

# Structure and Character of Bonnyrigg

---

|             |  |    |
|-------------|--|----|
| <b>3.1</b>  | Introduction                           | 47 |
| <b>3.2</b>  | Movement and Connections               | 48 |
| <b>3.3</b>  | Open Space                             | 50 |
| <b>3.4</b>  | Built Form                             | 52 |
| <b>3.5</b>  | Character - General                    | 54 |
| <b>3.6</b>  | Edges and Transitions                  | 57 |
| <b>3.7</b>  | Character of Special Places            | 62 |
| <b>3.8</b>  | Streetscape Character                  | 66 |
| <b>3.9</b>  | Built Form Character                   | 67 |
| <b>3.10</b> | Environmentally Sensitive Design (ESD) | 71 |
| <b>3.11</b> | Safety & Security                      | 74 |
| <b>3.12</b> | Staging and Implementation             | 77 |

## PART THREE



## PART THREE



*living communities*

## PART THREE STRUCTURE AND CHARACTER OF BONNYRIGG

---

### 3.1 Introduction

This part of the Masterplan describes the overall design rationale, urban structure, and character of the new Bonnyrigg. It identifies issues inherent within the current spatial design and outlines how the Masterplan addresses these challenges.

The spatial design and rationale for the Masterplan can be understood to address the following categories

1. Movement and Connection – How people move around;
2. Open Spaces – How people use their streets and parks;
3. Built Form – How people live;
4. Character – The feeling or sense the place conveys
5. Safety and Security – How safe and secure people feel; and
6. Environmental Sustainability – How people use the planet's resources.

## PART THREE STRUCTURE AND CHARACTER OF BONNYRIGG

### Movement and Connections

#### 3.2 Movement and Connections

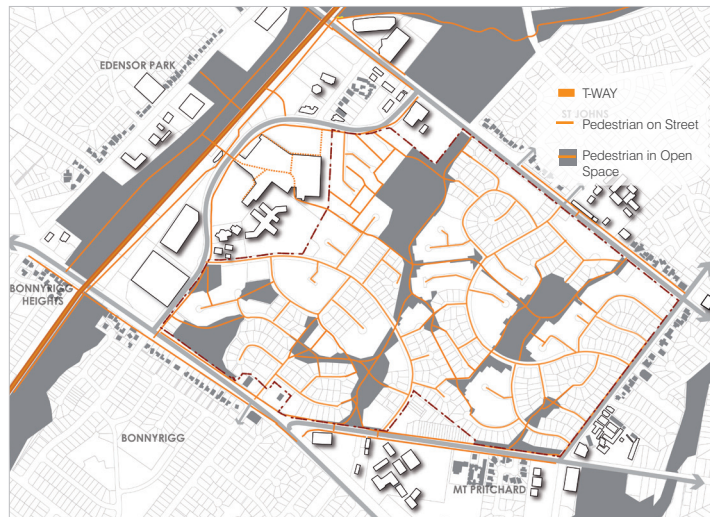
##### Current Situation

Bonnyrigg currently has segregated pedestrian and vehicle movement networks, with pedestrian networks located primarily to the rear of properties. This arrangement limits surveillance of pedestrian networks.

In addition, the current street network separates Bonnyrigg into two halves, from approximately east to west. Bunker Parade and Tarlington Parade comprise two important but separate collector roads. In general, the street network is defined by limited connectivity, with numerous cul-de-sacs and dead-end places and courts.

To summarise, the current design is challenged by:

- the perception that the pedestrian paths are unsafe, due to limited surveillance of this network. This discourages walking, which fuels vehicle use within the neighbourhood;
- similar to neighbourhood patterns, facilities surrounding Bonnyrigg turn their address away from pedestrian paths and towards vehicular entrances. This leaves pedestrians to enter via the back of buildings or through service spaces, reducing pedestrian amenity and also discouraging walking;
- in general and for numerous reasons, movement networks (pedestrian, cycle, vehicle, and public transport) are indecipherable to individuals unfamiliar with the area; and
- limited street connectivity and address challenges wayfinding and emergency response.



Existing Pedestrian



Existing Road Hierarchy



Existing Verges



## PART THREE STRUCTURE AND CHARACTER OF BONNYRIGG

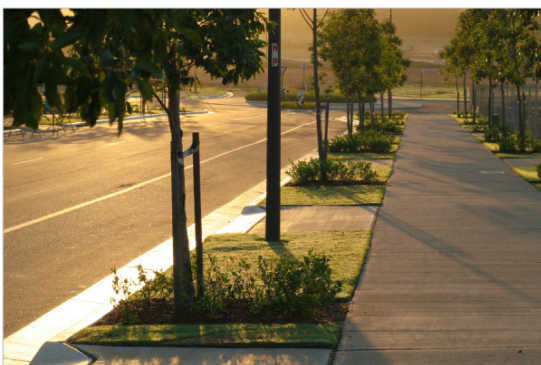
### Movement and Connections



Proposed Pedestrian/ Cycle Ways (In greater detail in Part 4)



Proposed Road Hierarchy (In greater detail in Part 4)



Example Cycle and Pedestrian Shareway

#### Design Solution

The Masterplan integrates pedestrian and cycle networks with the vehicular movement network, to increase surveillance and encourage more active streetscapes. In addition, the masterplan introduces new streets and minor roads to improve connectivity.

#### Objective

To connect Bonnyrigg destinations and population by an integrated pedestrian, cycle, public transport and vehicle network through the streets and parks of Bonnyrigg.

Each mode will be complementary to the other, and the Masterplan will favouring public transport and pedestrian and cycling access and movement.

#### Strategies

The Masterplan will provide a legible movement network that:

- Links into existing streets and adjoining residential areas;
- Incorporates and prioritises cycle way and shareways - particularly to and from schools and public transport stops;
- Provides connection between Bunker Parade and Tarlington Parade;
- Is safe for pedestrians, cyclists, and vehicles, through road design and street lighting;
- Has homes that face all streets, parks, and paths, improving surveillance;
- Deliver amenity for pedestrians, cyclists and drivers, by providing street trees to shade pedestrians, cyclists, and cars, where possible;
- Provides laybacks in kerbs where needed for pedestrians with strollers, disabled users, and the elderly;
- Considers with design how residents, pedestrians, cyclists, and motorists experience each street.
- Provides a pleasant outlook for the resident and an unambiguous signal to the motorist regarding the use of each street;
- All pedestrian footpaths will be a minimum of 1.2m in width; and
- Roads will be built in accordance with relevant Australian, RTA, and Fairfield City Council standards.

## PART THREE STRUCTURE AND CHARACTER OF BONNYRIGG

### Open Space

#### 3.3 Open Space

##### Current Situation

The existing open spaces within the Bonnyrigg estate are concentrated on the central valley area and two elevated points within the site. Although existing open spaces contain some impressive trees and canopies, open spaces within Bonnyrigg are generally comprised of large turfed areas with low levels of embellishment, limited useful function, and few recreational opportunities. A key open space resource is the basketball court in Bunker Reserve, which is considered an important community investment and resource.

Existing open spaces suffer from a number of safety and security concerns, including poor surveillance. This is due to the separation of vehicular movement away from open spaces, the high backyard fencing that typically fronts parks and pedestrian pathways, and the poor lighting of the public domain. In general, existing parks are under utilised and exhibit signs of neglect. In addition, the existing pedestrian and cycle network which traverses open spaces is perceived as unsafe by the community.

The overall result is an environment of seclusion within existing open space that encourages open space use for anti-social behaviour.

##### Design Response

The Masterplan rationalises open spaces, provides street and house address to parks, and introduces new facilities and lighting to open spaces in Bonnyrigg. The Masterplan includes design for new parks that offer opportunities for passive and more active forms of recreation to a diversity of residents. In addition, the greater density encouraged by the new Masterplan will help increase activity within and surveillance of open space and parks.



Existing Open Space



Existing Conditions



Proposed Open Space

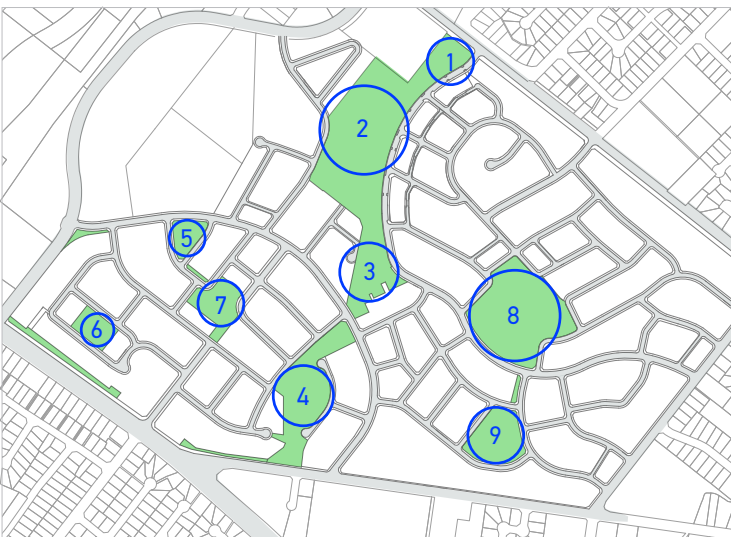


## PART THREE STRUCTURE AND CHARACTER OF BONNYRIGG

### Open Space



400m pedestrian shed circles. (400m along streets to parks) Access to open space.



- |   |                              |
|---|------------------------------|
| 1 Entry Park - Stage One - Passive            | 6 Village Park - Passive     |
| 2 Lower Valley Creek Sports Park - Active     | 7 Forest Park - Active       |
| 3 Valley Creek Community Centre Park - Active | 8 Hilltop Park - Active      |
| 4 Upper Valley Creek Park - Passive           | 9 Junior Play Park - Passive |
| 5 Bonnyrigg Avenue Entry Park - Passive       |                              |

#### Objectives

To rationalise and increase the accessibility and safety of open spaces within the neighbourhood;

To provide new parks and open space facilities that encourage active and passive use by a diversity of residents; and

To integrate the neighbourhood open space system with the regional open space system that surrounds the site.

#### Strategies

The new Masterplan will:

- Where possible, retain key vegetation and parks in their current locations;
- Introduce street edges and housing that fronts open spaces to increase surveillance of these areas;
- Introduce many and varied activities into the parks.
- Incorporate native planting to enhance fauna habitats, reduce water demand, and provide for easy maintenance, as well as reduce the amount of turf-only areas;
- Reinststate a creek line along the length of the new valley park. This will provide passive amenity, ecological, and stormwater treatment functions. It will also enable residents to connect with the natural systems of the environment. A shareway will meander along the length of the creek, connecting into the regional cycle way; and
- Provide appropriate levels of lighting to all open spaces.

#### Names of the Parks.

Bonnyrigg partnerships are currently in consultation with Fairfield City Council and the existing community (including Aboriginal Elders) to identify names for the nine (9) parks. The names will reflect significant natural features and history of the area, as well as community ownership, responsibility, and pride.

## PART THREE STRUCTURE AND CHARACTER OF BONNYRIGG

### Built Form

#### 3.4 Built Form

##### Current Situation

The Bonnyrigg “estate” was developed during the late 1970s and early 1980s using Radburn design principles, with dwellings connected via a network of open space, parks, and walkways separated from the vehicle network.

Of the 919 dwellings currently in the masterplan area, 833 are social housing. In general, they are a mix of cottage style dwellings with traditional front and back yards and super lot townhouses with car access provided by cul-de-sacs to the rear of properties, and to the front facing open spaces. Typically, town houses have high private back fences fronting both streets and open spaces. The visual and psychological separation caused by high fences has resulted in poorly cared for streets and open spaces, and a lack of community ‘ownership’ of these spaces.

In general, there is the belief that the Radburn design has proven to be unsuitable for social housing. Specifically, concentrating social housing in large areas has proven to be unsuccessful. Such design has led to a concentration of disadvantage and adverse social and economic impacts on residents and the wider community. Other similar examples in western Sydney of concentrated social housing creating adverse social outcomes include Minto (currently being redeveloped) and Macquarie Fields (in plans for redevelopment) in Campbelltown.

In regards to individual dwellings and structures, many social housing units are also at the end of its economic life or requires significant refurbishment to bring it to an acceptable standard.

##### Design Response

The new Masterplan will reduce the concentration of social housing to 30% of the overall dwellings on the site. This will be done without any net loss in social housing through a dramatic increase in the number of homes on the site.

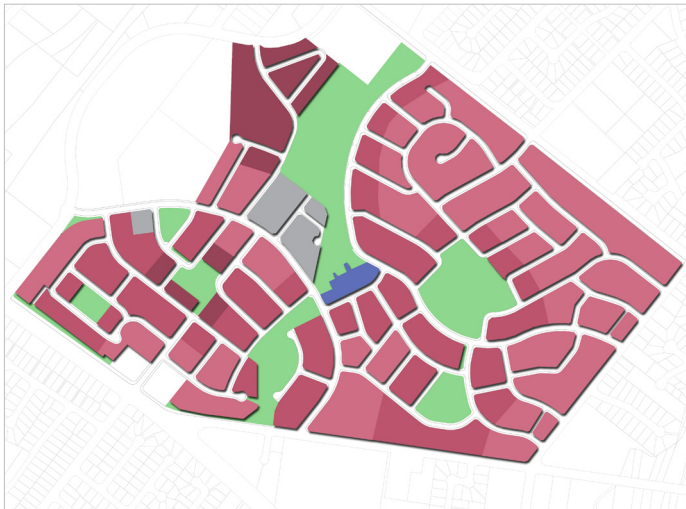
New development will follow the traditional pattern of houses and front yards addressing the street.









Existing Built Form

## PART THREE STRUCTURE AND CHARACTER OF BONNYRIGG

### Built Form



Proposed Density Distribution

|   |  |
|---|--|
|  | Attached and Detached Dwellings                              |
|  | Garden Apartments, Attached Dwellings and Detached Dwellings |
|  | Apartments up to 6 storeys                                   |
|  | Neighbourhood centre   |
|  | Existing Dwellings   |
|  | Open Space   |

#### Objective

To make 'neighbourhood space' of the street. New building placement and design will result in a greater level of ownership of the streetscape, better addresses for the homes, ensure passive surveillance of the streets and parks, and provide semi-private spaces of front yards for potential interaction within the community.

#### Strategies

The masterplan will:

- Provide for a complete and diverse community through a mix of housing types appropriate for diverse households. The homes will include lifted apartments of four to six storeys, garden apartments, detached and attached homes in varying groups. These homes combine to deliver many different bedroom combinations and varying levels of outdoor space and maintenance requirements. The attached homes, which include terraces and plex dwellings are designed to look and feel like large two-storey houses, in keeping with the suburban character and amenity the new Masterplan intends to evoke;
- Reduce the stigma of social housing by providing social housing that is externally indistinguishable from private housing. Increase densities so that the current level of social housing becomes 30% of the new total housing mix. Do not concentrate social housing within the new development.
- Lifted apartments will provide for aging in place. All apartments will be of modern design within the suburban model with courtyards for the ground floors and landscaped spaces between the buildings.

## PART THREE STRUCTURE AND CHARACTER OF BONNYRIGG

### Character - General

#### 3.5 Character - General

##### Current Situation

Character can be describe as the “look” and “feel” of an area. A technical definition is ‘the interrelationship of various aspects of built form, topography, vegetation, density, subdivision pattern and activity.’ The existing character and identity of Bonnyrigg is both part of, yet distinct within, the South Western Suburbs of Sydney.

Bonnyrigg and its surrounding areas are well-established residential suburbs. They generally have a mix of detached and attached homes ranging in height from 1- to 2-storeys, with well-established vegetation (including mature tree canopies) and a gently rolling topography.

The Masterplan area is perceived negatively by the surrounding community, due to the concentration of social housing. The neighbourhood currently presents as a 1970’s public housing estate based on Radburn design and layout concepts, and it has not followed the same growth process as the surrounding area. The public realm network is completely separate from the private realm of homes. Public open spaces consist primarily of large expanses of lawn, which are fronted by dilapidated back fences. Parks are under-utilised and exhibit long-standing signs of neglect, due primarily to the lack of adequate lighting and surveillance of these spaces from street and homes.

Detached dwellings within the Masterplan area are currently a mix of single-storey attached townhouses on super lots and cottages in more traditional street and lot layouts. The architecture of the residential dwellings is defined primarily by a uniformity of both construction material and design, with cottages either red or yellow brick and with tiled roofs, and town houses with awning windows and feature timber infill panels. The super lot townhouses have high fences to their vehicular access oads and cul-de-sacs. Dwellings exhibit little to no relationship to the public realm and residents show little care for the public realm.

There are positive elements of the existing character of Bonnyrigg. The community is relatively stable and Housing NSW report a high number of tenant requests to locate into the area. Residents are generally positive about life in the area and have a strong attachment to it. Current residents enjoy proximity to places of worship, services, and shopping, in particular. Tenancy turnover is very low, and there are approximately approximately 86 privately owned homes in the neighbourhood. The existing community is culturally diverse and there is a strong sense of Bonnyrigg being a cohesive community with local pride.

The topography of the site is dictated by two high points that slope towards the central valley of Tarlington Reserve. The current house-to-land ratio contributes to a feeling of spaciousness within the neighbourhood. In addition, the community has expressed a strong attachment to the vegetation and ‘green’ of the suburb.

At present, the estate’s plan area exhibits a lack of cohesion, and the area can be described as comprising two disconnected halves. There is the western half (centred on Bunker Parade) and the eastern half (centred on Tarlington Parade). These two halves have no vehicular connections between them, but are connected via off-street pedestrian pathways and open spaces (which are generally considered as unsafe by residents, due to the lack of surveillance and vehicle access available to them).



## PART THREE STRUCTURE AND CHARACTER OF BONNYRIGG

### Character - General



#### Design Solution – Character Statement

Bonnyrigg will become a high-quality residential area characterised by a suburban leafy amenity, with well-maintained public and private realms that reflect community pride. It will provide ease of access to shops, services, and public transport.

The renewal of Bonnyrigg will build upon the current positive attributes of the Bonnyrigg area to form an inclusive identity, complementary to, yet distinct from, the surrounding southwestern suburbs of Sydney. Bonnyrigg will become the first place of choice to acquire an affordable home in south west Sydney.

Bonnyrigg will be a place where;

- People will connect with the natural systems of their environment. Parks and open spaces will continue to be on high points. A creek line will be reintroduced through the centre of Bonnyrigg Estate. The natural water and vegetation systems will be expressed for people to connect to through parks and streets. There will be high quality homes, which evoke a feeling of spaciousness with their ready access to light and air;
- People will connect with each other. Well-designed streets will look feel and operate as neighbourhood spaces. They will offer a pleasant and safe place to walk and cycle. The front yards, verandas and balconies of houses will be designed to encourage their active use by residents and the associated interaction with their neighbours and pedestrians on the street;
- Bonnyrigg homes will be a mix of social and private housing (30% social housing and 70% private housing) - a dramatic transition from a housing mix that was previously 90% social housing). Housing will be designed in such a way that there is no identifiable external difference between social and private housing, promoting a cohesive community;
- Bonnyrigg Neighbourhood Community Centre will be located within the heart of Bonnyrigg with a community garden, community facilities, and opportunities for a broad mix of community activities; and
- Parks and open space environments will be specifically designed for multiple uses and to encourage informal meetings and interactions between residents.

## PART THREE STRUCTURE AND CHARACTER OF BONNYRIGG

### Character - General

#### Design Strategies

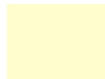
The desired character for Bonnyrigg will be created through a number of strategies related to:

1. Edges and transitions to the site;
2. Connections and movement paths;
3. Places of special character;
4. Street character;
5. Built form character; and
6. Specific precinct areas.

#### Site-Wide Identity

The identity of Bonnyrigg is to be established through the promotion of physical and visual, as well as social connections. The Masterplan will help establish the identity of Bonnyrigg by connecting the currently two halves of Bonnyrigg into a whole by:

- Adding several streets and pedestrian connections between the two halves of Bonnyrigg;
- Establishing visual connections between places of special character, destination points and site wide movement desire lines; and
- The development of Bonnyrigg Neighbourhood Centre at the heart of the community, at the point of connection between the two halves. Bonnyrigg Neighbourhood Centre will be a place for the residents of Bonnyrigg to meet through both informal means and by use of the facilities and community gardens.



## PART THREE STRUCTURE AND CHARACTER OF BONNYRIGG

### Edges and Transitions

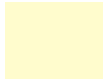
Social connections are to be supported through design that increases both informal and formal meeting opportunities. The development will have:

- Streets that look and feel like neighbourhood places;
- Parks that provide for a number of different activities and simultaneous uses;
- Bonnyrigg Neighbourhood Centre, including an associated community garden;
- A quality pedestrian and cycling environment connecting homes to destinations on and around the Masterplan Area, to encourage walking and cycling; and
- Parks and open spaces will continue to be on natural high and low points. Water and vegetation systems will be expressed for people to connect to the reinstated creek line which runs through the heart of Bonnyrigg.

### 3.6 Edges and Transitions

Developing Bonnyrigg as part of a wider established residential area requires the Masterplan to respond positively to the surrounds. Rather than a 'entry statement' that differentiates the neighbourhood from the surrounding area, the site edges of Bonnyrigg will attempt to integrate with the surroundings.

Edges will be developed as 'transition zones.' These will be areas that capture the aspirations of the development while also reinforcing its cohesiveness with the surrounding area.



## PART THREE STRUCTURE AND CHARACTER OF BONNYRIGG

### Edges and Transitions



Stage One Entry Park (Parks 1 & 2 depicted)

#### Stage One Entry Park.

Stage One includes a park that fronts Edensor Road. This area has a proposed rain garden feature and various walls to symbolise this new entrance for Bonnyrigg. It will have a new traffic intersection and a new street edging to the park thus providing a boulevard style integration. New homes will face out to the street and park with special attention given to the quality of their front yards. New pedestrian paths will be built to connect into surrounding open spaces, and distinctive tree planting will match species present within St Johns Park opposite. New homes will front Edensor Road and existing residents opposite.

#### Edensor, Cabramatta, & Humphries Road Boundaries

The new residential dwellings along this boundary will be designed to address Edensor Road and Humphries Road. Building forms along this boundary are to be similar in scale and setback with neighbouring properties. Materials, detailing, and design will be of high-quality. Face brick will be used, in part, to reflect the predominantly brick construction of homes on the opposite side.

## PART THREE STRUCTURE AND CHARACTER OF BONNYRIGG

### Edges and Transitions

#### Elizabeth Drive Edge

This edge requires the construction of a sound wall. The sound wall will be designed as a 'front door' to Bonnyrigg and incorporate aesthetically pleasing and attractive landscape treatments along Elizabeth Drive. It will also provide a pedestrian path with appropriate shade and shelter from street trees.

#### Intersection of Tarlington Parade and Bonnyrigg Avenue

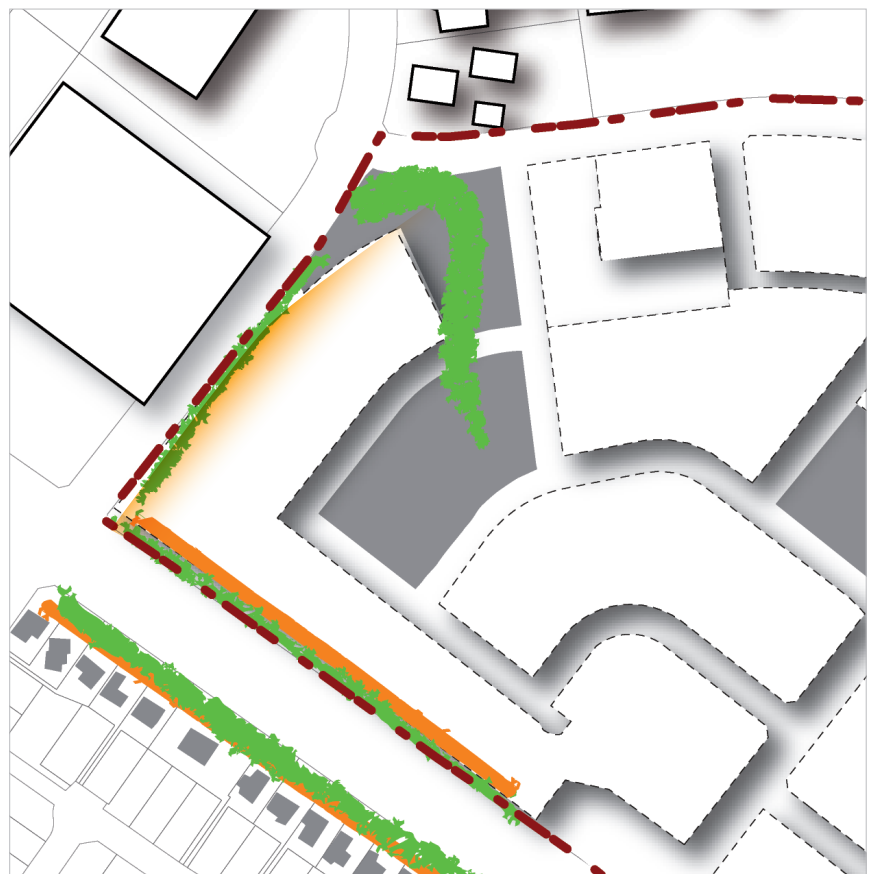
This area has both impressive stands of trees on the southern side of Tarlington Parade and a cluster of community buildings on its northern edge. This area provides important pedestrian and cycle connections through to the T-Way and Bonnyrigg Town Centre. A park here will provide the Temple with a foreground. This area makes significant contributions to the Masterplan area "sense of place" and is detailed within areas of special character below.

#### Bonnyrigg Avenue (south)

This edge of the site is nominated within the last stage of development. Currently the opposite use on Bonnyrigg Avenue is the Bus Depot and Bunnings Store. Residential and/or a mixed-use design with small scale retail and commercial on the ground floors and residential above is possible. This will be dependent on the surrounding activities when this stage of development is undertaken.



Landscape and Sound Wall - Elizabeth Drive



Landscape and Sound Wall & Bonnyrigg Avenue South



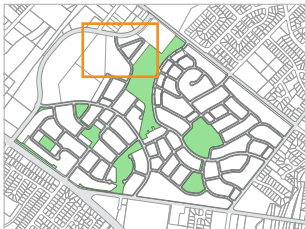


## PART THREE STRUCTURE AND CHARACTER OF BONNYRIGG

### Edges and Transitions



Bonnyrigg Avenue (North) and Bonnyrigg Plaza Interface



#### Bonnyrigg Avenue (north) and Bonnyrigg Plaza Interface

The current development occurring adjacent to the site along Bonnyrigg Avenue comprises larger format buildings with a mix of uses. There are Development Approvals for apartments along the northern frontage of this road. The current Council policy documents for this area reflect a desired future character of street edge development along Bonnyrigg Avenue with apartment buildings with mixed uses on the ground floor for an active street edge.

As part of the proposed apartment precinct around this area, a new street intersection will be built. This will form a new T-intersection with Bonnyrigg Avenue. This T-intersection will form a gateway into Bonnyrigg. Building forms on this corner will adopt an architectural expression that reflects this through curved or step out/step in buildings.

The buildings proposed for this area will be predominantly built to the street edge of Bonnyrigg Avenue, with the potential for mixed ground floor uses such as cafes and shops, if these prove to be viable. Alternatively, courtyard garden style residential apartments which have direct address to the street will be built along this edge. This presents a major opportunity, and Bonnyrigg Partnerships it is committed to working with Bonnyrigg Plaza owners to optimise design outcomes.

The integration with Bonnyrigg Plaza is accommodated within a number of potential design responses detailed in Part 5 of the Masterplan. These offer options that respond to both the current built form and future expansion of the Bonnyrigg Plaza.



## PART THREE STRUCTURE AND CHARACTER OF BONNYRIGG

### Edges and Transitions

#### Bonnyrigg Primary School Interface

The site boundary adjacent to Bonnyrigg Primary School is currently a security fence for the school. In the past the school grounds have operated as a pedestrian shortcut to and from Bonnyrigg Plaza. Bonnyrigg Primary School has sought to close access to the school grounds through the erecting of a security fence. The Masterplan places rear boundaries of allotments to the eastern boundary of the school to prevent this unauthorised access. Negotiations with the Department of Education regarding development interfaces are anticipated as part of the detailed application during relevant development stages.



Bonnyrigg Primary School Interface



# PART THREE STRUCTURE AND CHARACTER OF BONNYRIGG

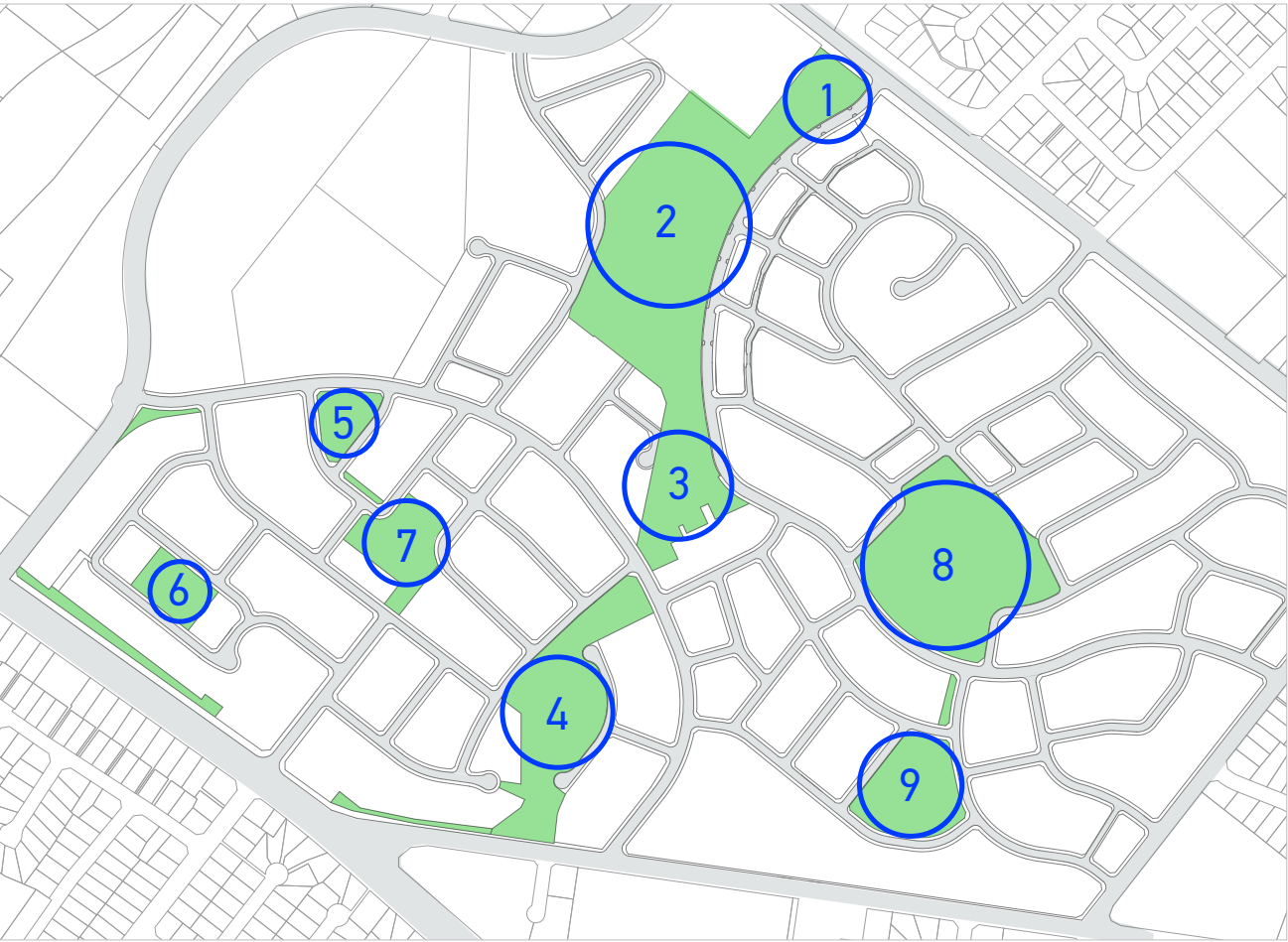
## Character of Special Places

### 3.7 Character of Special Places

Within the Bonnyrigg Masterplan area there are a number of locations which will have a special and unique character. These areas will contribute significantly to the overall sense of place due to their design uniqueness and/or function.

#### Parks and Open Space Areas

The Masterplan includes conceptual designs for seven new public parks. The Masterplan will revitalise these spaces so that they will make positive contributions to the identity of Bonnyrigg. The specific characters of these areas are outlined in Part 4 of the Masterplan.



- |   |                              |
|---|------------------------------|
| 1 Entry Park - Stage One - Passive            | 6 Village Park - Passive     |
| 2 Lower Valley Creek Sports Park - Active     | 7 Forest Park - Active       |
| 3 Valley Creek Community Centre Park - Active | 8 Hilltop Park - Active      |
| 4 Upper Valley Creek Park - Passive           | 9 Junior Play Park - Passive |
| 5 Bonnyrigg Avenue Entry Park - Passive       |                              |

New Parks Plan

## PART THREE STRUCTURE AND CHARACTER OF BONNYRIGG

### Character of Special Places



Examples of Pavilion Style Architecture



Example Small Scale Cafe

#### Bonnyrigg Neighbourhood Centre

Bonnyrigg Neighbourhood Centre will be located within the central valley of the neighbourhood, where the major movement corridors meet. Bonnyrigg Neighbourhood Centre will be bounded by Tarlington Parade, Bunker Parade, the proposed new street that will connect the two, and Valley Park. Bonnyrigg Neighbourhood Centre will be active and vibrant and will house a number of uses

The buildings will be designed in a twin pavilion format. One pavilion will be located on the Tarlington Parade frontage and the second on the Bunker Parade frontage. A public space square will connect the two pavilions. This area will be designed to provide high amenity, incorporate a community garden, and be adaptable to a variety of uses. Bonnyrigg Neighbourhood Centre will be the “heart” of the neighbourhood and an important space for social interaction.

Bonnyrigg Neighbourhood Centre will provide a community garden, function rooms (for events such as birthday parties and weddings, for example), and out reach services; in addition, it will house the offices for Bonnyrigg Partnerships. Bonnyrigg Neighbourhood Centre will also be a space for a variety of potential small scale commercial uses - such as childcare, neighbourhood retail, and a café. The Bonnyrigg Neighbourhood Centre is described in greater detail in Part 5 of the Masterplan.



Bonnyrigg Neighbourhood Centre - indicative Layout



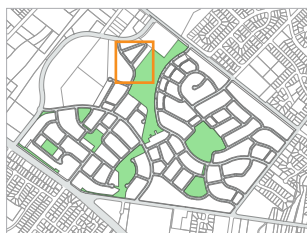
## PART THREE STRUCTURE AND CHARACTER OF BONNYRIGG




### Character of Special Places

#### Mixed Use Square, Interfacing with Bonnyrigg Plaza

The essence of this area is to provide a pleasant, active, and vibrant area to complement and connect with Bonnyrigg Town Centre. Connections into Bonnyrigg Plaza and Bonnyrigg Avenue require a flexible approach that can respond to both the current and possible future configuration and access points of Bonnyrigg Plaza.

The mixed use square will sit between the corner (designed as a gateway site into Bonnyrigg) and the allotment boundary of Bonnyrigg Plaza. The square is to be activated by either a residential or mixed use building with small-scale commercial or retail on the ground floor and residential development above. The building can orient to either a service area or an active frontage to the Bonnyrigg Plaza boundary, dependent on the form of the Plaza at the time of its development. The square provides a safe, active area for pedestrians and cyclists to connect with Bonnyrigg Town Centre and the T-way through either the Plaza or along Bonnyrigg Avenue. The mixed use square relates to the future design of the Bonnyrigg Plaza Apartment Precinct, described in Part 5 of the Masterplan.



-  Ground Floor Courtyard apartments
-  Potential Ground Floor mixed use
-  Private Open Space for Apartments



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

## PART THREE STRUCTURE AND CHARACTER OF BONNYRIGG

### Character of Special Places

#### The Temple precinct and its green link/park connection to Temple Precinct and its Connection to Bonnyrigg Avenue

This area makes significant contributions to the sense of place for the area. The intersection of Tarlington Parade with Bonnyrigg Avenue is the southern entry point. The land slopes up and away on approach from Bonnyrigg Avenue and will offer views of parks and homes within the community. The area has impressive stands of trees on the southern side of Tarlington Parade and a cluster of community buildings on its northern side. The Khmer Temple is an important cultural building, and new developments near this structure are required to be sensitive to its design and function, and particularly, in regards to height. This area is also a critical link between the neighbourhood, the T-way stop, and Bonnyrigg Town Centre.

The Masterplan incorporates a park layout and design that strengthens this area's role as entry point and as foreground to the Temple. A new street connection has been designed to align with the Temple, allowing a strong visual link from the neighbourhood to the Temple.

The masterplan seeks to provide appropriate siting, street alignment and building heights which respect the current visual prominence of the Temple. Attached and detached dwellings will be provided in the in closer proximity to the temple, with apartments located further to the south.

Design of this area relates to the Temple Apartment Precinct described in Part 5 of the Masterplan.



Temple and Entry Park



## PART THREE STRUCTURE AND CHARACTER OF BONNYRIGG

### Streetscape Character

#### 3.8 Streetscape Character

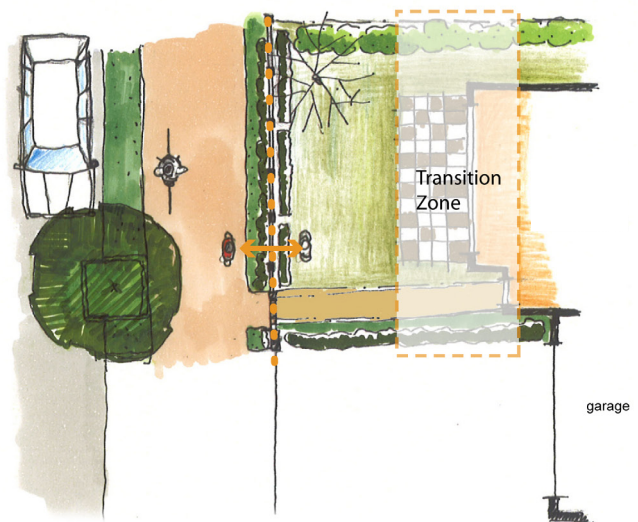
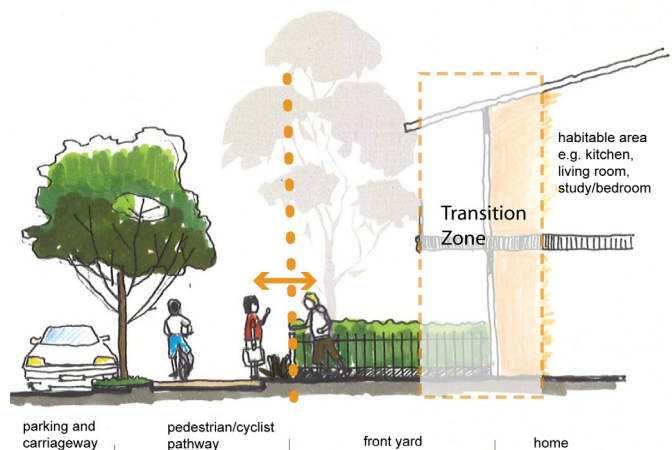
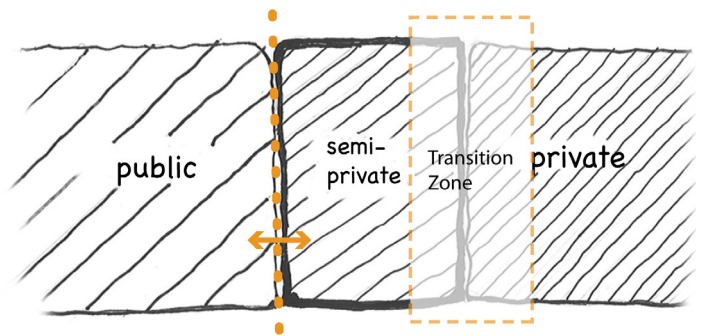
Within the Masterplan area, the key contributors to the streetscape will be street trees, footpaths, front fencing and front yards.

The non-linear nature of the streets and the corresponding pedestrian and cyclist movement networks will enable people moving through the neighbourhood to experience streets and homes from unique perspectives that add interest to movement. Street design will also help emphasise the spaces between buildings, aiding in the perceived spaciousness of the neighbourhood. The use of a number of different home types and layouts with some variation in setbacks will further increase visual interest and support the perceived spaciousness of the neighbourhood.

Streetscape character will be defined by elements that will provide consistency with some variety. Elements that will provide consistency include (but are not limited to) street trees and other plantings and driveway materials that are in keeping with the footpaths and cycle ways. Elements that will provide variety include the design (if not the height) of front fencing, the layout and landscape design of front yards, and building facades.

The streets within the new Masterplan area form a hierarchy which includes collector roads, access streets, and access roads. Each street type has been designed in relation to its desired use and in response to proposed dwelling designs. The proposed street hierarchy is described in greater detail in Part 4 of the Masterplan.

Streets that serve as neighbourhood spaces are essential to the character of the new Bonnyrigg. The 'front yards' and front rooms of dwellings have been designed to serve as semi-private zones that provide transition between the public street and private areas of dwellings. These spaces provide additional opportunity for neighbourhood interaction. These semi-private zones will be established within all front yards in Bonnyrigg through a combination of planned landscape, front fencing, and height difference between the front yard and the street. Part 5 of the Masterplan presents dwelling design in greater detail.





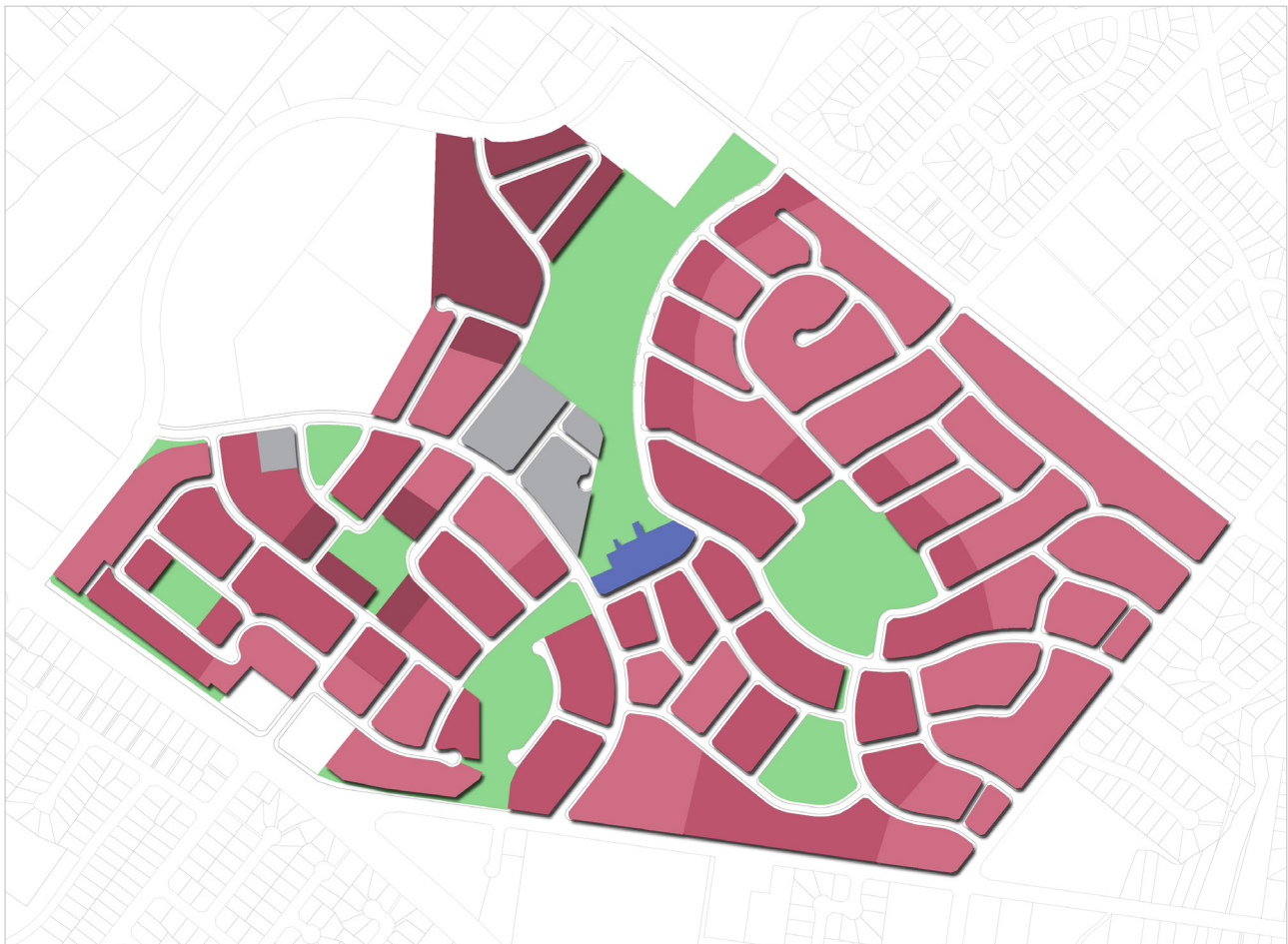
## PART THREE STRUCTURE AND CHARACTER OF BONNYRIGG

### Built Form Character







#### 3.9 Built Form Character

In general, new built form will deliver a high-quality residential address characterised by suburban leafy amenity. The private domain guidelines presented in Part 5 of the Masterplan will ensure a consistent built form that adds to private and public amenity.

In general, development across the neighbourhood will be two stories in height (with the exception of apartments in key areas). To increase visual interest and improve streetscapes, some homes will have the option for three storey elements. Such buildings will have a distinct presence and will assist with wayfinding.



Unique Dwellings and Apartment Elements

|   |  |   |                      |
|---|--|---|----------------------|
|  | Attached and Detached Dwellings                              |  | Neighbourhood centre |
|  | Garden Apartments, Attached Dwellings and Detached Dwellings |  | Existing Dwellings   |
|  | Apartments up to 6 storeys                                   |  | Open Space           |

## PART THREE **STRUCTURE AND CHARACTER OF BONNYRIGG**

### Built Form Character

#### Detached and Attached homes

Detached and attached homes comprise the majority of the Masterplan. The housing character of these buildings is within the suburban vernacular of the surrounding suburbs. The materials of the homes will be a mixture of brick and render, and building heights will range generally from one to two storeys, with some three storey elements allowed for in key locations.

The overall composition is made up of structural facade and 'clip on' elements including columns, beams, floor slabs, balconies, window openings and fenestration, doors, balustrades, roof forms, and parapets. The various individual design elements shall be consistently adopted from building form to building form, in order to create an unique street facade.

Some fundamental form elements will be consistent for each of the building forms. These are:

- Strong street entry elements and address for each dwelling;
- Covered entry doors;
- Interaction of the semi-private area at the front of the homes with the street; and
- Architectural features such as blade walls.

Private domain guidelines for detached and attached homes are detailed in Part 5 of the Masterplan.



*Photomontage of Detached and Attached homes*



## PART THREE STRUCTURE AND CHARACTER OF BONNYRIGG

### Built Form Character

#### Apartments

The apartment buildings will be of contemporary design and materials. They will reinforce street edges where required. Ground floor apartments will incorporate direct addresses through courtyards, where possible. Building facades will have an appropriate scale, rhythm, and proportion reflective of their surroundings. The facades will feature elements such as columns, beams, floor slabs, balconies, balustrades, roof forms, and parapets to contribute an organised pattern within the streetscape.

The compositions will:

- define a base, middle and top;
- express the internal layout;
- have articulated building entries; and
- have articulated balconies and balustrades.



Photomontage of Garden Apartments

## PART THREE **STRUCTURE AND CHARACTER OF BONNYRIGG**

---

### Built Form Character

#### Precincts

Within Bonnyrigg, there are areas of cohesion which are related to natural elements such as park position, topography, systems of water flow, and access to light and air. In addition to these natural elements are the proposed design relationships of movement, park areas, and building uses and forms, as well as the timing of stages of development. Precinct areas will be further defined and enhanced with consistencies in dwelling architecture and street armature. Precinct areas will be built with a prescribed complementary colour and material palette that is unique for each precinct. The edges of these areas will not be hard edged but will reflect a mixing of palettes with neighbouring areas. The blending of edges and defining of precincts will be subject to the marketability and staging of the development.

## PART THREE STRUCTURE AND CHARACTER OF BONNYRIGG

### Environmentally Sensitive Design (ESD)

Constructed Rain Garden



### 3.10 Environmentally Sensitive Design (ESD)

#### Current Situation

The Bonnyrigg Masterplan area was constructed with an emphasis on man made engineering solutions rather than working with natural systems. The overland floor path line within the centre of Bonnyrigg was cleared of vegetation and regraded to make sports fields. The homes themselves were constructed with what today would be considered a lack of climate responsive design. This results in a heavy reliance on mechanical heating and cooling by residents. The social housing dwellings do not have gas or recycled water services, creating a larger-than-necessary resource consumption per household.

#### Design Solution

The Bonnyrigg Masterplan is to be a leader in sustainability in the suburban environment.

#### Design Strategies

The ESD strategies for this Masterplan are divided into two categories, site-wide and dwelling design.

##### Site-wide Strategies

- Integration of re-use and recycle principles through all stages of development, including retention and upgrade of roads (approximately 50% of existing roads will be retained). Facilities will also be preserved, where desirable (e.g. basketball court upgrade and retention of parks and appropriate existing vegetation). In addition, there will be the recycling and re-use of materials with demolition and construction (e.g. re-use of concrete, timber, pipework), wherever possible;
- Connection to a recycled water supply, as agreed to with Sydney Water;
- Introduction of gas services and the encouragement of its use in heating, cooking and hot water provision;
- Retention of existing native vegetation, where possible, and planting of drought resistant indigenous flora - contributing to native fauna habitat creation and biodiversity while reducing demand on resources;
- Application of Water Sensitive Urban Design (WSUD) principles to the full water cycle management of the site;
- Reduction in vehicle CO<sub>2</sub> emissions on a per capita basis by encouraging walking cycling and public transport use; and
- Provision of low maintenance and robust landscape solutions.

## PART THREE STRUCTURE AND CHARACTER OF BONNYRIGG

### Environmentally Sensitive Design (ESD)

#### Dwelling Strategies

BASIX is the NSW measure of sustainability for dwelling design. It consists of three primary criteria for dwelling design:

- Energy Efficiency;
- Water Efficiency; and
- Occupant amenity and thermal comfort.

The sustainability of the dwelling design is required to meet specific targets within each of these criteria in addition the dwelling design will establish stretch targets that exceed these. These are detailed in the following tables:

#### 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 <sub>2</sub> emissions compared to the national average as quantified by BASIX depending on dwelling types) | 50% reduction in per capita CO <sub>2</sub> 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

| Water and Wastewater Management                                   |  |   |
|---|--|---|
| 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          |



## PART THREE STRUCTURE AND CHARACTER OF BONNYRIGG

### Environmentally Sensitive Design (ESD)

#### Occupant amenity and thermal comfort

| 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;<br><br>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   |

## PART THREE STRUCTURE AND CHARACTER OF BONNYRIGG

### Safety and Security

#### 3.11 Safety & Security

##### Current Situation

The Bonnyrigg Masterplan area currently suffers from high incident rates for break-and-enter crimes, drug dealing, and anti-social behaviour within its parks. There is also an element of witness intimidation leading to reluctance to report crimes. Limited opportunities for casual surveillance within the Masterplan area has contributed to the current situation.

In addition, the pursuit of offenders by police is made difficult by the separation of pedestrian and vehicle networks. Offenders can currently abscond through a pedestrian network that offers many points of escape but limited vehicle access. Pursuit with vehicles can be ineffective given the segmented nature of the street system, and the lack of cohesion with the pedestrian network. This has resulted in the past occasional use of mounted police in the neighbourhood, which has also contributed to a perception of reduced safety in the area.

##### Design Solution

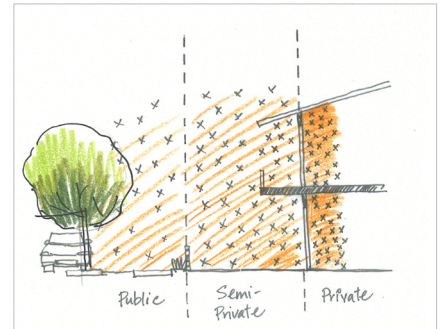
Safety and security and the minimisation of potential conflicts between residents will be a high priority with the Masterplan. The design and management of the Bonnyrigg redevelopment will be undertaken in line with NSW Crime Prevention through Environmental Design (CPTED) Principles. Development will also be addressed by pro-active place management.

The CPTED Principles are:

- Territorial Reinforcement;
- Passive Surveillance;
- Access Control; and
- Ownership and Space Management.

##### Objective

A key objective of the Masterplan is to design to reduce opportunities for crime. The Masterplan will achieve a standard of design that significantly reduces the opportunities for crime in the area.



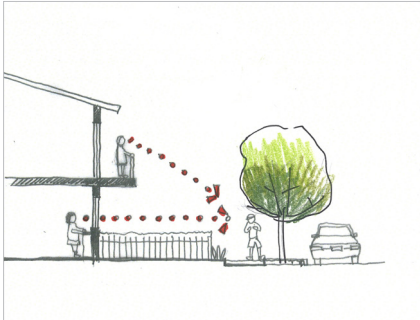
*Territorial Reinforcement*



*Homes with Strong Passive Surveillance and Entry Definition*

## PART THREE STRUCTURE AND CHARACTER OF BONNYRIGG

### Safety and Security



Passive Surveillance



Street Lighting

#### Strategies

The Masterplan will encourage *Territorial Reinforcement* by:

- Defining public, semi public/semi private, and private spaces at their edges through fencing, landscape, and the positioning of buildings. The designs will avoid any ambiguity of ownership, access, and responsibility;
- Designing homes to front all streets, parks and public spaces, increasing the number of “eyes on the street” and discouraging disruptive use of these spaces;
- Enhancing the sense of pride and ownership of the area by residents through community programs such as community gardens, public art designed by the locals, etc; and
- Provide for community integration by increasing socio-economic mix, introducing dwelling design that avoids distinction between private and social housing, and providing public spaces (streets, pathways, parks, and other facilities) that encourage formal and informal opportunities for residents to interact in positive ways.

The Masterplan will incorporate *Passive Surveillance* by:

- Ensuring all public areas will have passive surveillance from adjacent homes or activities and appropriate levels of lighting where required ensuring this at night;
- Homes that front the street/parks/ public spaces will have habitable rooms such as living rooms, balconies and kitchens facing these areas;
- All areas will have passive surveillance from a number of sources to prevent an offender from being able to identify who may have reported the crime and thus reducing opportunities for witness intimidation; and
- Fencing on the street or park frontages will be visually permeable and vegetation will be selected that complements passive surveillance of all public areas.

## PART THREE STRUCTURE AND CHARACTER OF BONNYRIGG

### Safety and Security

The Masterplan will Control Access by:

- Reducing opportunities for car related crime through traffic management. The Masterplan road layout and design minimises places of concealment and maximises appropriate surveillance opportunities of public spaces and areas of congregation;
- Ensuring there are no areas of entrapment for pedestrians or vehicles.
- Ensuring that when cul-de-sacs are built they will be short with clear sight lines from their end to the adjoining street;
- Minimising the number of escape routes from pockets of congregation that may inhibit pursuit of offenders;
- Using building materials and structures (including walls and fences) are to be designed to avoid any “natural ladder” or other access opportunities for a potential offender. Security screens and bars, when utilised, will be integrated as design elements and will not appear to be retrofits, which can imply that an area is unsafe; and
- Dwellings will have clearly defined addresses, visible from the street.

The Masterplan will ensure *Ownership and Space Management* by:

- Making who is responsible for the care of all areas unambiguous. Areas will obviously be public or private;
- Ensuring Bonnyrigg Partnerships develops a management system for immediate action after any damage (e.g. a graffiti removal program); and
- Avoiding opportunities for malicious damage and drinking in park areas at night by providing design elements and programming that discourages such activities, such as utilising sprinkler systems at night. Similarly, the malicious damage and inappropriate use of street furniture will be limited, with the provision of bench seats with additional armrests, stainless steel inserts (to deter skateboarding activities), and/or similar design features.



#### 3.12 Staging and Implementation

##### Current Situation

The existing community is cohesive. Residents are largely positive about life in the area and have a strong attachment to it. A majority of the social housing tenants expressed a desire to stay on site during the development.

##### Design Solution

The Masterplan will be completed in 18 stages over 13 years. The challenge with this strategy is to have appropriate demolition and construction management in place that ensures that the residents of the site are not unduly impacted by construction. Stage-by-stage management plans will ensure that:

- Dust, noise and construction vehicle access to the site is controlled;
- Demolition and construction sites are fenced and secure to prevent unauthorised access;
- Existing vehicular and pedestrian access within the site is not unduly affected; and
- Services remain connected to existing private residents and or they are suitably housed off site at their discretion.

The staging follows an adjacent sequencing, in order to minimise disruptions to both existing and new residents.

# PART THREE STRUCTURE AND CHARACTER OF BONNYRIGG

## Staging



Indicative Staging Plan