.13 Development proposing outdoor dining is to comply with Council's Outdoor Dining Policy.

3.2.6 Fences

In the majoritiy of residential areas fences make a significant contribution to the streetscape and the building's address. Fences also impact upon the views between private areas and the public domain. It is important they are designed to promote high quality streetscapes, good passive surveillance and provide sufficient privacy for residence's front yards and outdoor areas.

Objectives

O.1 To ensure fences complement and conserve the visual character of the street and neighbourhood.

O.2 To define the boundaries/edges between public and private land and between areas of different function.

O.3 To contribute positively to the public domain.

Design Principles

P.1 Front fences and landscaping should allow people in their homes to view street activity.

P.2 New fences and walls are to be constructed of robust and durable materials which reduce the possibility of graffiti. The materials should be compatible with the associated building and adjoining fences.

P.3 Fences are to respond to the architectural character of the street and/or area and the buildings that they front, with streetscape character maintained on all street frontages.

P.4 Front fences should not be erected where the streetscape is characterised by an absence of front fences. Landscaping should be used to create good street address and privacy.

P.5 Use of continuous lengths of blank walls at street level is to be avoided.

P.6 Suitable planting should be used to soften the edges of fences at the interface of the public domain.

P.7 Sheet metal fencing is not to be used at the street frontage or forward of the building line or in locations that have an interface with the public domain.

P.8 Fencing should respond to the topography of a site.

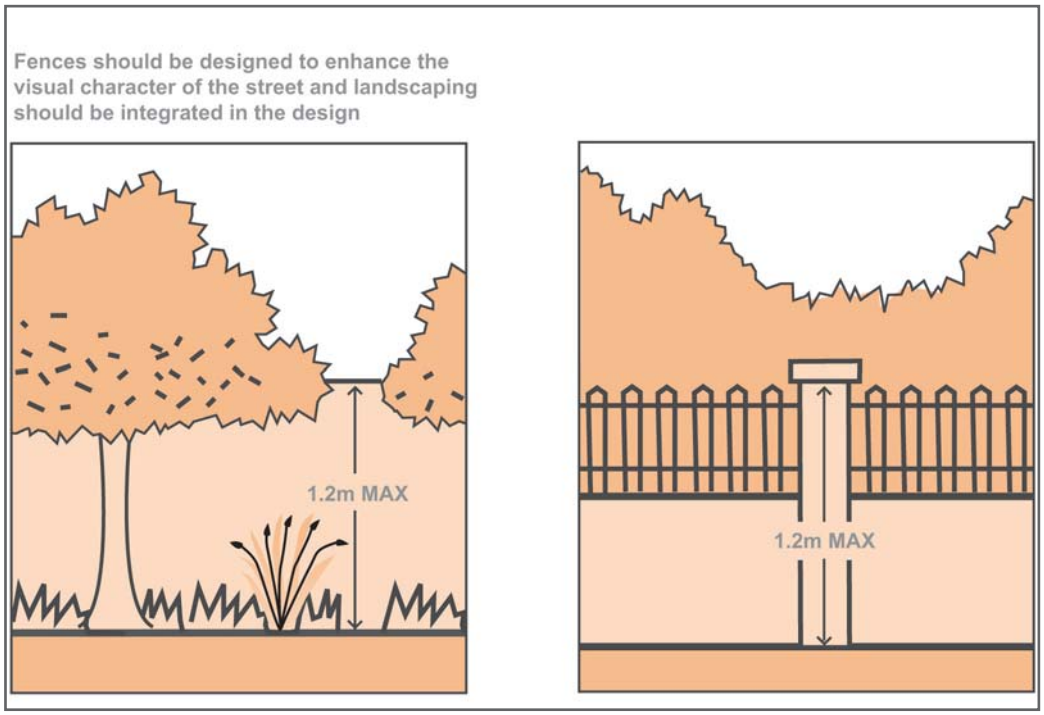

Figure 3.15 Combined fencing and landscape design

P.9 Fences should not be constructed in floodways. Where this is unavoidable fences are to be constructed of flood compatible and open type materials that will not restrict the flow of flood waters and be resistant to blockage.

P.10 Front fences are to be a maximum height of 1.2m.

P.11 Where noise attenuation or protection of amenity requires a higher fence, front fences may be permitted to a maximum height of 1.8m and must be setback a minimum of 1m from the boundary to allow landscape screening to be provided. Landscape species chosen should be designed to screen the fence without impeding pedestrian movements along the roadway. Front fences and landscape screening must not compromise vehicular movement sightlines.

NOTE: Refer to Appendix 4 - Neighbourhood Character Areas for details of the fencing characteristics associated with housing styles that characterise different areas. This is to be used to assist in the design of front fencing that fits sympathetically with housing styles and streetscapes in local context.

NOTE: Additional requirements for fences are also contained in Section 3.5 Heritage and Part 4 where certain areas or items have historical significance and special character.

3.3 Environmental Amenity

3.3.1 Landscaping

Objectives

O.1 To conserve significant natural features of the site and contribute to effective management of biodiversity.

O.2 To retain and provide for mature vegetation, particularly large and medium sized trees.

O.3 To provide continuous vegetation corridors.

O.4 To encourage the planting of indigenous, native and low water consumption plants and trees.

O.5 To enhance the existing streetscape and promote a scale and density of planting that softens the visual impact of buildings.

O.6 To provide privacy and amenity.

O.7 To promote energy efficiency by enhancing both solar access and shade.

O.8 To provide for the infiltration of water to the water table, minimise run-off and assist with stormwater management.

O.9 To ensure developments make an equitable contribution to the landscape setting of the locality.

Design Principles

P.1 Natural features on the site, such as trees, rock outcrops, cliffs, ledges, indigenous species and vegetation communities should be retained and incorporated into the design of development.

P.2 Indigenous species, especially low water consumption plants, should be used in preference to exotic species, reflecting the vegetation communities of the locality - refer to Appendix 3.

P.3 Landscaping abutting the E2 Environmental Conservation Zone under Parramatta LEP 2011 is to be landscaped with local indigenous species to protect bushland and wildlife corridors and soften the interface between the natural landscape and the urban environment.

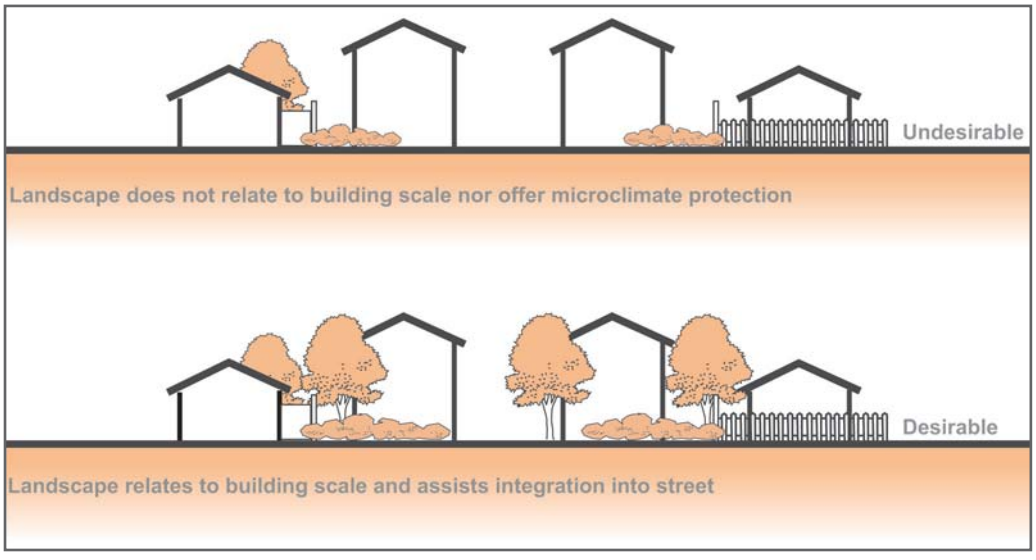

Figure 3.16 Landscaping designed to integrate new development with existing streetscape character

P.4 Landscaping is to be designed to integrate new development with the existing landscape character of the street and be sensitive to site attributes, existing landscape features, streetscape view and vistas.

P.5 Landscaping is to enhance the visual setting and accentuate the design qualities of the built form. Landscaping solutions are to be used to create a screening effect for visually obtrusive land uses or building elements.

P.6 Trees should be planted at the front and rear of properties to encourage tree canopy to soften the built environment and to encourage the continuity of the landscape pattern.

P.7 Landscaping is to be designed so as to minimise overlooking between properties.

P.8 Landscaping should provide shade in summer without reducing solar access in winter.

P.9 The amount of hard surface area is to be minimised to reduce run-off. Run-off should be reduced by directing the overland flow from rainwater to permeable surfaces such as garden beds.

P.10 Landscaped areas should be designed to require minimal maintenance by using robust landscape elements and using hardy plants with low fertilizer requirements.

P.11 A deep soil zone is required for residential development in accordance with Section 3.1.3 and the design controls below. Buildings, basement carparks, swimming pools, tennis courts, patios and decks, and impervious surfaces such as paved areas, driveways, carparking and roofed areas are NOT included as part of the deep soil zone.

P.12 Deep soil zones should adjoin the deep soil zones of neighbouring properties where practicable so as to provide for a contiguous area of deep soil and vegetation.

P.13 A landscape plan, prepared by a suitably qualified person, is to be submitted for development that, in Council's opinion, will significantly alter the landscape character. In all cases, a landscape plan will be required to accompany applications for:

- Dual occupancy development
- Multi dwelling housing
- Residential flat buildings
- Development abutting the RE1 Public Recreation zone, E2 Environmental Conservation zone or W1 Natural Waterways zone in the Parramatta LEP 2011
- Business, retail and office development
- Industrial development
- Child care centres

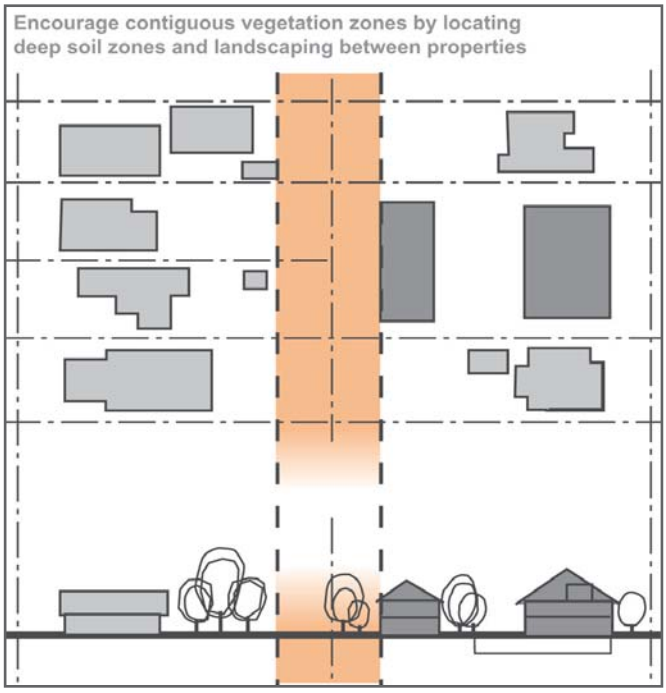

Figure 3.17 *Contiguous deep soil zones and landscaping between properties*

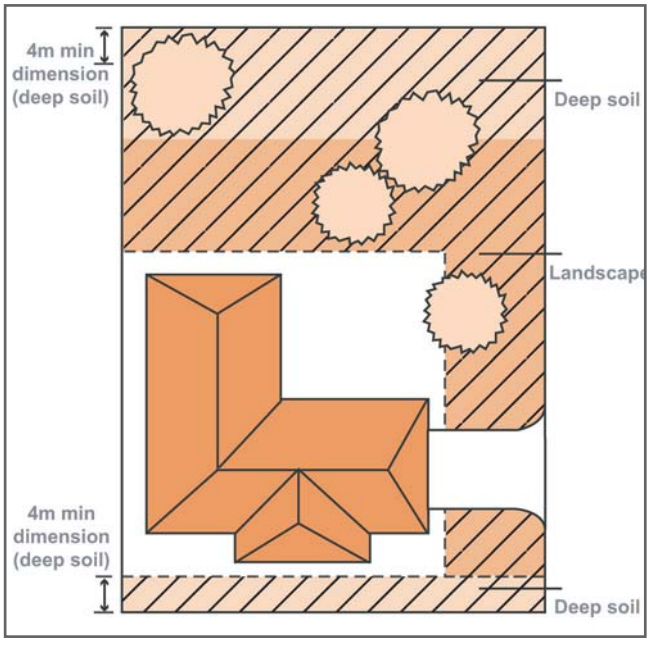

Figure 3.18 *Landscaping and deep soil zones as combined feature of site design*

Design Control

Basement Carparking

C.1 Where basement carparking extends beyond the building envelope, a minimum soil depth of 1.0m is to be provided, measured from the top of the slab and will not be calculated as part of the deep soil zone.

Further Information

BASIX Design Guidelines: Low Water Use Landscape Parramatta City Council

BASIX website: *www.basix.nsw.gov.au*

Parramatta City Council 2002, Parramatta Planting Strategy

Parramatta City Council 2003, Parramatta Biodiversity Plan

Parramatta City Council 1996, Tree Preservation Order

3.3.2 Private and Communal Open Space

Objectives

O.1 To ensure that private open space is designed to provide residents with quality usable private outdoor living areas for recreational and outdoor activities.

O.2 To ensure that private open space is designed for privacy, solar access, and is well integrated with living areas.

O.3 To provide low maintenance communal open space areas for residents that facilitate opportunities for recreational and social activities, passive amenity, landscaping and deep soil planting.

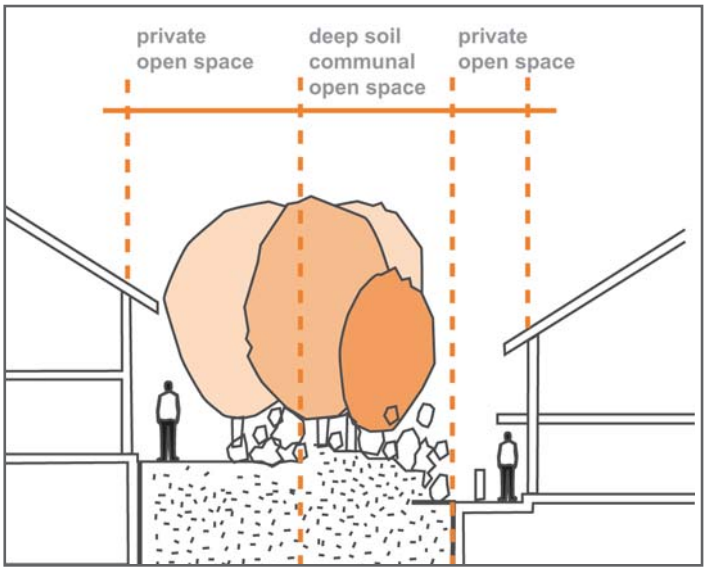

Figure 3.19 Deep Soil Communal Open Space Zones

Design Principles

P.1 Private open space is to be:

- provided for all dwellings, (with the exception of secondary dwellings, which are able to share the private open space of the principal dwelling);
- directly accessible from the living area of the dwelling and capable of serving as an extension of the dwelling for relaxation, entertainment and recreation;
- designed to ensure privacy of the occupants of adjacent buildings and within the proposed development;
- located so as to maximise solar access; and
- designed to focus on the quality of the space in terms of its outlook, orientation, relationship to the dwelling, size and shape and its enclosure and landscape treatment.

P.2 The purpose of communal landscaped open space is to provide a deep soil area outside of private courtyards that is planted with trees and landscaping that will mature and contribute to the amenity of the site and locality. In developments with more than one group of attached dwellings, the deep soil communal open space is to be provided between the buildings

Communal open space:

- is to be located where it is highly visible and directly accessible to the maximum number of dwellings;
- is to be designed with an integral role in the site and include uses such as circulation, BBQ or play areas or passive amenity;
- is to be integrated with the deep soil zone to provide a landscaped setting with opportunities for large and medium size tree planting; and
- should be located adjacent to surrounding public open spaces such as reserves and public through site links where appropriate.

Design Controls

NOTE: Private open space within the street setback is not included in the minimum private open space area calculation.

Dwelling Houses on large lots (>550m^2) and Dual Occupancies

C.1 A minimum of 100m^2 of private open space is to be provided at ground level, with minimum dimensions of 6m.

Dwelling Houses on small lots (<550m^2)

C.2 A minimum of 80m^2 of private open space is to be provided at ground level, with minimum dimensions of 4m.

Secondary Dwellings

C.3 A secondary dwelling is not to reduce the minimum area required for private open space for the principal dwelling.

Multi Dwelling Housing

C.4 A minimum of 40m^2 contiguous area of private open space is to be provided at ground level, with minimum dimensions of 4m, except for internal courtyards where the minimum dimensions are 3m. Internal courtyards will count towards a maximum of 50% of the private open space for a dwelling.

C.5 Balconies are to have minimum dimensions of 2.5m.

C.6 Communal open space is to be landscaped to provide privacy screening between buildings within and around the site and between private and communal areas on site.

Residential Flat Buildings and residential component of Mixed Use Developments

C.7 A minimum of 10m^2 of private open space per dwelling is to be provided with minimum dimensions of 2.5m.

C.8 A minimum of 10m^2 of communal open space per dwelling is to be provided.

C.9 Communal open space may be provided on the roof top where it will not adversely impact on visual and acoustic privacy, and safety and security elements.

Development in the Industrial Zones

C.10 An area of communal open space is to be provided for staff recreation, appropriate to the needs of the particular premises and integrated with adjacent open space or natural areas.

Swimming Pools

C.11 Ancillary development comprising a swimming pool for private use must be located on a lot:

- behind the setback area from a primary road, or
- in the rear yard.

C.12 The swimming pool water line must have a setback of at least 1m from a side or rear boundary.

C.13 Decking around a swimming pool must not be more than 600mm above ground level (existing).

C.14 Coping around a swimming pool must not be more than:

- 1.4m above ground level (existing), or
- 300mm wide if the coping is more than 600mm above ground level (existing).

C.15 Water from a swimming pool must be discharged in accordance with an approval under the Local Government Act 1993 if the lot is not connected to a sewer main.

C.16 A child-resistant barrier must be constructed or installed in accordance with the requirements of the Swimming Pools Act 1992.

3.3.3 Visual and Acoustic Privacy

Objectives

O.1 To ensure that development does not cause unreasonable overlooking of habitable rooms and principal private open spaces of dwellings.

O.2 To ensure that visual privacy is provided both within a development and between a development and its neighbours.

O.3 To ensure that the siting and design of development minimises the impacts of noise transmission between properties.

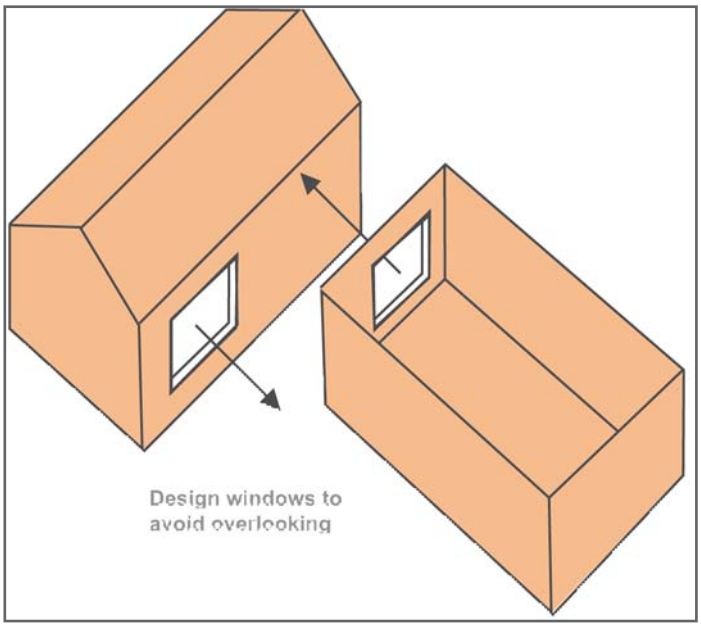

Figure 3.20 Offset windows

Design Principles

P.1 Development should be located, oriented and designed to maximise visual and acoustic privacy between buildings.

P.2 The internal layout of buildings is to be designed to minimise overlooking of living areas, private open spaces and adjoining school yards.

P.3 Building elements such as balconies and decks are to be designed to minimise overlooking of living areas, private open spaces of adjoining dwellings and adjoining school yards.

P.4 The windows of dwellings are to be located so they do not provide direct and close views into the windows of other dwellings, particularly those of living areas.

P.5 The windows of dwellings are to be located and designed so as to reduce the transmission of noise.

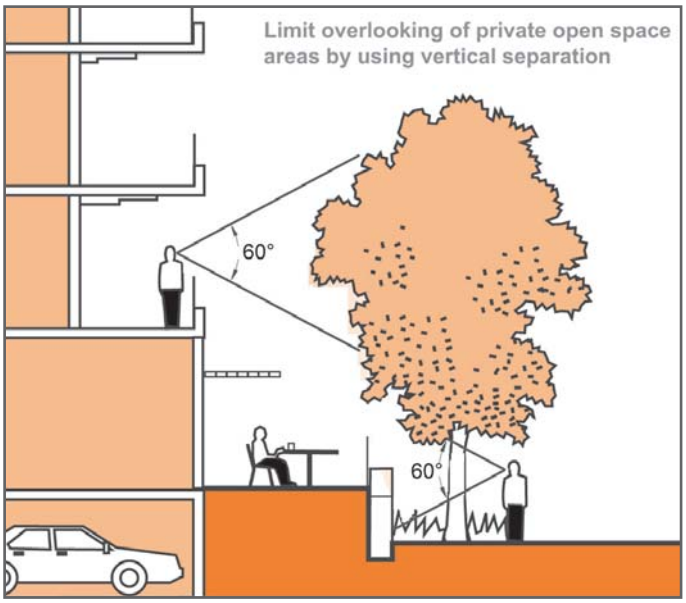

Figure 3.21 Vertical separation

P.6 Building design elements should be used to increase visual and acoustic privacy such as recessed balconies and/or vertical fins between adjacent balconies, oblique windows, fencing, vegetation and louvres and pergolas which limit overlooking of lower dwellings, private open space and adjoining school yards.

P.7 The internal layout of buildings is to be designed so as to reduce the effects of noise transmission. For example, dwellings with common party walls should locate noise generating rooms such as living rooms adjacent the noise generating rooms of other dwellings.

P.8 Appropriate building materials should be used to provide acoustic privacy.

P.9 Consideration is to be given to the relationship between residential and non-residential components of mixed use development with regard to noise attenuation and privacy.

P.10 The ground floor level (finished) of any building should not exceed 500mm.

Design Controls

Residential flat buildings, multi dwelling housing, the residential component of mixed use development, dwelling houses, and dual occupancies

C.1 Balconies should face the street or another element of the public domain, such as a park.

C.2 Building separation is to provide generous courtyard spaces for optimum visual and acoustic privacy, communal open space and significant landscaping.

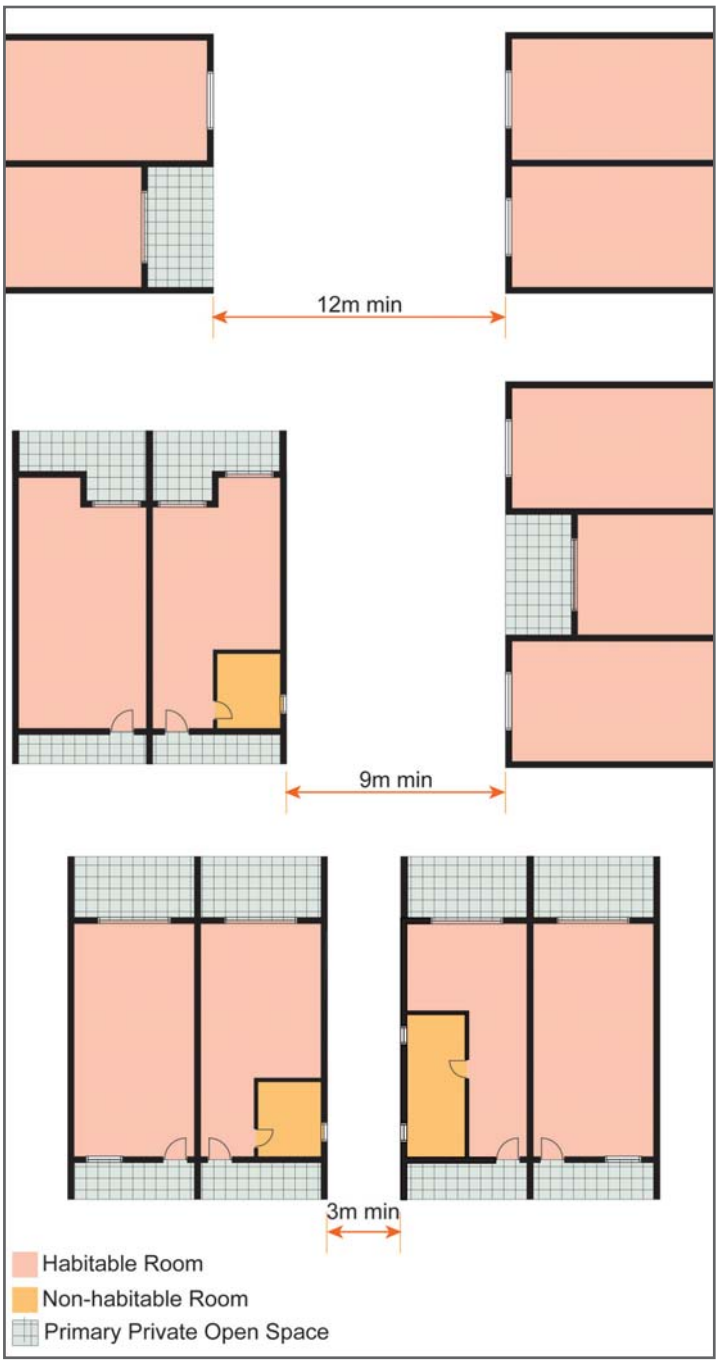

Figure 3.22 Building separation

C.3 Landscaping should be used along boundaries to obscure sight lines for optimum visual privacy.

Multi Dwelling Housing

C.4 Minimum of 12m separation is required between buildings within the development site where habitable rooms face habitable rooms. Minimum of 9m separation is required between buildings within the development site where habitable rooms face non-habitable rooms or blank walls.Minimum of 3m separation is required between buildings within the development site where non-habitable rooms/blank walls face other non-habitable rooms/ blank walls.

C.5 Where the 3m building separation between buildings along the street is used as part of a

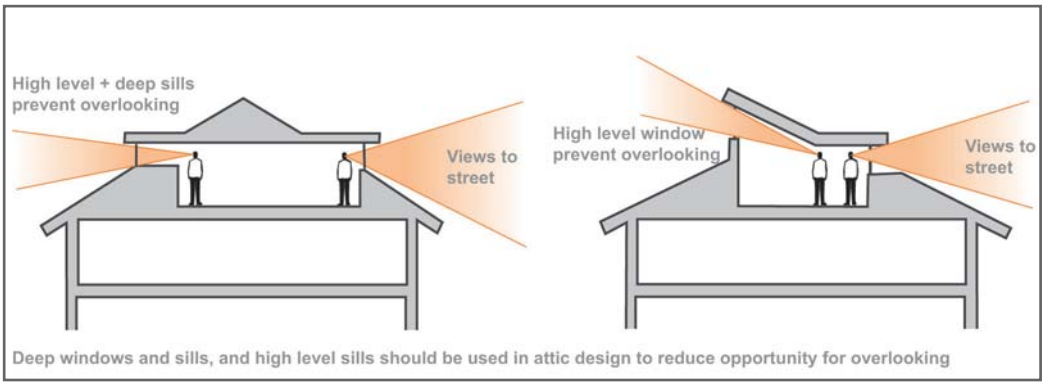

Figure 3.23 Attic windows designed to enhance privacy

dwelling's outdoor space, the associated dwelling may have openings facing that space.

C.6 Attics which are located in two storey buildings may be permitted only in dwellings which face the street or which directly face another element of the public domain such as a park.

C.7 Attics windows are not to allow overlooking of adjacent dwellings or their private open spaces. An outlook to the street should be provided from attic windows where appropriate.

Residential Flat Buildings

C.8 The minimum separation between habitable rooms/balconies is 12m.

C.9 For loft dwellings facing rear lanes, the minimum separation between habitable rooms/ balconies is 8m.

C.10 The minimum separation between habitable rooms/balconies is 12m up to and including the third storey and 18m above the third storey.

3.3.4 Acoustic Amenity

Objectives

O.1 To ensure that the siting and design of buildings minimises noise impacts from abutting busy roads, rail corridors and other noise-generating land uses.

O.2 To ensure that commercial or industrial development does not unreasonably diminish the amenity of nearby residential uses from noise intrusion.

Design Principles

P.1 Where dwellings are proposed within proximity to noise-generating land uses such as major roads and rail corridors, entries, halls, storage rooms, bathrooms and laundries should be located on the noise affected side of each dwelling and should be able to be sealed off by doors from living areas and bedrooms where practicable.

P.2 Where dwellings are proposed within proximity to noise-generating land uses, appropriate materials with acoustic properties should be incorporated such as solid core doors with seal vents and insulation and suitably treated glazing.

P.3 Non-residential development is not to adversely affect the amenity of adjacent residential development as a result of noise, odour, hours of operation and/or service deliveries.

P.4 Council may require a report by an acoustic consultant to be submitted with development applications for noise generating developments or for residential developments on sites adjacent to noise generating sources such as busy roads and rail corridors.

P.5 The provisions of the *State Environmental Planning Policy (Infrastructure) 2007 and*

Development near Rail Corridors and Busy Roads Interim Guideline must be taken into consideration, to minimise impacts of busy roads and railway corridors on residential and other sensitive development such as schools, child care centres, places of public worship and health services facilities.

Design Control

Residential Development

C.1 Internal habitable rooms of dwellings affected by high levels of external noise are to be designed to achieve internal noise levels of no greater than 50dBA.

NOTE: A busy road is defined as carrying an annual average daily traffic volume of more than 40,000 vehicles (based on the traffic volume data available on the Road and Traffic Authority's website).

Further Information

Building Code of Australia

Environmental Protection Authority *NSW Industrial Noise Policy*

Environmental Protection Authority *Environmental Criteria for Road Traffic Noise*

NSW Department of Planning 2008, *Development near Rail Corridors and Busy Roads - Interim Guildeline*

Roads and Traffic Authority *Reducing Traffic Noise - a Guide for Home Owners, Designers and Builders*

Rail Infrastructure Corporation (RIC) and State Rail Authority (SRA) Interim Guidelines for Councils: Consideration of Rail Noise and Vibration in the Planning Process

Relevant Australian Standards, including:

- AS 3671 Road Traffic Noise Intrusion
- AS 1055 Parts 1, 2 and 3 - 1997 Acoustics - Description and Measurement of Environmental Noise
- AS 2107 - 1987 Acoustics - Recommended design sound levels and reverberation times for building interiors

RIC and SRA Interim Guidelines for Applicants: Consideration of Rail Noise and Vibration in the Planning Process

RIC website - *www.ric.nsw.gov.au*

State Environmental Planning Policy (Infrastructure) 2007

3.3.5 Solar Access and Cross Ventilation

Objectives

O.1 To provide thermal comfort for occupants.

O.2 To ensure that development does not unreasonably diminish sunlight to neighbouring properties and within the development site.

O.3 To ensure that sunlight access is provided to private open space and habitable rooms to improve amenity and energy efficiency.

O.4 To ensure sufficient volumes of fresh air circulate through buildings to create a comfortable indoor environment and to optimize cross ventilation.

O.5 To ensure that sunlight access is provided to public open space.

Design Principles

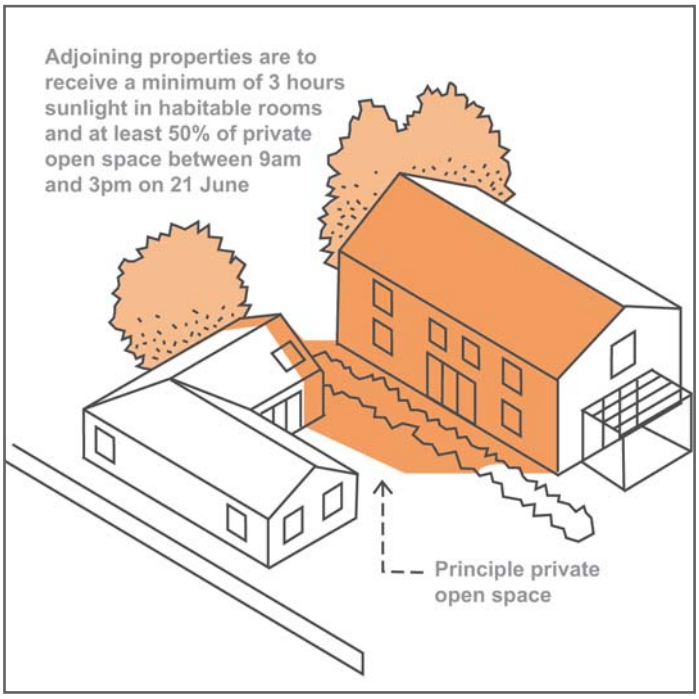

Figure 3.24 *Solar access to adjoining properties and principle private open space*

P.1 Development is to be designed and sited to minimise the extent of shadows that it casts on:

- private and communal open space within the development;
- private and communal open space of adjoining dwellings;
- public open space such as bushland reserves and parkland;
- solar collectors of adjoining development; and
- habitable rooms within the development and in adjoining developments.

P.2 Dwellings within the development site and adjoining properties are to receive a minimum of 3

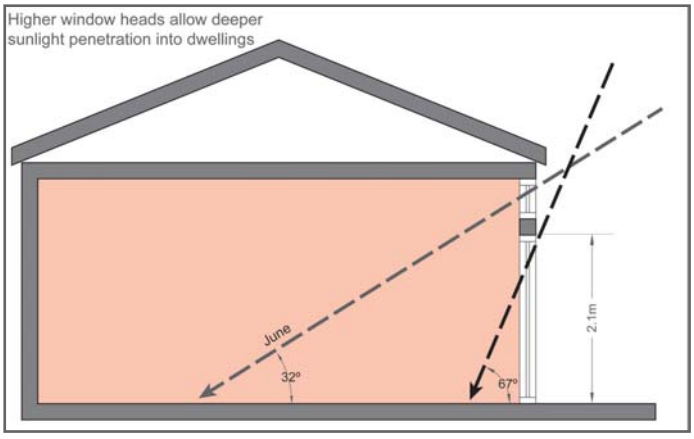

Figure 3.25 *Design to enhance solar access*

hours sunlight in habitable rooms and in at least 50% of the private open space between 9am and 3pm on 21 June. Where existing development currently receives less sunlight than this requirement, this should not be unreasonably reduced. In order to demonstrate that this can be achieved, shadow diagrams may be required with the development application.

P.3 Living areas of dwellings such as kitchens and family rooms should be located on the northern side of dwellings and service areas such as laundries and bathrooms to the south or west.

P.4 Building setbacks may need to be increased to maximise solar access and to minimise overshadowing from adjoining buildings. Building heights may also need to be stepped to maximise solar access.

P.5 In habitable rooms, head and sill heights of windows should be sufficient to allow sun penetration into rooms.

P.6 Landscaping should provide shade in summer without reducing solar access in winter.

P.7 Buildings should have narrow cross sections, providing dual aspect for dwellings to allow for cross ventilation.

P.8 Buildings should be orientated to benefit from prevailing breezes.

P.9 All rooms should contain an external window to provide direct light and ventilation. Exceptions may be considered for non-habitable rooms where this cannot be achieved practicably and mechanical ventilation can be provided.

P.10 Natural cross ventilation should be achieved by locating window openings in opposing walls and in line with each other.

P.11 Buildings should be designed to facilitate convective currents through the following measures:

- by locating small windows on the windward side and larger windows on the leeward side thereby utilising air pressure to draw air through the dwelling;
- buildings can be designed to draw cool air in at lower levels and allow warm air to escape at higher levels, for example maisonette and two-storey dwellings.

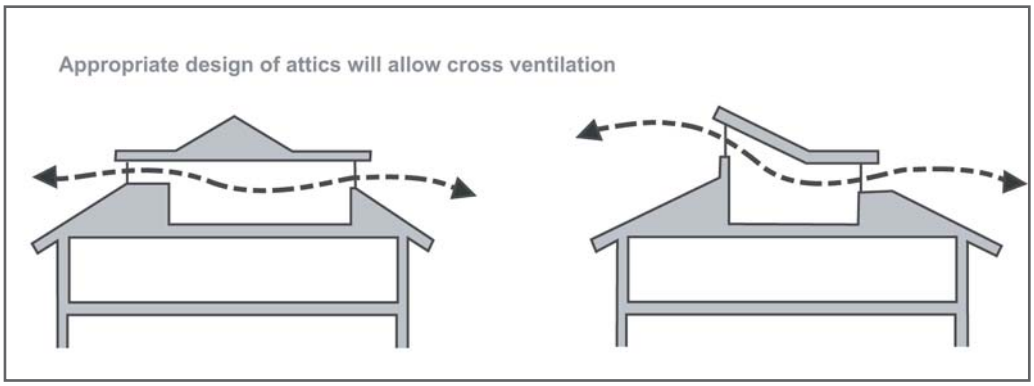

Figure 3.26 Attic design to enhance cross ventilation

P.12 Building elements such as operable louvres and screens, pergolas, blinds etc should be used to modify environmental conditions where required, such as maximizing solar access in winter and sun shading in summer.

NOTE: The extent of shadows is to take into account the range of factors that impact on solar access, including the slope of the land, aspect, existing and proposed vegetation and the height and position of existing buildings and structures, including fences.

Design Controls

Attics

C.1 Attics are to be cross-ventilated.

Dwelling Houses and Dual Occupancies

C.2 The minimum floor to ceiling height is 2.7m on the ground floor and 2.4m on the first floor.

C.3 The maximum floor to ceiling height is 3.0m.

C.4 Existing floor to ceiling heights may be continued for alterations and additions to existing dwellings.

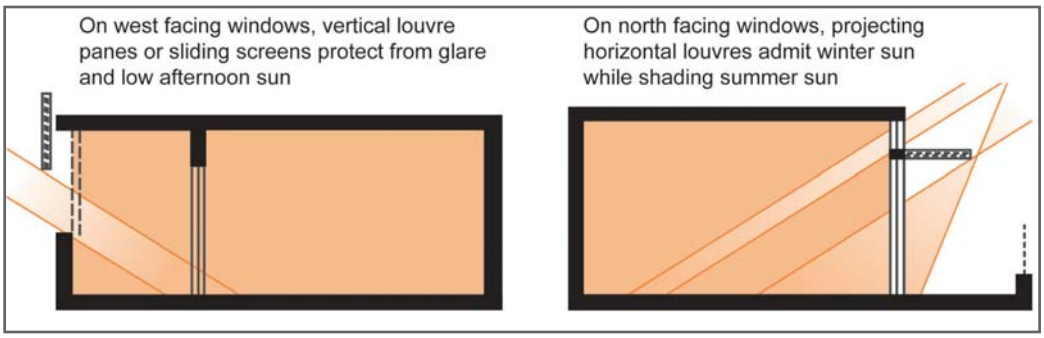

Figure 3.27 *Multi-unit design to enhance solar access*
Source: Residential Flat Design Code, Planning NSW

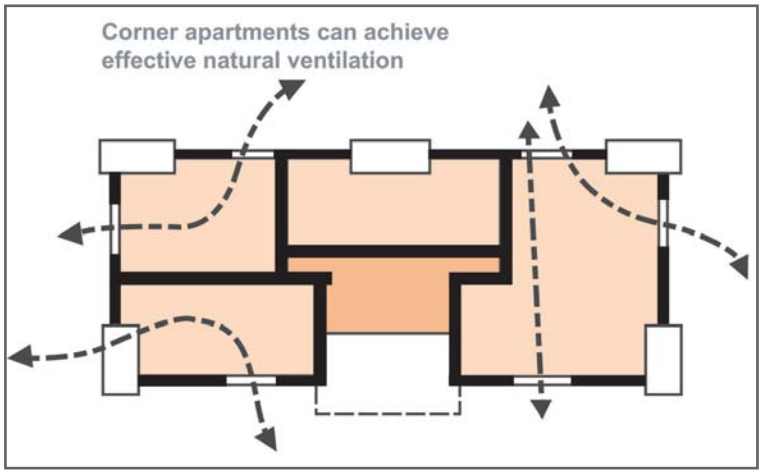

Figure 3.28 *Cross ventilation of apartments*
Source: Residential Flat Design Code, Planning NSW

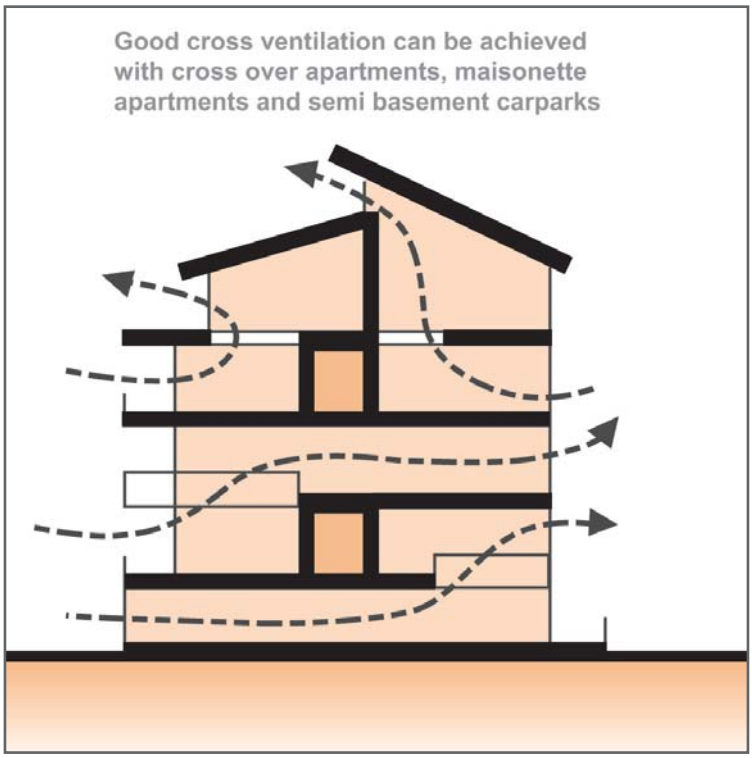

Figure 3.29 *Cross ventilation of multi-unit buildings*
Source: Residential Flat Design Code, Planning NSW

Multi Dwelling Housing

C.5 The maximum building depth is 14m where dwellings do not include an internal courtyard and 18m where dwellings contain an internal courtyard.

C.6 The minimum floor to ceiling height is 2.7m (excluding attics).

C.7 The minimum dwelling width is 5m (measured between the external walls).

Residential Flat Buildings

C.8 The minimum floor to ceiling height is 2.7m.

C.9 80% of dwellings are to be naturally cross ventilated.

C.10 Single aspect dwellings are limited in depth to 8m from a window.

C.11 The maximum building depth is 18m.

Mixed Use Development

C.12 The minimum floor to ceiling height is 3.3m for non-residential uses on the ground floor and 2.7m above ground floor. The floor to ceiling height may however, be reduced for attics, mezzanines and the like.

C.13 In the B4 Mixed Use zone, building layouts are to be flexible to allow variable tenancies or uses on the ground floor for mixed use developments and residential flat buildings. Minimum floor to ceiling heights on the ground floor should be 3.3 metres to encourage flexibility.

Development in B1 Neighbourhood Centre and B2 Local Centre zones (other than mixed use development)

C.14 The minimum floor to ceiling height is 3.3m on the ground floor and 2.7m above ground floor. The floor to ceiling height may however, be reduced for attics, mezzanines and the like.

Further Information

BASIX website: *www.basix.nsw.gov.au*

BASIX Design Guidelines, including Thermal Comfort

Department of Infrastructure, Planning and Natural Resources *Residential Flat Design Code*

Sustainable Energy Development Authority (SEDA)

3.3.6 Water Sensitive Urban Design

In the Parramatta Local Government Area, all developments will be required to implement the principles of Water Sensitive Urban Design (WSUD). WSUD is an approach that aims to minimise the impacts of development upon the water cycle and achieve more sustainable forms of urban development. It aims to integrate stormwater management systems into the landscape in a manner that provides multiple benefits including stormwater retention and detention and water efficiency, whilst addressing the pre-development considerations of flooding, waterways and groundwater protection, habitat creation and improving visual amenity.

3.3.6.1 Stormwater Drainage

Objectives

O.1 To minimise the quantity of stormwater run-off including changes in flow rate and duration by disconnecting impervious areas.

O.2 To protect and enhance existing natural or constructed drainage networks including channel bed and banks by controlling the magnitude and duration of erosive flows.

O.3 To ensure that downstream flora and fauna are protected from stormwater impacts during and post construction.

O.5 To minimise surcharge from the existing drainage systems.

O.6 To minimise and control nuisance flooding and to provide for the safe passage of less frequent floods.

O.7 To ensure that on-site stormwater management measures are operated and maintained in accordance with design specifications.

Design Principles

P.1 WSUD principles are to be integrated into the development through the design of stormwater drainage, on-site detention and landscaping and in the orientation of the development rather than relying on ‘end of pipe’ treatment devices prior to discharge.

P.2 Operating practices and technology are to be employed to prevent contamination of stormwater.

P.3 Development is to be sited and built to minimise disturbance of the natural drainage system.

P.4 Impervious surfaces are to be minimised and soft landscaping and/or permeable paving used to promote infiltration and reduce stormwater run-off.

P.5 WSUD elements should be located and configured to maximise the impervious area that is treated.

P.6 Adequate provision is to be made for the control and disposal of stormwater run-off from the site to ensure that it has no adverse impact on Council’s stormwater drainage systems, the development itself, or adjoining properties. Stormwater drainage design criteria are to be in accordance with Council’s current Design and Development Guidelines.

P.7 On-site detention (OSD) will be required as outlined in the Upper Parramatta River Catchment Trust On-Site Detention Handbook.

P.8 Stormwater, including overland flows entering and discharging from the site, must be managed. The site drainage network must provide the capacity to safely convey stormwater run-off resulting from design storm events listed in Council's Design and Development Guidelines.

P.9 Council will generally not permit the construction of stormwater drainage lines through public reserves.

P.10 The design and location of stormwater drainage structures, such as detention and rainwater tanks, is to be integrated with the landscape design for the site. Above-ground structures are not to be visually intrusive.

P.11 Run-off entering directly to waterways or bushland is to be treated to reduce erosion and sedimentation, nutrient and seed dispersal.

P. 12 The discharge of polluted waters from the site is not permitted. Discharges from premises of any matter, whether solid, liquid or gaseous is required to conform to the Protection of the Environment Operations Act and its Regulations, or a pollution control approval issued by the NSW Office of Environment and Heritage for Scheduled Premises.

P.13 For developments required to prepare a WSUD strategy as identified in Table 3.32, those developments must achieve pollution reduction targets identified in Table 3.30 and prepare a WSUD Strategy as outlined in Appendix 7.

P.14 All development must consider the WSUD measures listed in Tables 3.31 in order to achieve water quality and quantity targets.

P.15 Pollution load reduction as defined in Table 3.30 is to be determined preferably through the Model for Urban Stormwater Improvement Conceptualisation (MUSIC), using suitable modelling parameters for Parramatta / Western Sydney. Pollution load reduction may also be determined by an equivalent, widely accepted model or methodology.

Table 3.30: Stormwater Treatment Targets for Development

Pollutant	Performance Target reduction loads[1]
Gross Pollutants	90% reduction in the post development mean annual load of total gross pollutant load (greater than 5mm)
Total Suspended Solids	85% reduction in the post development mean annual load of Total Suspended Solids (TSS)
Total Phosphorus	60% reduction in the post development mean annual load of Total Phosphorus (TP)
Total Nitrogen	45% reduction in the post development mean annual load of Total Nitrogen (TN)
Hydrocarbons, motor oils, oil and grease	No visible oils for flows up to 50% of the one-year ARI peak flow specific for service stations, depots, vehicle body repair workshops, vehicle repair stations, vehicle sales or hire premises, car parks associated with retail premises, places of public worship, tourist and visitor accommodation, registered clubs and pubs

NOTE: Reductions in loads are relative to the pollution generation from the same development without treatment.

Table 3.31: Scale of WSUD Application in Urban Catchments
Source: UPRCT WSUD Technical Guidelines for Western Sydney

WSUD Measure	Allotment Scale	Subdivision Scale	Open Space or Regional Scale
Vegetated Swales	N/A	Yes	Yes
Vegetated Filter Strips	Yes	Yes	Yes
Sand Filters	Yes	Yes	Yes
Bioretention Systems • Off-line (planting beds) • On-line (conveyance)	 Yes Yes	 Yes Yes	 Yes Yes
Permeable Pavements	Yes	Yes	Yes
Infiltration Trenches	Yes	Yes	Yes
Infiltration Basins	N/A	Yes	Yes
Rainwater Tanks	Yes	N/A	N/A
Landscape Developments	Yes	Yes	Yes

Design Controls

The type of WSUD information required to support a Development Application varies for different scales of development. The design controls required by this DCP are based on the fact that additional impervious areas resulting from new development or alteration / addition to existing development cause increased stormwater runoff which impacts on hydrology, water quality and waterway stability. The impact of site imperviousness is also influenced by the degree of connectivity to the stormwater drainage system.

C.1 Development must comply with Table 3.32.

C.2 Where a Site Stormwater Management Plan (SSMP) incorporating water sensitive urban design measures is required, it must:

- identify the potential impacts associated with stormwater run-off for a proposed development and provide a range of appropriate measures for water quantity, water quality and water efficiency and re-use; and
- be developed in accordance with Council's current Design and Development Guidelines; and
- achieve pollution reduction targets identified in Table 3.30 and consider measures as identified in Table 3.31; and
- utilise the MUSIC modelling tool (or equivalent) to determine pollution load reduction as defined in Table 3.30; and
- address the requirements of Appendix 7 – Water Sensitive Urban Design Strategy Guide; and
- be prepared by a suitably qualified professional.

Procedural Steps:

Step 1 – Identify the development type by using Table 3.32.

Step 2 – Determine what Water Efficiency and Stormwater Treatment Targets are required for the development type (refer to BASIX and WELS Scheme references and Table 3.30) utilising the MUSIC model or equivalent to justify the selection and sizing of measures to meet Council targets for your development type.

Step 3 – Submit the completed requirements (in accordance with Appendix 7) with your Development Application for assessment.

Table 3.32: Stormwater Drainage Requirements

Land Use	Development Type	Water Efficiency		Stormwater Treatment
		BASIX	WELS Scheme	SSMP incorporating WSUD Strategy
Residential	Minor alterations and additions <$50k – no requirements	Not Required (NR)	NR	NR
Residential	Alterations and additions <$50k with new roof area greater than or equal to 50 square metres	NR	Required	Rainwater tank connected to roof area. Minimum 2000 litres in volume.
Residential	Major alterations and additions >$50k	Required	NR	NR
Residential	New single dwellings, dual occupancies and residential developments up to 4 dwellings including multi dwelling housing, residential flat buildings and mixed use development	Required	NR	NR
Residential	Residential development of 5 or more dwellings including multi dwelling housing, residential flat buildings and mixed use development	Required	NR	Required
Commercial & Industrial	All new development	NR	Required	Required
Commercial & Industrial	Alteration and additions where the increase in the roofed and / or impervious area* is equal to or greater than 150m²	NR	Required	Required
Subdivision	Residential subdivision up to and including 4 lots	NR	NR	NR
Subdivision (where new road or carriageway works are involved)	Residential (5 or more lots) or commercial and industrial subdivision	NR	NR	Required
Other development not listed above	>$50k whereby additional impervious* and roofed area is greater than 150 square metres	NR	Required	Required

NOTE:

* Additional impervious area includes building footprint (including roof area), vehicle access ways and parking spaces.

Further Information

Engineers Australia 2005, *Australian Runoff Quality.*

eWater Corporative Research Centre 2009, MUSIC Modelling Guidelines for New South Wales

Facility for Advancing Water Biofiltration 2008, *Guideline Specifications for Soil Media in Bioretention Systems.*

Parramatta City Council, *Design and Development Guidelines on Stormwater Drainage.*

South East Queensland Healthy Waterways Partnership 2010, Water by Design Guidelines and Resources - http://waterbydesign.com.au/guidelines/

Water Sensitive Planning Guide - www.wsud.org

Water Sensitive Urban Design Engineering Procedure: Stormwater, Melbourne Water.

Water Sensitive Urban Design Technical Guidelines for Western Sydney (UPRCT, 2004) - *www.wsud.org/tech*

3.3.6.2 Water Efficiency

Objectives

O.1 To reduce consumption of potable water.

O.2 To harvest rainwater and urban stormwater turnoff for use.

O.3 To reduce waste water discharge.

O.4 To capture, treat and reuse wastewater where appropriate.

Design Principle

P.1 Development is to incorporate relevant measures to facilitate water conservation such as:

- landscaping with plant species that require minimal water
- using water efficient taps, dual flush toilets, shower roses of flow restricting devices
- providing water efficient appliances such as washing machines and dishwashers
- minimising the volume of stormwater draining from the development site and facilitating water re-use through the use of rainwater tanks, on-site detention and re-use of onsite grey water/black water or externally treated/recycled water (dual reticulation where applicable).

Design Controls

Residential Development

C.1 Where applicable, development is to demonstrate compliance with the design principles embodied in the Building Sustainability Index (BASIX). All commitments listed on a BASIX certificate must be marked on all relevant plans and specifications.

C.2 Residential development not subject to BASIX is to incorporate water efficiency measures including 3 star Water Efficiency Labelling and Standards Scheme (WELS Scheme) plumbing fixtures.

Non-residential Development

C.3 All of the following water saving measures are to be incorporated into new non-residential developments. Alterations and additions (of existing building footprint) where the increase in the roofed and/or impervious area is less than 150 metres squared require compliance with (i) and (ii) below. Alterations and additions (of existing building footprint) where the increase in the roofed and/or impervious area is equal to or greater than 150 metres squared require compliance with (i) and (ii) below and are encouraged to incorporate the remaining five water efficiency requirements in the alterations and additions to the existing building.

(i) Plumbing fixtures are to meet minimum Water Efficiency Labelling and Standards (WELS) Scheme Standards including 3 star rated showerheads, 4 star rated toilet cisterns, 5 star rated urinals and 6 star rated water tap outlets.

(ii) Appliances (dishwashers, clothes washers etc) are to be 3 stars (WELS Scheme) or better rated with respect to water use efficiency. Demonstrate, if necessary, how these requirements will be achieved for replacement appliances, appliances not installed at construction, or bought in by occupants following construction.

(iii) Rainwater tanks or other alternative water sources are to be installed to meet 80% of toilet and laundry demands.

(iv) Connection to recycled water (serviced by dual reticulation) for permitted non-potable uses such as toilet flushing, laundry, irrigation, car washing, fire fighting, industrial processes and cooling towers.

(v) Incorporate passive cooling methods that rely on improved natural ventilation to supplement or preclude mechanical cooling, cooling towers are to be connected to a conductivity meter to ensure optimum circulation; include a water meter connected to a building energy and water metering system to monitor water usage; and to employ alternative water sources where practical.

(vi) Water use within open spaces to be minimised by improved soils, passive irrigation and integration of vegetated stormwater treatment system into open spaces.

(vii) Irrigation, water features and other open space features are to be supplied from alternative sources (e.g. rainwater, greywater, or wastewater) to meet 80% of demand.

Further Information

BASIX Design Guideline: A-Rated Water Fittings and Appliances

BASIX website: *www.basix.nsw.gov.au*

State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004

Water Sensitive Planning Guide: *www.wsud.org*

WELS Scheme: *www.waterrating.gov.au*

3.3.6.3 Grey Water

Grey water is the wastewater from your washing machine, laundry tub, kitchen sink, dishwasher, shower, bath and hand basins. It does not include wastewater from the toilet, urinal or bidet which is known as blackwater. Greywater can be used around the home or business as an alternative to using drinking water.

There are three ways that greywater can be reused - manual bucketing, greywater diversion devices, and greywater treatment systems as per Table 3.33.

Table 3.33: Greywater reuse methods and required approvals

Methods	Council Approval	Product Licenses Required	Permitted End-Uses
Manual Bucketing	No*	None	Above ground irrigation Toilet bowl flushing
Greywater Diversion	No**	WaterMark License[1]	Sub-surface irrigation
Greywater Treatment	Yes	NSW Health accredited	Above ground irrigation Toilet flushing Washing machine

NOTES.

*Council approval is not required for manual bucketing if greywater is used in accordance with the 'NSW Guideline for Sewered Residential Premises (Single Household) Greywater Reuse', available at www.waterforlife.nsw.gov.au.

**Council approval is not required for greywater diversion devices if the conditions of Section 75A of the Local Government (General) Regulation 2005 are met.

[1]Greywater diversion devices with this WaterMark have been licensed to Australian Standards (ATS5200:460).

3.3.7 Waste Management

Objectives

O.1 To reduce the quantity of waste and encourage the recycling of waste generated by demolition and the construction of new developments.

O.2 To encourage building design that will minimise waste generation over the lifetime of the building.

O.3 To ensure that the disposal of waste generated by a building's occupants over its lifetime is managed appropriately and efficiently.

O.4 To ensure that waste storage facilities are located appropriately and do not impact negatively on the streetscape.

O.5 To ensure that waste can be effectively collected and managed.

O.6 To assist in achieving Federal and State Government waste minimisation targets.

Design Principles

P.1 Waste should be minimised by reducing, re-using and recycling demolition, construction and general waste.

P.2 Excavated material, demolition and builder's waste should be re-used or recycled or, as a last resort, processed in an appropriate manner at a site approved by the NSW Office of Environment and Heritage.

P.3 The re-use of second hand building materials and the use of recycled building products is encouraged.

P. 4 Separate waste storage areas must be provided for residential and business uses in mixed use developments. Handling methods and the location of the waste storage areas shall have no negative impact on the streetscapes, building presentation or amenity of occupants and pedestrians.

P.5 Development is required to provide an appropriate room for the storage of garbage, recyclable and compostable waste bins to enable the efficient separation of waste products. Waste storage rooms shall be situated in a position for easy access and removal of bins and shall be ventilated, have floor drainage, lighting and water supply.

P.6 Where a sufficient sized kerbside collection point cannot be provided for the number of bins to stand in single file one metre apart without encroaching neighbouring properties, Council will require details of an alternative garbage collection service. Council staff should be consulted in these situations, as it may be necessary to engage a private waste collection contractor.

P.7 Developments are to incorporate convenient access for waste collection, noting that Council does not provide collection from within private properties or roads. Should a private waste collection vehicle be required to enter a property, access driveways and internal roads must be designed to provide adequate clearance and manoeuvring space to allow the waste collection vehicle to enter and exit in a forward direction without impeding upon general access to, from or within the site.

P.8 In the case where a development proposes to use a dumpster/bulk bins, access is to be provided from the street level without the need for manual handling with sufficient space for the collection vehicle to drive to the collection point, empty the bin safely and exit without traffic interference or any height restrictions. This service is generally not provided by Council's waste contractor, and arrangements as outlined in P.6 may be required.

P.9 Development applications which involve demolition and/or the construction of new buildings must comply with the Performance Criteria at Table 3.34 and include a Waste Management Plan. A Waste Management Plan must provide the following information

- the volume and type of waste to be generated;
- whether the waste will be re-used, recycled or disposed of;
- building materials and design techniques;
- the operation of ongoing waste management, post-occupancy; and
- details and plans showing the applicable storage and collection areas.

The Waste Management Plan for multi-unit housing, residential flat buildings, and commercial development is to be prepared by a specialist waste consultant and is subject to approval by Council.

NOTES:

Appendix 8 provides a template of a Waste Management Plan.

In the case where a proposed development is required to be serviced by a private contractor, it is best practice to consult with private contractors at the early stages of the development process.

Please refer to the NSW Office of Environment and Heritage, Model Waste Not Development Control Plan Chapter 2008 for waste and recycling generation rates. This can be viewed at http://www.environment.nsw.gov.au/resources/warr/08353SiteWasteMin2.pdf

Please contact Council's Waste Management Section for information regarding Council's waste services and bin sizes.

For multi-unit development applications, please refer to the NSW Office of Environment and Heritage 'Better Practice Guide for Waste Management in Multi-unit Dwellings' for guidance on waste facility design and management.

Table 3.34: Performance Criteria

Performance Criteria		Development Type						
		Subdivision with engineering works	Demolition	Single dwellings, semi-detached and dual occupancy	Multi-unit dwellings and residential flat buildings	Mixed use developments	Business use	Industrial use
Storage								
Stockpile	Siting to take account of environmental factors, e.g. slope, drainage, location of waterways and native vegetation	✓	✓	✓	✓	✓	✓	✓
	Facilitate on-site source separation	✓	✓	✓	✓	✓	✓	✓
	Facilitate re-use of materials on-site	✓	✓	✓	✓	✓	✓	✓
	The establishment and maintenance of a resource recovery system and the completion of a waste stream analysis to identify waste materials that have the potential to be reduced, reused or recycled							✓
Site Waste Bins	Provide sufficent space for storage of recyclables and garbage on-site	✓	✓	✓	✓	✓	✓	✓
	Facilitate on-site source separation	✓	✓	✓	✓	✓	✓	✓
	Facilitate re-use of materials on-site	✓	✓	✓	✓	✓	✓	✓
Waste cupboard	Provide an indoor waste cupboard or sufficient space within the kitchen (or an alternate location) for the interim storage of waste and recyclables for each dwelling/unit			✓	✓	✓	✓	✓
	Design and locate so as to be accessible and useable			✓	✓	✓	✓	✓
	Design and locate to cater for change of use				✓	✓	✓	✓
On-site waste area	Locate an onsite waste/recycling storage area for each dwelling that is of sufficient size to accommodate the required number of Council waste, recycling and garden waste bins			✓	✓	✓	✓	✓
	Multiple or communal storage rooms are required where the development is large or where the site characteristics warrant				✓	✓	✓	✓
	Locate waste compaction equipment where proposed				✓	✓	✓	✓
	Waste storage area is to be easily accessible and have unobstructed access to Council's usual collection point			✓	✓	✓	✓	✓

Performance Criteria		Development Type						
		Subdivision with engineering works	Demolition	Single dwellings, semi-detached and dual occupancy	Multi-unit dwellings and residential flat buildings	Mixed use developments	Business use	Industrial use
On-site waste area	Locate waste containers in a suitable location so as to complement the design of the development			✓	✓	✓	✓	✓
	Locate waste areas so to avoid vandalism, nuisance and adverse visual impacts on residents, neighbours and the streetscape			✓	✓	✓	✓	✓
	Provide access to a cold water supply for the cleaning of bins and the waste storage area(s). Wastewater is to be discharged to the sewer				✓	✓	✓	✓
	Allow space for signs and educational material to be displayed in waste storage areas				✓	✓	✓	✓
	Provide area(s) for storage of bulky waste (eg. clean up materials) and adequate servicing				✓	✓	✓	✓
Collection/Disposing								
Collection point	Identify a sufficiently sized kerbside collection point for the collection and emptying of Council's waste, recycling and garden waste bins. The collection point should not impede upon traffic and pedestrian safety			✓	✓	✓	✓	✓
	Ensure the bin transfer route to the collection point does not exceed a grade of 1:14 where bin sizes are less than 360L			✓	✓	✓	✓	✓
	Provide Council with onsite demolition and construction waste dockets to confirm which facility received the material for recycling or disposing	✓	✓	✓	✓	✓	✓	✓
Waste Management Plans to be submitted to Council								
	Form 1	✓	✓	✓	✓	✓	✓	✓
	Form 2		✓	✓	✓	✓	✓	✓
	Form 3			✓	✓	✓	✓	✓
	Form 4			✓	✓	✓	✓	✓

Further Information

Business Recycling website, *www.businessrecycling.com.au*

NSW Office of Environment and Heritage website, *www.environment.nsw.gov.au*

NSW Office of Environment and Heritage, *Better Practice Guide for Waste Management in Multi-unit Dwellings 2008*

NSW Office of Environment and Heritage, *Model Waste Not Development Control Plan Chapter 2008*

Streamline website, *www.streamline.org.au*

Waste Avoidance and Resource Recovery Act, 2001

3.4 Social Amenity

3.4.1 Culture and Public Art

Parramatta is committed to strengthening the city as an urban place by reinvigorating its identity through means that encourage reinterpretation of history and reflect contemporary culture.

Parramatta has a diverse community of cultural, linguistic and religious groups. Many sites have cultural significance relating to links with a particular social or cultural sub-group in the community or a link with the settlement and indigenous history of Parramatta. There is an opportunity to reflect these cultural links in the character and design of major development, including the provision of public art and interpretation to enrich the quality of the urban environment of Parramatta.

Parramatta's heritage assets and public art have a visible presence in the city. The development of historical interpretation and contemporary public art has created a distinctive urban environment that signifies and articulates the history of the area while reflecting the culture of the contemporary community, particularly within Parramatta's major local centres. Recent capital upgrades of the public domain in these centres has seen the inclusion of a number site specific artworks.

Objectives

O.1 To recognise and build on cultural identity and diversity in the design of development by creating 'places' through the integration of art and interpretive material into the fabric of the city in ways to reflect, respond and give meaning to the city's unique environment, history and culturally diverse society.

O.2 To promote development that is unique to the City and that reflects links to social or cultural sub-groups in the community or links with the settlement and indigenous history of Parramatta and to reflect and engage with community aspirations, create discussion, interest and awareness, and foster relationships between people and place.

O.3 To promote the inclusion and integration of site specific public artworks within development which are, accessible to the public, make a positive contribution to the urban environment and add to the cultural development of the City. This will include identifying sites for public artworks that are both large and pedestrian scaled.

O.4. To facilitate and encourage artists to work in multidisciplinary teams in the development of projects that shape and redesign the City's built environment and public domain.

Design Principles

P.1 All new development having a capital value of more than $5,000,000 in the following major local centres and zoned as indicated in the Parramatta LEP 2011 and Parramatta City Centre LEP 2007, is required to provide and implement an Arts Plan as part of the overall development. The plan is to include the provision of high quality artworks within the development in publicly accessible locations, near main entrances and street frontages and in lobbies.

- Epping - B2 Local Centre
- Ermington - B2 Local Centre
- Granville - B2 Local Centre and B4 Mixed Use
- Guildford - B2 Local Centre
- Harris Park - B1 Neighbourhood Centre
- Westmead - B4 Mixed Use
- Parramatta City Centre - All Zones

P.2 In addition, development on sites over 5,000m2 in area is required to provide and implement an Arts Plan as part of the overall development. The plan is to include the provision of high quality artworks within the development in a publicly accessible or visible location.

P.3 Arts and Cultural Plans are to be prepared having regard to links between the development site and any particular social or cultural sub-groups in the community, the settlement and indigenous history of Parramatta, or other culturally significant elements. Development on such land should be designed in a manner that considers and reflects those links. Historical and cultural elements, including buildings and archaeological features are to be interpreted and integrated with artworks.

Further Information

Parramatta City Council, *Art and The Public Domain - Outline of Arts Plan Process*

3.4.2 Access for People with Disabilities

People who design, build, own, manage, lease, operate, regulate and use premises have responsibilities and rights under the Disability Discrimination Act, 1992 (DDA). The DDA is a Commonwealth Act which seeks to eliminate bias against people with disabilities and protect their rights. The DDA states that failure to provide equal access is unlawful, unless to do so would impose an unjustifiable hardship.

Objectives

O.1 To ensure that all people within the City are able to:

- participate in community life; and
- access all public spaces and premises and utilise all goods, services and facilities provided in these spaces and premises.

O.2 To ensure that applicants are aware that they have obligations under the Disability Discrimination Act, 1992.

Design Principle

P.1 The siting, design and construction of premises available to the public are to ensure an appropriate level of accessibility, so that all people can enter and use these premises. Access is to meet the requirements of the Disability Discrimination Act, 1992 (DDA), the relevant Australian Standards and the Building Code of Australia (BCA).

NOTE: Compliance with the BCA, the Australian Standards and this DCP does not mean that a development will be compliant with the DDA and provide protection against a complaint under the DDA.

Further Information

Advisory Notes on Access to Premises (Human Rights and Equal Opportunity Commission 1998)

Building Code of Australia

Disability Discrimination Act, 1992

Human Rights and Equal Opportunity Commission web site, *www.hreoc.gov.au*

Relevant Australian Standards, eg:

- AS 1428.1 to AS 1428.4 - Design for Access and Mobility
- AS 2890.6 (2009) - Parking Facilities Off Street Parking for People with Disabilities
- AS 2890.5 (1993) - On-street parking
- AS 1735.12 (1999) - Lifts for persons with Disabilities
- AS 4299 - Adaptable Housing
- AS 4586 (2002) - Slip resistance classification of new pedestrian surface materials
- AS 4663 (2002) - Slip resistance measurement of existing pedestrian surfaces.

Standards Australia website, *www.standards.com.au*

Transport Standards (Human Rights and Equal Opportunity Commission 2002)

3.4.3 Amenities in Buildings Available to the Public

Objective

O.1 To encourage a high standard of women's facilities, and amenities for parents in both women's and men's toilets in buildings available to the public.

Design Principle

P.1 The number of women facilities and amenities for parents in women's and men's toilets are encouraged to be of a higher rate and standard than that prescribed in the Building Code of Australia.

3.4.4 Safety and Security

The design of buildings and places has an impact on perceptions of safety and security as well as actual opportunities to commit crime. Design for safety works by enabling casual surveillance, reinforcing territory, controlling access and managing space.

The application of the principles outlined in the NSW Police Service's 'Crime Prevention Through Environmental Design' (CPTED), promotes physical conditions that deter opportunities for criminal behaviour and aims to make our communities safer places.

Objectives

O.1 To reduce crime risk and minimise opportunities for crime.

O.2 To increase and contribute to the safety and perception of safety in public and semi-public spaces.

O.3 To encourage the consideration and application of crime prevention principles when designing and siting buildings and spaces.

O.4 To encourage dwelling layouts that facilitate safety and encourage interaction and recognition between residents.

Design Principles

P.1 Development is to be designed to incorporate and/or enhance opportunities for effective natural surveillance by providing clear sight lines between public and private places, installation of effective lighting, and the appropriate landscaping of public areas.

P.2 Development should be designed to minimise opportunities for crime through suitable access control. Physical or symbolic barriers should be used to attract, channel and/or restrict the movement of people. Landscaping and/or physical elements may be used to direct people to destinations, identify where people can and cannot go and restrict access to high crime risk areas such as carparks.

P.3 Development is to incorporate design elements that contribute to a sense of community ownership of public spaces. Encouraging people to gather in public spaces through appropriate design techniques, helps to nurture a sense of responsibility for a place's use and condition.

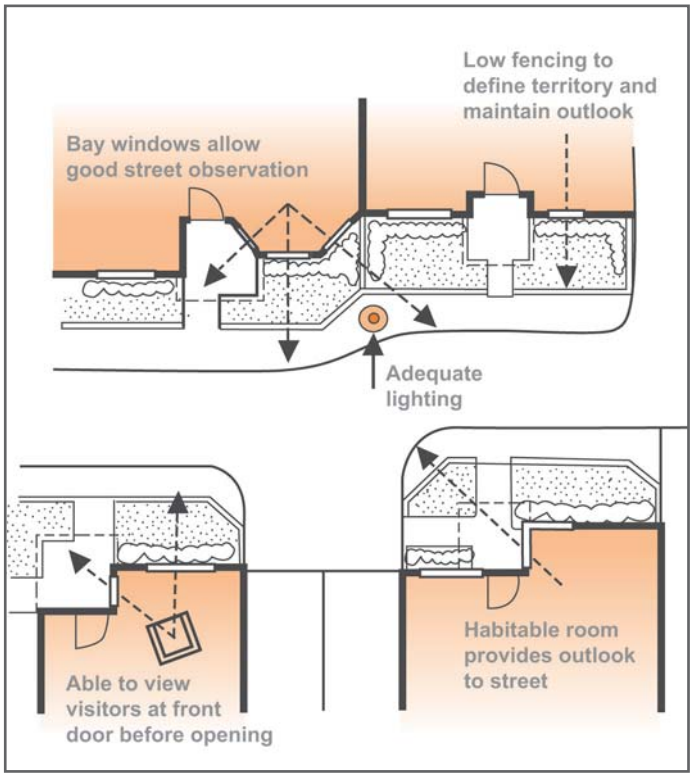

Figure 3.35 *Design for natural surveillance*
Source: AMCORD

P.4 Definition and transition of boundaries between public and private spaces is encouraged as a method of territorial reinforcement. Methods other than gates, fences and enclosures are encouraged. The installatoin of solid security shutters will not be supported.

P.5 The incorporation of crime prevention measures in the design of new buildings and spaces is not to detract from the quality of the streetscape. Subtle design techniques should be applied to blend into façades and places.

P.6 New development is to be designed to reduce the attractiveness of crime by minimising, removing or concealing crime opportunities. The design of development should increase the possibility of detection, challenge and apprehension of persons engaged in crime.

P.7 A site management plan and formal crime risk assessment (Safer by Design Evaluation) involving the NSW Police Service may be required for large developments, which in Council's opinion, would create a crime risk.

P.8 Public pedestrian areas within developments as well as communal accessways within multi-unit developments are to provide non-slip pavement surfaces.

P.9 The design of buildings adjoining laneways and through block connections should be designed to activate these spaces at ground level and provide casual surveillance from ground and upper levels.

P.10 Lighting of laneway spaces is encouraged.

Design Controls

Residential flat buildings and Mixed use development

C.1 Buildings should contain multiple stair/ lift cores which limit the number of dwellings with access from the circulation core.

C.2 Individual dwellings should be designed to overlook communal areas such as play areas, and gardens.

C.3 Site and building layout of developments should minimise the need for pedestrian pathways segregated from streets. Where such pathways are provided, casual surveillance should be encouraged, they should be well lit at night and be clear of potential hiding or entrapment spots.

C.4 Frontages of development should face other frontages rather than their backs or sides.

C.5 Where developments have a car park or laneway for access to a car park, building layouts should provide some windows, lighting or secondary access doors that address the car park.

C.6 Access from car parks to dwellings should be direct and safe for residents day and night.

C.7 Entrances to upper level residential apartments are to be separated from commercial / ground floor entrances to provide security and identifiable addresses.

Residential - single dwellings and dual occupancies

C.8 Dwellings should be oriented toward the street with entrances clearly visible both day and night.

C.9 Increase the level of casual surveillance of the street by positioning habitable rooms at the front of dwellings.

C.10 Avoid features, such as long blank walls which restrict opportunities for casual surveillance of street and dwellings.

C.11 Principal entries to dwellings should not be provided off rear lanes except where:
- the lane is well lit;
- there is some natural surveillance of the lane from adjoining dwellings;
- the lane provides access to other dwellings;
- the lane is not regularly used by service vehicles.

C.12 Roller shutters are not encouraged on window and door openings that have frontage to the street or are adjacent to public open space.

C.13 Security grilles, where used, should complement the architectural features and materials of the dwelling.

Business premises and Office premises

C.14 The site and building layout should ensure that entrances and activities are easily identifiable by prospective users.

C.15 Buildings and spaces should be designed to clearly delineate between public and private space to provide a clear sense of ownership and discourage illegitimate use.

C.16 Where developments have a car park or laneway for access to a car park, building layouts should provide some windows, lighting or secondary access doors that address the car park.

C.17 Public facilities such as toilets and parents rooms should be designed and placed to maximise opportunities for casual surveillance.

C.18 Services, such as Automatic Teller Machines (ATMs) and public telephones, should be places in highly visible locations and be accessible and well lit at night.

C.19 The use of security devices, such as roller shutters or grilles on shopfronts, should not compromise natural surveillance of streets and public places. Solid roller shutters will not be permitted as security devices on shop fronts (windows and doors).

C.20 Open grille security devices may be used on shop fronts if such devices are necessary but should be unobtrusive and sympathetic to the character of the building and the streetscape. Laminated security glass at ground floor level, if necessary, to restrict opportunities for window breakage and break and enter. Other types of shutters such as lattice grills will only be permitted as a security measure if it can be demonstrated that there is a security risk. Where this is the case, the shutter box should be located behind the existing fascia and not protrude onto the street, or be fixed internal to the façade.

C.21 For large scale retail and commercial development with a GFA of over 5,000m2, provide a 'safety by design' assessment in accordance with the CPTED principles from a qualified consultant.

Further Information

NSW Police Service 2001, *Safer by Design*

NSW Department of Urban Affairs and Planning 1979, Crime Prevention and the Assessment of Development Applications, *Guidelines under Section 79C of the Environmental Planning and Assessment Act, 1979.*

3.4.5 Housing Diversity and Choice

In order to provide equitable access to new housing, there is a need to provide a range of housing options in Parramatta because of changing lifestyle needs such as:

- the range of household types (single, couple, family, extended family etc),
- particular housing needs for certain groups within the community such as older people or people with a disability, and
- different income groups

Objectives

O.1 To ensure a range of housing options are available in terms of dwelling type and size, to maximise housing choice to meet the needs of diverse household types.

O.2 To maintain equitable access to new housing by cultural and socio-economic groups and to minimise the social impacts of gentrification of existing housing areas.

O.3 To promote the design of buildings that are adaptable and flexible in design to suit the changing lifecycle housing needs of residents over time.

Design Principles

P.1 The following mix is to be used as a guide for residential flat buildings, the residential component of mixed use developments:

- 3 bedroom 10% - 20%
- 2 bedroom 60% - 75%
- 1 bedroom 10% - 20%

This mix may be refined having regard to:

- the location of the development in relation to public transport, public facilities, employment areas, schools, universities and retail centres;
- population trends; and,
- whether the development is for the purpose of public housing or the applicant is a community housing or non-profit organisation.

Developments containing less than 10 dwellings may vary this mix providing a range of dwelling sizes are represented.

P.2 Adaptable housing complying with AS 4299 is to be provided in multi-dwelling housing, residential flat buildings, and the residential component of mixed use developments in accordance with the following:

Total no. of dwellings in development	No. of adaptable dwellings required
Less than 10	1
10-20	2
more than 20	10%

Additionally, all ground floor dwellings in buildings with no lift and all dwellings in buildings with lift access must be 'visitable' by people with a disability. This means that there must be a continuous accessible path of travel (AS 1428.1:2001) from the street and any visitor parking to and through the entrance door of affected dwellings.

3.5 Heritage

3.5.1. General

This section of the Plan contains the general principles and controls that apply to development on and in the vicinity of heritage items and heritage conservation areas identified in the Parramatta LEP 2011 and Parramatta City Centre LEP 2007. They include controls and guidelines for maintenance, alterations and additions, new development and archaeological issues. This section must be read in conjunction with other relevant controls of this Plan, particularly Part 4.

Each development proposal will have its own unique considerations, and the issues to be considered will vary depending on where the property is located and whether the proposal is for renovations and extensions to an existing building, a new building within a conservation area or development adjacent to a heritage item.

Further outline of the terms, responsibilities and procedures associated with heritage applications in the Parramatta LGA is provided in Appendix 6.

Objectives

O.1 Appropriate management of heritage in the Parramatta LGA.

O.2 Retention and reinforcement of the attributes that contribute to the heritage significance of items, areas and their settings.

O.3 Maintenance and improvement to residential amenity and open space areas.

O.4 Development that is compatible with the significance and character of the area.

Design Principles

Scale

The scale and bulk of any new work is the most important issue to get right. In the case of infill work in a conservation area, the scale of the new building needs to be similar to those surrounding it. In the case of renovations and extensions, the new work should not overwhelm the original building, and would almost certainly need to be no larger in size than the original building.

Siting

In the case of infill work in a conservation area, the new building needs to have a similar orientation on the block and similar setbacks as those around. In the case of renovations and extensions, new work is best located to the rear or possibly the side of the building in order to minimise changes to the appearance of the building from the street.

Architectural Form

The basic architectural form of any new work needs to respect that which exists. Issues to consider include the pitch and form of the roof, and the size, proportion and location of windows and doors.

Architectural Detailing

Applicants need to be aware of the particular era and architectural style of the building or buildings, and make sure that any proposed changes respect this. For example it is not appropriate to mix Victorian features with say California Bungalow and overuse of historical architectural details on new work should be avoided.

Materials and Finishes

New materials need not always match the existing exactly but need to be compatible, with consideration being given to the colour, texture, and type of materials and finishes.

Use

The best use for a building is usually the one for which it was built. Where this is not possible, a use which requires minimal alterations will be more compatible.

Original Fabric

It is important to minimise alterations to the original fabric. Where possible, it is preferable to repair rather than replace individual elements such as windows and doors.

The Aging Process

The ‘patina’ of age on a building adds much to its character and significance. A worn step, for example, demonstrates the many years of feet crossing a threshold. Such features add to the uniqueness and character of the place and should be retained.

Cutilage

The majority of built heritage items in Parramatta are listed with their curtilage contained within the lot boundary containing the item. In some cases there is a reduced curtilage where the significance of the item and its interpretation is not dependant on having a large curtilage extending to the lot boundary. In such cases it is necessary to identify a curtilage that enables the heritage significance

of the item to be retained. It is also possible that there will be an expanded curtilage for some items where the curtilage is greater than the property boundary. An expanded curtilage may be required to protect the landscape setting or visual catchment of an item. For example, the significance of some properties includes a visual link between the property itself and a river or topographical feature.

Siting

An infill building adjacent to a heritage item should not precisely imitate its neighbour but use recognisable tools such as massing, scale, setback and orientation, details and materials, roof forms and coursing lines to complement adjacent heritage items.

Design Controls

Landform / Natural characteristics

C.1 Maintain the natural landform and character of the area: avoid any cut and fill to land when constructing new buildings and landscaping grounds.

Subdivision Pattern

C.2 Maintain the historical pattern of subdivision.

Development near Heritage Items

C.3 Where development is proposed that adjoins a heritage item identified in the Parramatta LEP 2011 or Parramatta City Centre LEP 2007, the building height and setbacks must have regard to and respect the value of that heritage item and its setting.

Existing Buildings

C.4 Retain all buildings and structures that explain the history of the area and contribute to its significance.

C.5 Avoid re-roofing the main body of the building except to match the original materials or except where re-roofed in corrugated iron.

Alterations and Additions

C.6 Before any changes are made to a building, consideration should be given to whether making it bigger will ruin its appearance. Additions to small buildings can easily overwhelm them and use up garden space. Garden space is needed for private outdoor living areas. It also keeps the old pattern of development and the setting for each house.

C.7 Any alterations and additions must be consistent with the scale, shape and materials of the existing building so as not to detract from the visual importance of existing historic buildings in the area or the area's visual consistency and amenity. Materials should be the same as the existing house, or otherwise lighter weight materials such as painted timber, fibro, iron or imitation timber cladding.

C.8 Modest additions work best. They can be as wings or pavilions to the existing building.

C.9 All additions must be at the rear of the property, NOT at the front. Additions should be attached to the original part of the building by way of linked pavilions or skillions at the back of the house.

C.10 Unless otherwise specified in Part 4 of this DCP, additions should not be higher than the ridgeline of the existing building and the existing roof form over the main body of the building should be retained.

New Buildings

C.11 New buildings will need to respect and acknowledge the existing historic townscape of Parramatta so that new and old can benefit from each other.

C.12 Applicants need to concentrate on getting the height, siting, shape and materials right so that new buildings will blend with old areas without imitation of period details, including consideration of:

- the height of the new building compared to those nearby – the new building should be no higher than the majority of the buildings in its vicinity
- the setback of the new building from the street and from its side and rear boundaries and as compared to its neighbours on either side
- whether the building has a similar shape – in a street of hipped or gable roof, in a street of commercial buildings, a parapet roof might help the new building fit better with its neighbours
- whether the building materials of the new building complement those nearby - most houses in Parramatta are of brick or weatherboard so bagged and painted brick walls might not be suitable for new buildings nearby.

C.13 In some areas the pattern of development is an important part of the history and heritage significance of the place. New development which would destroy that pattern of development is unlikely to be approved, even if it is low and not visible from the street.

C.14 In those areas where the pattern of development is not part of the heritage significance of the place, new buildings at the rear of old buildings might be approved if they can be designed and sited successfully so as not to disrupt the streetscape, affect the setting of the heritage item or destroy the amenity of the area.

C.15 The important matters to get right are:

- repeat the same size of driveways and pattern of openings
- avoid large paved areas
- keep new buildings low so they can be screened by the existing building, supplemented by existing or new trees
- plant adjacent to driveways to help screen views between buildings
- maximise distance between old and new buildings
- site new building so as to minimise reducing sunlight and views enjoyed by neighbours
- avoid new large buildings that cannot be screened and which would overwhelm old buildings and detract from their setting.

C.16 Buildings with wall heights below 9m can be screened by trees and this helps new and old blend better together.

C.17 New buildings need to conform to existing subdivision patterns.

C.18 Buildings which cut across lots or cover a large amalgamated lot will be at odds with the regular pattern of development in old areas and will be very obvious from the street. They are most likely to be refused by Council.

C.19 A new building near an important heritage item, such as a church or hall (which might also be a local landmark) needs to be carefully designed. It must not try to copy the heritage item or compete with it for attention. It is best if the new building fits in with the character of the surrounding neighbourhood, leaving the heritage item to stand alone.

C.20 A new building in a street of old buildings needs to follow the same front and side setbacks as the old buildings. It should be of a similar scale and shape, and be built of materials which fit in with those already in the street.

C.21 Large areas of glass windows or glazed walls are not appropriate in heritage conservation areas.

Garages, carports and other ancillary buildings

Unless otherwise stated in Part 4 of this DCP, all new carports, garages and other ancillary buildings (such as sheds) should complement heritage listed buildings and conservation areas by complying with the following controls:

C.22 All new ancillary buildings including garages and carports must be detached from the main building and located in the rear yard so as not to disturb the streetscape or compete with the appearance of the house. Where it is not possible to locate the building at the rear of the property, they should be located at the side of the house, but set back at least 1m from the front wall of the house (not the verandah) so they do not become a feature in the streetscape. Where there is no room to build a garage or carport behind or beside the house, a simple paved standing area at the front is better than a carport or garage.

C.23 Carports and garages should be designed as simple, useful structures to shelter the car. It is important to reduce the scale of the roof so that the garage does not compete with the house. Decorative detail should be avoided.

C.24 Ancillary buildings including driveways and carports should be designed as secondary utility buildings with no unnecessary architectural details such as period decorative features.

C.25 Ancillary buildings should be constructed of lightweight materials such as timber or metal.

Driveways

C.26 Driveways should be constructed of a non-obtrusive material such as concrete, bitumen, gravel, or common or dark bricks.

C.27 Two wheel tracks with planting (e.g. lawn) in between are preferable to a full-width driveway.

C.28 Driveways are to be no greater than the width needed for a single vehicle and any necessary turning space.

Fences

C.29 Keep all existing fences that are contemporary with the building and which contribute to an understanding of the history of the development of the area:

- An early fence should be repaired and kept if possible.
- If the fence is beyond repair, it should be reproduced in its original form with new materials.

C.30 For front boundaries where there is no existing front fence or the existing fence is not contemporary with the house, a new low fence should be constructed:

- materials used should be similar to those of the building or those for which there is historical evidence
- fences on nearby similar buildings or old neighbourhood photographs will indicate how an early fence would have looked; the right period style of fence to suit the age, materials and social standing of house may also be chosen by seeking help from books in the local library, or from Council's Heritage Adviser.

NOTE: Some parts of the Blaxcell Estate Heritage Conservation Area should remain fenceless. See Section 4.4.5.1 for details.

C.31 Keep street amenity by continued use of low front fences which allow each garden to be viewed from the street. Fences greater than 1.2 metres in height should be avoided.

C.32 Encourage retention and use of timber paling fences to side and back boundaries and replacement, where necessary, with fences of similar height and materials. Side and back boundary fences of modern metal clad fencing systems are to be avoided as they are not appropriate to heritage items or areas.

C.33 Fence openings for cars must not exceed 3 metres in width and not more than a single opening may be present per allotment.

Maintenance (General)

C.34 Regular maintenance of heritage buildings is essential for their conservation and protection. Buildings should be kept structurally sound, habitable and weather proofed.

Maintenance (Roof)

Roofs protect buildings from the weather. They must be kept waterproof and in good repair. The shape and the cladding of the roof are an important part of its appearance.

C.35 The original shape of the roof should not be changed.

C.36 The original roof cladding of a building (slate, tiles or corrugated iron) should not be changed if it is in good repair.

C.37 If it is necessary to replace the whole roof and the original cladding material is too expensive, a new roof cladding of corrugated iron can be used.

C.38 Any necessary repairs should be matched with the original cladding - tiles with tiles, iron with iron, slate with slate. If an old roof is of an expensive material, such as slate or flat tiles, repairs should be made so that the original materials are put on the visible parts of the roof and corrugated iron used where the roof cannot be seen form the street.

C.39 If a chimney leaks, the flashings should be mended. The chimney should not be removed as it is part of the charm of a house and helps maintain its resale value.

C.40 Gutters should be kept clear of leaves and rubbish and in good repair as they keep a house dry. Some older houses need specially shaped gutters as these are important to their appearance.

Maintenance (Walls)

C.41 Timber walls are best maintained with regular painting. Council's Heritage Adviser will be able to help in choosing a colour scheme for a house appropriate to its age. There are also some books about heritage colour schemes in the Parramatta Library.

C.42 Unpainted brick or stone should not be painted. Painting devalues a property because it cannot easily be removed and, once painted, walls will need to be painted regularly.

C.43 Sandblasting to remove paint from brick or stone is extremely dangerous for old buildings: it removes both paint and the outer skin of the brick, exposing it to weathering and changing its appearance. Only careful chemical treatment should be used to remove paint. This can be expensive and it is sometimes preferable to keep painting the walls.

Maintenance (Doors and Windows)

C.44 Original doors and windows should be kept. They are valuable and an important part of the particular appearance of a house or shop. Painting is the best way to maintain and protect doors and windows and will save money in the long run.

C.45 If the original doors or windows have been lost, they can be replaced with the correct size and type for the age and style of the house of shop. Old houses or shops nearby with all their original features will help to determine the appropriate size and type of doors or windows.

Further Information Resources

Design in context: Guidelines for Infill Development in the Historic Environment; NSW Heritage Office/Royal Australian Institute of Architects NSW Chapter 2005.

Heritage Curtilages (Heritage Manual supplementary volume), Heritage Office, Department of Urban Affairs and Planning, 1996.

The NSW Heritage Manual, produced by the NSW Heritage Office, sets out in detail the procedures that should be followed in assessing and managing heritage. In particular, the publication 'Statements of Heritage Impact' issued by the Heritage Office of NSW needs to be referred to when preparing a Heritage Impact Statement.

3.5.2 Archaeology

Parramatta has rich archaeological resources, which provide the opportunity to gather information about the past that is not available from other sources. This Section clarifies how these archaeological resources are to be managed.

The most important thing to remember about archaeology is that notwithstanding any requirements that might be set out by Council, there are "catch-all" legal obligations set out in State legislation in the form of the Heritage Act 1977. In this regard you should check with Council whether the site has been identified as having any archaeological significance. A "relic" is defined as any object, or deposit relating to settlement of NSW, not being an aboriginal settlement, which is more than fifty years old. There is also an obligation under the Heritage Act to stop work and contact the Heritage Office if relics are unexpectedly disturbed or uncovered. Certain procedures then need to be followed which are set out in the Parramatta LEP 2011, Parramatta City Centre LEP 2007, and the Heritage Act, 1997, including possible requirement for approval of an excavation permit before any other development proceeds.

Whilst the requirements of the Heritage Act are therefore very broad ranging, it needs to be remembered that there are no obligations on an owner or builder to do anything prior to commencing work unless the site has been identified as containing underground relics, or being likely to. In this regard, the owner of a heritage listed building, you should check with Council whether the site has been nominated as having any archaeological significance. This will apply to relatively few sites. Certain procedures then need to be followed which are set out in the Parramatta LEP 2011, Parramatta City Centre LEP 2007 and also in the NSW Heritage Act 1977. A Council officer will provide further guidance in these situations.

Special circumstances apply in the areas covered by the detail in the Parramatta Historical Archaeological Landscape Management Study (PHALMS). The study also sets out a detailed policy for managing those resources. A copy is held by Council's Development Services Unit on computer and in hard copy for consultation.

For all Development Applications for sites included in the PHALMS area, which involve excavation, Council requires that applicants refer in their Statement of Environmental Effects to the Recommended Management of the site as set out in the Parramatta Historical Archaeological Landscape Management Study. If action is recommended regarding known or potential archaeological resources on the site, applicants shall follow the procedures set out in the Study.

Objective

O.1 To provide appropriate conservation and management of the archaeological resources to the Parramatta LGA.

Design Principles

P.1 In the case of any development where excavation is proposed, the Applicant must refer in their Statement of Environmental Effects (SEE) to the Parramatta Historical Archaeological Landscape Management Study (PHALMS).

P.2 The SEE must refer to the management recommendations set out in the PHALMS in relation to the subject site, and must show how the applicant intends to comply with those recommendations. If PHALMS recommends further assessment and/or documentation, then such information shall be included in the SEE.

P.3 If necessary, the applicant shall, prior to any excavation work commencing, make an application to the NSW Heritage Office for an application permit under the terms of the Heritage Act 1977. The applicant shall allow sufficient time and resources for the determination of the application and for completion of the archaeological programme required.

P.4 At all times when excavation is being carried out, the applicant (or any persons acting for the applicant) should aware of any excavation permit requirements including the need for monitoring, stopping work and reporting any relics found to the NSW Heritage Office.

Further Information

The NSW Heritage Manual, produced by the NSW Heritage Office, sets out in detail the procedures that should be followed in assessing and managing heritage. In particular, the publication "Statements of Heritage Impact' issued by the Heritage Office of NSW needs to be referred to when preparing a Heritage Impact Statement.

The Parramatta Historical Archaeological Landscape Management Study will need to be referred to in some cases. Details are provided later in this plan.

3.5.3 Aboriginal Cultural Heritage

Aboriginal heritage includes places and items that are important to the local Aboriginal community or to Aboriginal people of NSW. These are places or objects that people have a connection to, both physically and spiritually and can include natural features such as creeks or mountains, ceremonial or story places or areas of more contemporary cultural significance such as Aboriginal missions or post contact sites. Parramatta City Council has a database of known Aboriginal archaeological and historic/cultural sites and information about the location of land that could contain Aboriginal sites.

Aboriginal heritage is protected in Parramatta under the Parramatta LEP 2011 and Parramatta City Centre LEP 2007. Planning controls of these LEPs require the Council to consider the impact of development on known or potential Aboriginal archaeological sites or sites of cultural or historical significance to Aboriginal people. When development applications are lodged for such sites, the Council must also consider an Aboriginal Heritage Assessment along with advice from the National Parks and Wildlife Service and local Aboriginal communities.

Objective

O.1 To ensure that appropriate consideration is given to the impact of development on known or potential Aboriginal archaeological sites or sites of cultural or historical significance to Aboriginal people in the Parramatta LGA.

Design Principles

P.1 Before lodging a development application for development that may have an impact on known or potential Aboriginal sites, Council's information on known Aboriginal sites and potential heritage sensitivity should be consulted. Refer to Appendix 11 for the Aboriginal Sensitivity map.

P.2 For properties identified with No Sensitivity no Aboriginal Heritage Assessment is required.

P.3 For properties identified with Low Sensitivity no Aboriginal Heritage Assessment is required unless land is within 100m of a creek or river foreshore and contains uncleared bushland, sandstone outcrops or exposed sandstone platforms.

P.4 For properties identified as Medium Sensitivity or High Sensitivity an Aboriginal Heritage Assessment is required.

P.5 For properties within 50m of a known Aboriginal site the National Parks and Wildlife Service Site Register should be consulted to determine whether the Aboriginal site is located on the property. If the known Aboriginal site is located on the property, the development becomes Integrated Development.

P.6 Properties within an area of Aboriginal social/historical association will require an Aboriginal Heritage Assessment that investigates the impact of a development proposal in relation to the social/historical association.

Further Information

Council's Information Booklet, *Protection of Aboriginal Heritage in Parramatta, June 2004*

3.6 Movement and Circulation

3.6.1 Sustainable Transport

Parramatta City Council has set a strategic goal of increasing sustainable transport in the local area and for the journey to work. Sustainable transport includes walking, cycling, the use of public transport and car sharing initiatives. Sustainable transport aims to reduce car trips and hence decrease congestion, save time and money and reduce the environmental impact of transport. The Parramatta LGA is well connected by train, bus, road and cycle networks. New developments can provide opportunities to support and encourage the use of sustainable transport by providing car share parking, developing travel plans, providing bicycle parking and end of trip facilities and other initiatives.

Carshare

Car sharing is a self service car rental scheme for short periods of time, typically on an hourly basis. Car sharing is particularly useful in discouraging personal car ownership and use while still offering the benefits of a car for occasional essential car trips. Car sharing works best in locations where there is a good level of walking, cycling and public transport provision.

Objective

O.1 To support the reduction of car trips and encourage the use of sustainable transport.

Design Controls

C.1 1 carshare parking space is to be provided for any residential development containing more than 50 residential units and is within a 800m radial catchment of a railway station or 400m radial catchment of a bus stop with a service frequency of an average of 15 minutes or less during the morning peak (7 am - 9 am) in either direction.

C.2 1 carshare parking space is to be provided for any business development with a floor space of 5,000 square metres or above and is within a 800m radial catchment of a railway station or 400m radial catchment of a bus stop with a service frequency of an average of 15 minutes or less during the morning peak (7 am - 9 am) in either direction.

C.3 Carshare parking spaces must be publicly accessible at all times, adequately lit and sign posted and located off street.

C.4 1 carshare space can be provided in lieu of 3 car parking spaces.

C.5 Carshare spaces must comply with the design principles and standards in Section 3.6.2 of this DCP.

C.6 Written evidence must be provided with the development application demonstrating that offers of a car space to carshare providers have been made together with the outcome of the offers or a letter of commitment to the service.

Travel Plan

A Travel Plan is a package of measures designed to reduce car trips and encourage the use of sustainable transport. Where a Travel Plan is required as a condition of development, it must be submitted to the Consent Authority prior to the release of the Occupation Certificate. If the future occupant(s) is known then the Travel Plan must be prepared in co-operation with them. The condition of consent remains for the life of the development.

Objective

O.1 To reduce car trips and encourage the use of sustainable transport.

Design Principles

P.1 Development proposals that meet the following criteria must prepare a Travel Plan:
- 5000 sqm of gross floor space or 50 employees; and
- within a 800m radial catchment of a railway station or 400m radial catchment of a bus stop with a service frequency of an average of 15 minutes or less during the morning peak hour (7 am - 9 am) in either direction.

P.2 A Travel Plan must include:

1. Targets – This typically includes the reduction of single occupant car trips to the site for the journey to work and the reduction of business travel particularly single occupant car trips.
2. Travel data – An initial estimate of the number of trips to the site by mode is required. Travel Plans require an annual travel survey to estimate the change in travel behaviour to and from the site and a review of the measures.
3. Measures – a list of specific tools or actions to achieve the target.

NOTE: A copy of the Travel Plan must be available to Council on request.

Further Information

Parramatta City Council's website: www.parracity.nsw.gov.au

Travel Smart website: www.travelsmart.gov.au

3.6.2 Parking and Vehicular Access

Objectives

O.1 To ensure that the location and design of driveways, parking spaces and other areas used for the movement of motor vehicles are efficient, safe, convenient and are integrated into the design of the development to minimise their visual impact.

O.2 To ensure that adequate off-street parking is provided to serve the needs of development.

Design Principles

P.1 Vehicle access points and parking areas are to be:

- easily accessible and recognisable to motorists
- undisruptive to pedestrian flow and safety
- located to minimise traffic hazards and the potential for vehicles to queue on public roads
- located to minimise the loss of on street car parking, and to minimise the number of access points.

P.2 Car parking and service/delivery areas are to be located so that they do not visually dominate either the development or the public domain surrounding the development.

P.3 Parking and service/delivery areas and vehicular access points are to be located to minimise conflict between pedestrians and vehicles and to minimise impact on residential amenity.

P.4 Development on arterial roads is to seek access via a secondary street where possible.

P.5 Where properties have access to a rear lane or secondary street frontage (including desired lanes) parking and servicing access should be provided from the secondary street/lane.

P.6 On site parking is to be provided at a rate sufficient for residents, employees, visitors and service vehicles as relevant to the development.

P.7 Car parking spaces are to be designed to ensure ease of access, egress and manoeuvring on-site. The standards of AS 2890 are to be complied with.

P.8 Driveways are to be designed to avoid a long and straight appearance by using landscaping and variations in alignment.

P.9 Car parking areas and vehicle accessways are to be landscaped to integrate sympathetically with the development and the landscape character of the locality. Large car parking areas are to be broken up using landscaping. The design and layout of carparking areas must provide for suitable and safe pedestrian movements, including separate pedestrian access to buildings which are clearly defined and easily negotiated.

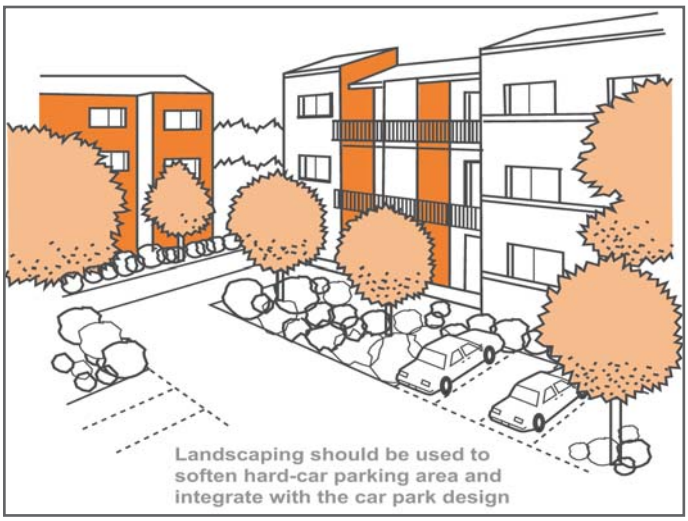

Figure 3.36 Integrate landscaping for car parking areas

P.10 The area between property boundaries and driveways, access ways and parking spaces is to be of sufficient width to enable landscaping and screen planting.

P.11 Car parking at ground level is not to encroach within building setbacks.

P.12 Reasonable provision is to be made for the parking needs of people with disabilities.

P.13 Basement car parking is to be:

- adequately ventilated
- designed for safe and convenient pedestrian movement and to include separate pedestrian access points to the building that are clearly defined and easily negotiated
- predominantly located within the building footprint
- located predominantly below existing ground level. Where slope conditions mean that this is unachievable, the basement projection of the floor level of the storey immediately above is less than 1m above ground level (existing).

P.14 Basement car parks and manoeuvring must comply with AS 2890.

P.15 Vehicular ramps for all development types are to be designed with sufficient width for safe and efficient ingress and egress.

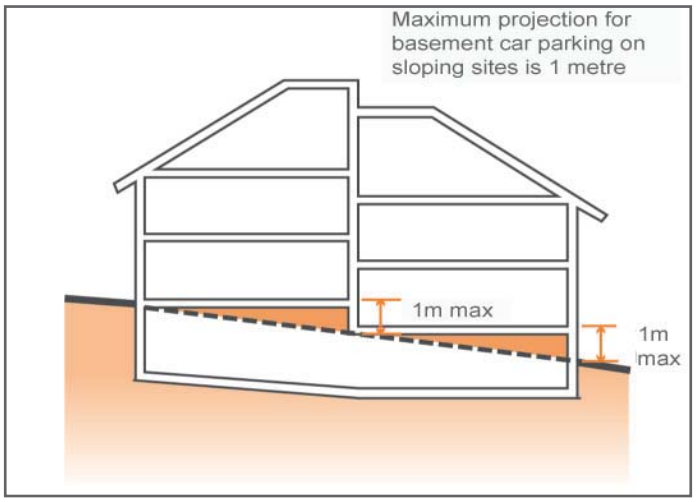

Figure 3.37 Maximum basement projection on sloping sites

P.16 Car parking areas within multi dwelling developments and residential flat buildings must be designed to minimise headlight glare onto the windows of dwellings within the site or neighbouring properties.

P.17 Visitor parking is to be marked or signposted to enable easy recognition.

P.18 The design and layout of carparking areas must provide for suitable and safe pedestrian movements, including separate pedestrian access to buildings which are clearly defined and easily negotiated.

P.19 Car parking is not to be used as storage space.

P.20 Development must provide safe vehicle access and adequate sight distances. Development on arterial roads or development that is not a dwelling house must make provision for vehicles to leave the site in a forward direction.

NOTE: Refer to Section 3.3.7 Waste Management should a private waste collection vehicle be required to enter the property.

Design Controls

Bicycle Parking

C.1 Residential flat buildings, business premises, office premises, retail and industrial developments are required to provide adequate, safe and secure bicycle parking.

C.2 The rate for business premises, office premises, retail and industrial development is 1 bicycle space per 200 sqm of floor space.

C.3 The rate for residential flat buildings is 1 bicycle space per 2 dwellings.

C.4 The rate for boarding houses is 1 bicycle space per 5 boarding rooms.

C.5 Bicycle parking is to be provided in the form of Class 2 compounds, as specified in AS 2890.3 – Bicycle Parking Facilities. These facilities may be located in storage areas if good access is provided.

C.6 All bicycle parking should be located in a safe and secure location that is under cover and convenient for users.

C.7 Trip end facilities including showers and lockers must be provided to adequately service the number of bicycle parking spaces required in business premises, office premises, retail and industrial development.

C.8 Bicycle parking in the public domain must be located as close as possible to the main entrance of the building at ground level.

Each on site car parking space must have the following dimensions:

C.9 Enclosed garage: 3.0 metres width x 5.4 metres length

C.10 Disabled parking space must be in accordance with AS 2890.6 - 2009 Parking Facilities Off Street Parking for People with Disabilities

C.11 Clearance above the general parking surface must be in accordance with AS 2890

C.12 Unenclosed parking spaces must be in accordance with AS 2890

Car Parking for People with a Disability

C.13 The number of accessible carparking spaces to be provided as prescribed in Table D3.5 of the Building Code of Australia.

Dwelling Houses and Dual Occupancies

C.14 Garages should be a maximum of 6.3 metres wide, or 50% of the width of the street elevation of the building, whichever is the lesser.

C.15 At grade garages and carports are to be located a minimum of 300mm behind the front building line, or recessed behind the second storey front wall.

C.16 Carports and garages should be located at the rear of the property where this is the prevailing pattern of development in the street.

C.17 Where slope conditions require a basement, in such cases the area of the basement should not significantly exceed the area required to meet the carparking requirements for the development. Additional basement area to that required to satisfy parking requirements may be included as floorspace area when calculating floorspace ratio.

Multi Dwelling Housing

C.18 For townhouses and villas, a maximum of one kerb crossing, being a minimum of 3.5 metres is permissible per two dwellings, or alternately two crossings every 18 metres.

C.19 For attached dwellings, all car parking is to be located at the rear of the site and accessed from a rear lane.

Residential flat buildings or the residential component of Mixed Use Development (not within 400 metres walking distance of a transitway bus stop with a service frequency of an average of 10 minutes or less during the morning peak hour (7 am - 9 am) in either direction, or of a railway station)

C.20 Carparking spaces are to be located in a basement, although at grade car parking is permitted from the lane on sites with frontage to a main street and a lane.

Residential flat buildings, Multi-dwelling housing or the residential component of Mixed Use Development (within 400 metres walking distance of a transitway bus stop with a service frequency of an average of 10 minutes or less during the morning peak hour (7 am - 9 am) in either direction, or of a railway station)

C.21 Carparking spaces are to be located in a basement.

Storage Area for multi-dwelling housing development

C.22 All carparks for multi-dwelling residential developments are to provide a secure storage space with a minimum size of 10 cubic metres per dwelling.

Mixed Use Development

C.23 Vehicular access is not to be provided along the boundary adjacent to residential uses.

C.24 Loading/manoeuvring areas are to be located within buildings or screened from adjacent residential uses.

C.25 Residential and non-residential car parking spaces are to be physically separated.

Industrial

C.26 Loading docks are to be designed to allow heavy vehicles to enter and leave the site in a forward direction, without interfering with visitor and employee parking.

C.27 A traffic management plan is to be prepared detailing all transport options for the development, including type of transport used, size of trucks and frequency.

C.28 Adequate and suitable on-site receiving areas and parking for trucks and large vehicles are to be provided, and any queuing or off-site parking of such vehicles is to be kept to a minimum.

C.29 Kerbs, gutters, footpaths, walkways and driveways are to be constructed to resist damage by large vehicles or frequent use.

Business and Retail Premises

C.30 Business and retail premises may include any on-street unrestricted or time restricted parking on the frontage of the site in the parking calculations if supported by a traffic and parking survey. This excludes loading requirements for vehicle sales or hire premises.

Provisions on Splay Corners

C.31 Development on corner sites may be required to accommodate a splay corner to facilitate improved traffic conditions. This matter should be identified at the initial design stage in consultation with Council's development assessment officers.

Car Parking Rates

C.32 The required number of car parking spaces are provided in Table A and Table B below. Note: These tables do not apply to the Parramatta City Centre, which has Access and Parking Provisions in Section 4.3.3.5 of this DCP.

C.33 All numbers are to be rounded up when calculating the parking requirements in Table A and Table B.

C.34 If a particular land use is not addressed in Table A, where appropriate one of the following shall be conducted:
- Car parking rates calculated based on the Roads and Traffic Authority for Traffic Generating Development, or
- A traffic and parking survey considering a similar land use in a similar location.

C.35 If a particular land use is not addressed in Table B, the provisions in Table A apply.

Table A - Minimum car parking rates

Type of building	Minimum number of parking spaces required
Dwelling houses and Dual occupancies	1 space for dwellings less than or equal to 125 m^2 2 spaces for dwellings equal to or greater than or 125 m^2
Secondary dwellings	No additional parking is required for a secondary dwelling

Residential flat buildings, Multi dwelling housing or the residential component of Mixed Use development (not within 400 metres walking distance of a transitway bus stop with a service frequency of an average of 10 minutes or less during the morning peak hour (7am-9am) in either direction, or of a railway station).	0.6 spaces per studio apartment 1 space per 1 bedroom unit 1.25 spaces per 2 bedroom unit 1.5 spaces per 3 bedroom unit 2 spaces per 4 bedroom unit Plus 0.25 space per dwelling for visitor parking A car wash bay which may also be a visitor space
Residential flat buildings, Multi dwelling housing or the residential component of Mixed Use development (within 400 metres walking distance of a transitway bus stop with a service frequency of an average of 10 minutes or less during the morning peak hour (7am-9am) in either direction, or of a railway station).	1 space per 1 or 2 bedroom unit 1.2 spaces per 3 bedroom unit 2 spaces per 4 bedroom unit Plus 0.25 space per dwelling for visitor parking A car wash bay which may also be a visitor space
Business premises and Office premises	1 space per 50 m^2 of gross floor area plus 1 loading bay per 400 m^2 of gross floor area
Industrial	1 space per 70 m^2 of gross floor area plus 1 loading bay per 800 m^2 of gross floor area
Retail premises For restaurants: The first 100 m^2 of floor space	1 space per 30 m^2 of gross floor area 1 loading bay per 400 m^2 of gross floor area 1 space per 30 m^2 of gross floor area Available on-street parking cannot be included in the calculation (Section 3.6.2 C.30 'Business and Retail Premises' does not apply to the first 100 m^2 of floor space)
Additional floor space over the first 100 m^2	Whichever is greater - 15 spaces per 100 m^2 or 1 space per 3 seats
Child care centres	1 space for every 4 children in attendances
Places of public worship	Refer to Section 5.3
Boarding houses	1 space per 10 boarding rooms; plus 1 space per resident manager / caretaker (where applicable); 1 space for any vehicle operated by the facility; plus 1 motorcycle space per 5 boarding rooms

NOTE: Car parking spaces provided for use in connection with the use of function areas in hotels are to be available only to patrons while using the function facilities and must not be used for public car parking.

Table B - Car parking rates for the Granville and Harris Park Town Centres

Type of building	Minimum number of parking spaces required
Business premises and Retail premises	Minimum of 1 space per 60 square metres of GFA and a maximum of 1 space per 30 square metres of GFA. Where there is a combination of land uses, a maximum of 40% of resident visitor parking can be used in the calculations for retail parking provided that these areas are shared

Office premises	Minimum of 1 space per 70 square metres of GFA and maximum of 1 space per 50 square metres of GFA

NOTE: The controls in Table B apply to the Granville Town Centre as mapped on page 118 of this DCP. The controls in Table B apply to the Harris Park Town Centre where zoned B1 Neighbourhood Centre on Kendall, Ada, Wigram, Marion and Crown Streets and Station Street East, Harris Park.

Further Information

Advisory Notes on Access to Premises (Human Rights and Equal Opportunity Commission 1998).

AS 2890 - Off Street parking, Commercial Vehicle Facilities, Bicycle Parking Facilities, On-street parking

Building Code of Australia.

Disability Discrimination Act, 1992.

Roads and Traffic Authority, *Guide to Traffic Generating Development.*

Standards Australia website, *www.standards.org.au*

Transport Standards (Human Rights and Equal Opportunity Commission 2002).

WSROC 1998 *Access for People with Mobility Disabilities Manual of Best Practice.*

3.6.3 Accessibility and Connectivity

In some areas of Parramatta topography and/or the street pattern limit the ability of pedestrians to walk to neighbourhood facilities, raising the dependence on cars, lowering opportunities for social interaction and reducing the safety and vitality of the public realm. New development, particularly on large sites, can provide opportunities for the creation of new pedestrian links through sites to improve the accessibility and connectivity within neighbourhoods.

Objectives

O.1 To improve pedestrian access and connectivity between housing, open space networks, community facilities, public transport, local activity centres and schools.

O.2 To encourage pedestrian through-site links that are designed to promote safety and amenity.

Design Principles

P.1 Pedestrian links should be provided where possible through development sites to improve connectivity between housing, open space networks, community facilities, public transport, local activity centres and schools.

P.2 Through-site links should be arranged on the site to enable casual surveillance from buildings on the site and from the street or public domain.

P.3 Through-site links should be integrated with the circulation system of the site so that they perform a role for circulation within as well as through the site.

P.4 Through-site links are to be landscaped and appropriate lighting levels provided and maintained.

P.5 Public, communal and private areas are to be clearly delineated within the site.

P.6 Pedestrian and cycle links should be provided on sites adjacent to waterways to improve accessibility to these natural systems.

P.7 Existing through-site pedestrian links are to be retained by all types of development, except where alternative access can be provided at Council's satisfaction.

Design Control

C.1 Pedestrian through-site links are to have a minimum width of 3 metres and are to be constructed to an appropriate standard, using materials and finishes acceptable to Council.

3.7 Residential Subdivision

3.7.1 General

Objectives

O.1 To ensure that subdivision of land for residential development has regard to site opportunities and constraints.

O.2 To ensure that subdivision respects the predominant subdivision pattern of the locality.

O.3 To ensure that allotments of sufficient size are created to facilitate development that meets the requirements of this plan.

Design Principles

P.1 Subdivision is to be designed to:

- Take account of topography and slope and minimise the need for cut and fill associated with dwelling and driveway construction,
- Protect natural and cultural/heritage features,
- Retain significant trees and vegetation communities,
- Have regard to views to and from the site.

P.2 Subject to minimum lot size requirements, subdivision is to reflect and reinforce the established subdivision pattern of the locality.

P.3 Subdivision of large sites should allow for a range of lot sizes to suit a mix of housing types and sizes.

P.4 Lots are to be oriented to maximise solar access for future dwellings.

P.5 Lot size and dimensions are to provide for:

- A suitable building platform
- Outdoor open space and service space
- Landscaped area
- Vehicular access that connects to a public road
- On-site parking

P.6 Where appropriate, subdivisions are to provide connections for public access, both vehicular and pedestrian within and beyond the site and are to facilitate open space linkages.

P.7 Adequate provision is to be made within new lots for infrastructure services.

P.8 Subdivision of land in close proximity to areas likely to be affected by bushfire is to be carried out in accordance with the NSW Rural Fire Services and Department of Infrastructure, Planning and Natural Resources, Planning for Bushfire Protection 2001.

P.9 Access corridors are to:

- Provide safe and practical vehicular access to a formed public road
- Allow vehicles to leave the driveway in a forward direction
- Make provision for vehicles to pass where necessary
- Include appropriate landscaping to maintain the amenity of the area
- Be accessible for service providers and emergency services

Design Controls

Dwelling Houses

C.1 Lots with direct road frontage require: A minimum site area of 550m^2 and a minimum frontage of 15m where it is proposed to erect a dwelling house on the allotment.

C.2 Battleaxe lots require: A minimum site area of 670m^2 (not including the access corridor) and a minimum access corridor width of 3.2m where it is proposed to erect a dwelling house.

NOTE: Multiple subdivision of battleaxe lots is strongly discouraged.

Dual Occupancy

C.3 A minimum site area of 600m^2 and a minimum frontage of 15m (or 12m for 2 street or street/lane frontages) is required where it is proposed to erect a dual occupancy on the allotment.

C.4 For the subdivision of dual occupancies, equal or similar proportions in site area are to be provided for each dual occupancy lot and a minimum frontage of 7.5m provided for each dwelling resulting from the subdivision of the dual occupancy.

Secondary Dwellings

C.5 No form of subdivision of a secondary dwelling from the principal dwelling is permitted.

3.7.2 Site Consolidation and Development on Isolated Sites

Objectives

O.1 To encourage site consolidation of allotments for multi-unit housing and residential flat developments in order to promote the efficient use of land and to avoid the creation of isolated sites.

O.2 To encourage the development of existing isolated sites in a manner that responds to the site's context and characteristics and that maintains a satisfactory level of amenity.

Design Principles

P.1 Development for the purpose of residential flat buildings, multi dwelling housing in the form of town houses, villas or the like is not to result in the creation of an isolated site that could not be developed in compliance with the relevant planning controls, including the Parramatta LEP 2011, Parramatta City Centre LEP 2007 and this DCP.

Council will require appropriate documentary evidence to demonstrate that a genuine and reasonable attempt has been made to purchase an isolated site based on a fair market value. At least one recent independent valuation is to be submitted as part of that evidence and is to account for reasonable expenses likely to be incurred by the owner of the isolated site in the sale of the property.

P.2 Where amalgamation of the isolated site is not feasible, applicants will be required to demonstrate that an orderly and economic use and development of the separate sites can be achieved.

Applicants will be required to detail an envelope for the isolated site, indicating height, setbacks, resultant site coverage (building and basement), sufficient to understand the relationship between the application and the isolated site. The likely impacts the developments will have on each other, such as solar access, visual and acoustic privacy and the impact of development of the isolated site on the streetscape must also be addressed.

P.3 The development of existing isolated sites is not to detract from the character of the streetscape and is to achieve a satisfactory level of amenity including solar access, visual and acoustic privacy. Development of existing isolated sites may not achieve the maximum potential, particularly height and floor space ratio, and will be assessed on merit.

P.4 Where adjacent sites are developing concurrently, site planning options for development as an amalgamated site are to be explored.