Private Realm Guidelines

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5.1 Introduction

Part Five provides design guidelines applicable to the private realm areas of the Bonnyrigg Masterplan. These guidelines are broad design rules that instruct the physical development of the area. These guidelines build upon and deliver the design vision and principles outlined in Part 1, 2 and 3 of the Masterplan.



Example Perspective



Distribution of Housing

5.2 Distribution of Housing

Although the Masterplan allows for flexibility in the ultimate layout and design of individual stages of the project, overall objectives shaping the distribution of new housing include:

- Increasing residential access to transport, services, and parks. This
 includes locating apartment sites and providing more attached homes
 close to Bonnyrigg Town Centre and the T-way, lining park edges with
 attached homes, and planning for all housing to be within 400m of a park;
- Providing for a complete and diverse community through a mix of housing types appropriate for diverse households. New housing types to be introduced include lifted apartments of 4- to 6-stories, new detached houses, and homes that are attached in groupings of 2-,3-,4-,6-. and 8-attached arrangements. New housing provides a range of bedroom combinations and varying levels of outdoor space and maintenance requirements;
- Increasing density while maintaining the suburban feel and character of the area. This includes designing attached homes to look and feel like large 2-storey houses;
- Reducing the stigma of social housing. This includes making social housing indistinguishable from private housing from the street, and providing social housing throughout the neighbourhood; and
- Providing quality apartment dwellings as an area appropriate housing option, including as a solution for aging in place. This includes designing apartment buildings to be accessible and to relate to the leafy suburban character of the area via ground level courtyards and landscaped spaces between buildings.

Flexibility in Design Outcomes

Beyond nominating two apartment precincts and outlining a strategy for locating higher density development, the Masterplan does not prescribe specific housing types on specific allotments. This enables each stage to meet social housing requirements while remaining responsive to changes in the community and the market, as well as potential changes to requirements related to building performance.

The new Bonnyrigg Masterplan is intended to be developed in 18 stages to be built over approximately 13 years. Although the Masterplan itself is largely determined by key requirements of the project (including the need to preserve private homes scattered throughout the existing estate), completing the project in stages encourages greater flexibility in design outcomes. However, changes in dwelling design with time are expected to be minor. Regardless, new dwellings will achieve the general requirements of the project.

Distribution of Housing



Mainly Detached Homes Some Attached Mainly Attached Homes Some Detached Apartments - up to 6 Stories Bonnyrigg Neighbourhood Centre



400m radius along streets from Parks

5.3 Detached and Attached Housing - General Guidelines

The following guideling have been developed for detached and attached housing within the Bonnyrigg Masterplan area, to deliver high-quality living environments for all residents of Bonnyrigg. These guidelines have been developed to ensure that each dwelling type can be placed adjacent to the other with minimum impact on amenity. As the Masterplan will be realised through staged development, design variations within each dwelling type over time is expected. Future potential design variations will be tested to ensure that dwelling types continue to be complimentary to each other.

Lot Size

The size of lots determines the type of dwellings that can be constructed in an area. The following table depicts minimum lot dimensions within Bonnyrigg for each proposed attached and detached dwelling type.

	Minimum Allotment Width	Minimum Allotment Dept	Minimum Number of Street Frontages
Detached House	9.5 metres. 12.5 metres if twin garage.	27.5 metres	1
2 Attached Dwellings	 15 metres if garages and car parks located at the rear. 17 metres if garages located at the street front 	30 metres	1
3 and 4 Attached Dwellings	20 metres	30 metres	1
6 Attached Dwellings	22 metres	30 metres	2
8 Attached Dwellings	28 metres	30 metres	2



Site Coverage

The amount of landscape area, along with the size of the building footprint, within individual allotments will help determine useability, privacy, and social opportunities for residents. Landscape area will add to residents' quality of life while providing habitat for indigenous plants and animals. Building footprint can shape both private and public amenity.

For Landscape Area:

- A minimum of 35% of each allotment will be used as landscape area (including soft and hard landscaping, and ancillary structures such as sheds and pagodas, but excluding garages and car parking spaces); and
- A minimum of 30% of the landscape area must be deep soil landscaping, to accommodate the growth of large trees, allow infiltration of rainwater, and reduce stormwater runoff.

For Building Footprint:

• A maximum of 65% of any allotment can be built upon, including garages and car parking spaces.







Soft Landscaping & Deep Soil Landscaping





Soft Landscaping & Deep Soil Landscaping



Native & Drought Resistant Landscaping

Streetscape

Streetscape contributes significantly to the quality of a neighbourhood. Bonnyrigg will offer a high quality residential address characterised by a suburban leafy amenity. Garages and various other building elements help determine streetscape.

For Garages:

- All garages must be setback a minimum of 5.5m from the street frontages (not including rear access streets);
- Garages fronting rear access streets may be constructed to the rear allotment boundary subject to demonstrating safe vehicle and pedestrian movements can be maintained;
- The maximum combined width of garages fronting a street (not including rear access streets) is 50% of the allotment width;
- The maximum combined width of garages fronting a rear access street is 80% of the allotment width; and
- No triple or more garages side-by-side are permitted except where fronting access places.

For Building Elements:

- Dwellings are to have a direct entry and address from a street frontage;
- Front doors to dwellings are to be visible and/or easily identifiable from the street;
- Dwellings on corner allotments are to be designed so that one elevation addresses the street. The secondary elevation is to be visually interesting, including articulation to the dwelling and roof form; and
- Long blank walls are to be avoided.



Example Perspective



Detached and Attached Housing - General Guidelines

Bulk and Scale

Building bulk and scale has a significant impact on private and public amenity. Elements of bulk and scale include building height and ceiling height.

For Building Height:

 Detached and attached dwellings will achieve a predominate building height of two storeys, with some three story elements permitted in select locations as specified in Section 3.9 of the Masterplan.

For Ceiling Height;

- Ceiling heights can help increase perceptions of spaciousness within dwellings, as well as assist in the provision of ample access to natural light and air.
- All dwellings must have minimum ceiling heights of 2.4m measured from finished floor to finished ceiling level in all habitable rooms

Setbacks

Setbacks help determine streetscape and provide adequate separation between dwellings. Setbacks also help to ensure privacy to dwellings from the street and between properties.

For Front Setbacks:

- A minimum of 80% of the building footprint area (excluding garages) is to be setback a minimum of 4.5m from the allotment frontage;
- A maximum of 20% of the building footprint area may be setback a minimum of 1.2m from the allotment frontage; and
- A zero setback may be permitted for limited building elements and only on secondary street frontages.

For Side and Rear Setbacks:

- 80% of the building footprint must be setback a minimum of 0.9m from the side boundary;
- A zero setback may be provided on access places.
- Where there is a zero side setback, a minimum 0.9m access path must be provided between the front and rear yards elsewhere;
- Zero side setbacks must not exceed a maximum length of 12m; Windows or openings are permitted within these walls only where they satisfy BCA requirements for fire safety and where no privacy impacts arise; and
- Where a gutter is required on the zero setback boundary, a 0.2m offset from the allotment line must be established, with the placement of a maintenance easement on the adjoining allotment for access.



Building height will generally be two-storeys for attached and detached dwellings



Ceiling heights can help increase perceptions of spaciousness within dwellings







Horizontal Screen



Screen between Back yards



Offset balconies

Privacy

The Bonnyrigg Masterplan design encourages visual privacy while maximising outlook and views from principal rooms. New design will also assure acoustic privacy.

For Visual Privacy:

- Internal layout of buildings must be designed to minimise overlooking of living areas and private open spaces;
- A balcony or window from a habitable room must not be located to have a direct view into the balcony or window of another habitable room of another dwelling located within 6m;
- Windows of upper level primary living rooms that face ground level private open spaces of another dwelling must be either of a high level with a deep sill, or have a sill height of minimum 1.5m above floor level, or must be fitted with a horizontal privacy screen from its base (or similar) to screen a proportion of the private open space from the window.; and
- An alternative to the horizontal privacy screen may be a pergola or similar fitted within the private open space of the adjacent dwelling.

For Acoustic Privacy:

- Development that adjoins significant noise sources (such as Elizabeth Drive and Cabramatta Road) must be designed to achieve an acceptable internal noise level, based on the recognised Australian Standards and those regulated by the relevant State Government Authority;
- Any on-site noise generating sources, such as plant rooms and equipment, air conditioning units, pool filters, and recreation areas, must be designed to not exceed 5dB(A) above the existing background noise level at the nearest residential receiver;
- Air conditioning units are to meet appropriate acoustic standards; and
- Attached dwellings and apartments must be designed (and their material specified) to the relevant BCA requirements for acoustic privacy.



Detached and Attached Housing - General Guidelines

Safety and Security

Bonnyrigg will be a mixed income community. The Masterplan is designed to minimise potential conflicts between residents. All development within Bonnyrigg will be designed through the NSW Police Crime Prevention through Environmental Design (CPTED) principles. The proposed Masterplan will create safe and secure private domain through a range of design treatments. In general, safety and security will be increased by:

Avoiding any ambiguous semi-private spaces:

- Ensuring that all areas are obviously owned by either the body corporate or owner of the dwelling.
- Defining the edges of spaces using a mixture of height change, landscape, hedges, fences, walls, and gates; and
- Ensuring each dwelling has safe well-lit access to and from their car parks and their dwelling.

Controlling access to homes:

- Making homes inaccessible from balconies, roofs and windows of neighbouring buildings; and
- Providing direct access from the car park to the home wherever possible.

Enhancing the visibility and safety of building entrances;

- Orienting entrances towards a public street;
- Providing clear site lines from and to the street; and
- Minimising the number of dwellings using shared entrance ways;

Increasing opportunities for casual surveillance;

 Orienting living areas and providing balconies with views over public and any communal open spaces or areas of car parking.

Minimising opportunities for entrapment and concealment;

- Avoiding any dead ends and other areas of possible entrapment;
- Ensuring that lighting is sufficient to allow for facial recognition of approaching pedestrians within 15m;
- Avoiding blind or dark alcoves near where people will need to walk such as entrances, car parks, corridors or walkways;
- Providing good lighting along any paths and areas that people are likely to use at night. Such as over entry doors and car parking areas; and
- Utilising white light instead of sodium vapour to ensure proper colour and textural rendition.



Transition - Territorial Reinforcement Public - Semi Private - Private Spaces



Passive Surveillance



Dwellings on Corner Lots Provide Good Opportunities for Casual Surveillance



Soft Landscaping & Deep Soil Zone



Examples of Front Fencing



Example of Retaining Walls

Open Space

The Masterplan for Bonnyrigg encompasses a vision of streets and pathways operating as important 'neighbourhood spaces'. For this to occur, there needs to be a strong demarcation between public, semi-private and private spaces, so residents feel comfortable interacting with passers-by from their front yards. Important elements of open space include private open space, fencing, and retaining walls.

For Private Open Space:

- The Bonnyrigg Masterplan will provide each dwelling private open space designed to offer residents quality usable outdoor living areas for recreation and outdoor activities;
- Each dwelling must have a minimum of 25m² of ground level private open space with a minimum dimension of 4m, or 10m² of above ground level open space in the form of a balcony with a minimum dimension of 2.5 m;
- Private open space should generally be accessible from a living area of dwellings; and
- The private open space should generally be located to maximise solar access.

For Fencing:

• Fencing will be constructed in accordance with the site fencing strategy.

For Retaining Walls:

• Retaining walls will be designed to not exceed a height of more than 1m. When located within sight of a public place ,the material and colour will be complementary to the character and quality of the streetscape.



Detached and Attached Housing - General Guidelines

Car Parking and Garages

Car parking and garages impact streetscape as well as neighbourhood character and movement patterns. The overall objective of the car parking and garage guidelines offered here is to ensure that car parking and garages are appropriate to the Masterplan vision.

For Car Parking and Garages:

- Car parking must be designed to ensure that cars are not parked across pedestrian or cycle paths located in the street verge;
- The minimum dimensions of any parking space is 2.5m x 5.5m. The minimum internal dimensions of an enclosed garage must be 3m x 6m. The maximum width of driveways for individual dwellings at the allotment line must be 6m;
- All housing types must have a minimum of 1 car parking space per dwelling;
- Detached homes will provide two car spaces per dwelling which may be tandem. Visitor parking will be provided on street and;
- Attached home types will provide car spaces as follows:
 - 1 or 2 bedroom homes will have a minimum 1 car space; and
 - 3 bedroom homes will have a minimum 1.5 car spaces per home (the extra car space will be distributed to one or the other 3 bedroom home within the attached group of homes); and
 - Visitor parking will be provided on-street.

Service Areas

For the Bonnyrigg Masterplan to deliver a high quality streetscape, it is important that the service areas of homes are designed to be complementary to the neighbourhood.

The Masterplan will ensure this through the following design measure:

• Each dwelling will have access to a service court for garbage that is screened from the street and placed in a convenient location for access from both the home and the public point of pick up for garbage.



Example - Carparking behind allotment line



Example - Carparking Formalised Car Parking Bays in collector streets.



Service areas for garbage bins that are screened from the street



Garbage Service Areas in easy access to the garbage pick up location.





Maximum height of Finished Floor Level above ground

Storage

Adequate storage space was a common desire expressed by both the existing and potential future residents of the neighbourhood. An appropriate amount and balance of internal and external storage space needs to be provided for each dwelling, having regard to the likely needs of the occupant of that dwelling,

The following storage space should be provided in addition to kitchen cupboards and bedroom wardrobes:

- 1 bedroom dwelling 6m³.
- 2 bedroom dwelling 8m³; and
- 3+ bedroom dwelling 10m³.

Sloping Sites

Bonnyrigg has a natural rolling topography that adds to the area's unique character. The Bonnyrigg Masterplan retains these slopes, as well as key existing vegetation profiles

For Cut and Fill:

- The maximum level of cut must not exceed 1m below the natural ground level and the maximum level of fill must not exceed 1m above natural ground level, measured at any corner of the building platform; and
- If basement car parking or similar underground floors are developed, the finished floor levels of the ground floor of the building must finish with a maximum level of 1m above natural ground level, measured from any corner of the building platform.

Sustainable Environmental Design and BASIX



The Masterplan establishes stretch targets for the environmental design of the dwellings that exceed those required of the NSW Government. The Building Sustainability Index (BASIX) is an interactive, internet-based planning tool designed to assess the potential performance of residential development against a range of sustainability indices. The focus of BASIX is on the key indices of water and energy, and the related indices of landscape, stormwater and thermal comfort.

The base and stretch targets for attached and detached housing (as stated in Part 3 of the Masterplan, but repeated here) are as follows:

Energy Efficiency

Energy Efficiency			
Criteria	Base Target	Stretch Target	
BASIX Energy Score / Greenhouse Gas Emissions	Compliance with the minimum BASIX requirements (35 or 40% reduction in per capita CO ² emissions compared to the national average as quantified by BASIX depending on dwelling types)	50% reduction in per capita C0 ² emissions compared to the national average as quantified by BASIX	
Peak Electricity Demand	To avoid a per capita increase in peak electricity demand	To avoid an increase in electricity infrastructure required to service the site, despite an increase in density	

Water and Wastewater Management

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Criteria	Base Target	Stretch Target	
BASIX Water Score	Compliance with BASIX water target (40% reduction in per capita potable water use compared to the national average as quantified by BASIX)	60% reduction in per capita potable water use compared to the national average as quantified by BASIX	
Quality of Stormwater Leaving the Site	Water Sensitive Urban Design to treat or filter stormwater according to ANZECC guidelines for three month average recurrence interval storm events	N/a	
Quantity of Stormwater Leaving the Site	Water Sensitive Urban Design features to avoid increases in stormwater flows for all events up to the 1-in-100-year Average Recurrence Interval events	N/a	
Increase the Site- Wide Potable Water Demand following Development	N/a	To avoid an increase in the potable water infrastructure required to service the site, despite an increase in density	
Increase in Flow to Sewer following Development	N/a	To avoid an increase in sewerage infrastructure required to service the site, despite an increase in density	







Bioretention to capture site stormwater runnoff

Occupant amenity and thermal comfort





Kitchen with access to natural light



Clerestory Window - to achieve natural light when access or open space of another home is adjacent

Occupant Health, wellbeing and Amenity			
Criteria	Base Target	Stretch Target	
Natural Ventilation	Compliance with minimum SEPP 65 requirement that 60% of dwellings have a dual aspect	Provision of dual aspect facades for no less than 90% of dwellings	
Natural Light	Building forms should provide a maximum northerly exposure for as many rooms as possible in each dwelling	Provision of a daylight factor of no less than 25% of 60% of all living spaces	
Thermal Comfort	Compliance with BASIX requirements for Thermal Comfort	Design to provide thermal comfort such that a majority of occupants are comfortable for 98% of the year, using the thermal comfort standard ISO7730	
Indoor Air Pollutants	Use of low-VOC paints and carpets for all internal wall and ceiling paint and dwelling carpets; Use of low-formaldehyde MDF	N/a	
Shading Devices	Shading devices will be used, such as eaves, awnings, external louvres, and pergolas to filter the summer sun.	N/a	

Solar Access

- Building forms should provide a maximum northerly exposure for as many rooms as possible in each dwelling and minimise casting of shadows;
- Glazing facing west to southwest should be minimized and protected with effective sun shades; and
- Detached and attached dwellings must be designed to ensure the adjoining living area windows and more than 50% of their private open space on the subject site or any adjoining site receives at least 3 hours of direct sunlight between 9am and 3pm on the 21st of June.



Apartments and Seniors Living



5.4 Apartments and Senior Living

The Bonnyrigg Masterplan identifies areas which are proposed to be developed over time to accommodate residents in apartments and in purpose-designed seniors living housing. While the final design of these forms of housing will be subject to existing design control and guidelines including SEPP 65 and the accompanying Residential Flat Code and the SEPP Seniors Living, broad details of the desired form and elements in these nominated areas are outlined as follows.

Precinct One – Apartments Bonnyrigg Plaza

The Masterplan for Bonnyrigg provides for a number of uses within this precinct. The precinct can accommodate a mix of attached homes and apartments, as well as a potential aged care facility. The plan for this precinct proposes two new roads integrated with Bonnyrigg Avenue and potentially with Bonnyrigg Plaza.

The precinct will interface with Bonnyrigg Plaza via a new mixed-use square. The square will provide a pleasant, active, and vibrant area to complement and connect new development with the Town Centre. The connections into Bonnyrigg Plaza and Bonnyrigg Avenue require a flexible approach that can respond to both the current and possible future configuration of buildings and access points to Bonnyrigg Plaza.

The apartments within this precinct will front Bonnyrigg Avenue, with a mixture of residential apartments with either ground floor courtyards or addresses directly on to this street. The ground level might also provide space for small-scale commercial, convenience retail, and cafes.

The new entry street into the precinct will be a critical gateway into Bonnyrigg. The buildings on this corner will reinforce the importance of this entrance through suitable corner treatments, such as a stepping in or stepping out of the building footprint or a curvilinear form.

The heights of the buildings within the precinct will be a maximum of six-stories and a minimum of two-stories, subject to the design of this stage of development.



Indicative Option A - Bonnyrigg Plaza - As is



Indicative Option B - Bonnyrigg Plaza - Expands but does not integrate



Indicative Option C - Bonnyrigg Plaza - Integrates in Redevelopment



Apartments and Seniors Living





Apartments and Seniors Living

Precinct Two – Apartment Temple Precinct

This precinct is located between two parks. As stated previously in Part 3 of this Masterplan, the apartment building to the west of the precinct is to be designed to balance its height against that of the neighbouring Khmer Temple. The precinct design promotes a new street aligned in accordance with a view of the Temple. The height and placement of new buildings within the precinct will respect the current visual prominence of the Temple.

The existing grouping of villas to the north of this precinct will be retained. The precinct will place a group of twostorey attached dwellings to the immediate boundary of this site to complement their amenity. A private street network will separate these two-storey forms and the parks from the apartments. A pedestrian link will be incorporated through the apartment area to the park on the eastern edge of the apartments.



Street aligned to provide a view of the Temple. Building form is complimentary to the Temple.

Apartments and Seniors Living



Access PlaceCourtyard Address







Bonnyrigg Neighbourhood Centre

5.5 Bonnyrigg Neighbourhood Centre

As described earlier in Part 3 of this Masterplan, the site for Bonnyrigg Neighbourhood Centre has been selected based on a number of factors, including:

- To provide residents of the eastern portion of the Masterplan area with easier access to community services. The Masterplan area is adjacent to the Bonnyrigg Town Centre, and the eastern portion of the neighbourhood is located over a kilometre from the Town Centre, with an even greater walking distance. It is appropriate to provide a community centre in closer proximity for residents within the eastern portion of the Masterplan area as the western portion of the site enjoys excellent access to the extensive range of retail, commercial, community and recreational activities provided within the Town Centre;
- It is considered appropriate to provide a limited range of retail and commercial services within the neighbourhood to meet the convenience needs of local residents. An economic impact assessment has confirmed that such activities will not have a detrimental impact upon the existing viability of Bonnyrigg Town Centre;
- It is also considered appropriate to provide community facilities within the neighbourhood, including office accommodation for social housing tenancy management. There is also a need for a community centre that provides meeting facilities and office space for community organisations; and
- It is important that these facilities are provided in a central location within the neighbourhood to maximise its
 accessibility to residents and encourage walking and cycling as a means of travel. It is considered that the colocation of facilities within a new Neighbourhood Community Centre will provide a significant opportunity to create
 a focal point for community interaction and to foster a sense of place and local identity.

In regards to the proposed location of Bonnyrigg Neighbourhood Centre:

- The location links the two major "halves" of Bonnyrigg at a natural centre of the community and within a prominent valley;
- The site fronts Tarlington Parade, Bunker Parade, and a new street that will connect these two thoroughfares. This
 provides the new Bonnyrigg Neighbourhood Centre with three important street frontages and offers the site good
 vehicular access;
- The site is adjacent to Valley Park, an important aspect of the open space network, allowing the Bonnyrigg Neighbourhood Centre to interface with the open space network. The pedestrian and cycle path network running north-south through the open space network joins the east-west footpath and shareway near this location; and
- The location provides a truly central destination for the community, helping to form neighbourhood cohesion.

Bonnyrigg Neighbourhood Centre



Bonnyrigg Neighbourhood Centre - Indicative Layout



Cafe

Community Garden

Example of Pavilion Style Architecture





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