Bonnyrigg

LIVING COMMUNITIES PROJECT DESIGN REPORT

ISSUE:C

PREPARED FOR BECTON + BONNYRIGG PARTNERSHIPS

PROJECT NO. 07502505.01

DECEMBER 2007

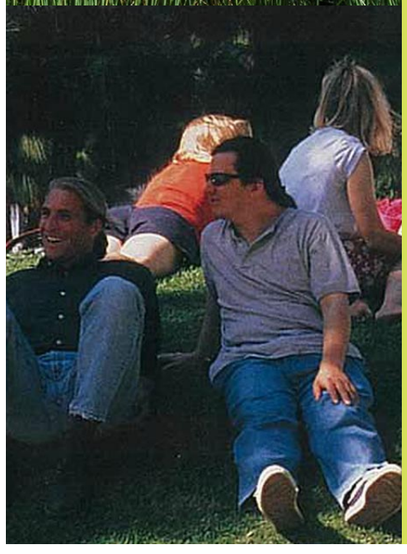
EDAW | AECOM

CONTENTS

SECTION 1
MASTERPLAN

SECTION 2
STAGE 1 DEVELOPMENT APPLICATION AND PRIVATE LOTS

SECTION 3
EARLY WORKS STRATEGY



01

MASTERPLAN

Aerial View of Site

Introduction

This report aims to communicate the processes and outcomes for design work completed by EDAW for the public open space and streetscapes at the Bonnyrigg Living Communities project.

The Bonnyrigg Master Plan site is an 81 ha site within Fairfield in the south western suburbs of Sydney that was developed by the then NSW Housing Commission as a large, concentrated public housing estate in the late 1970's.

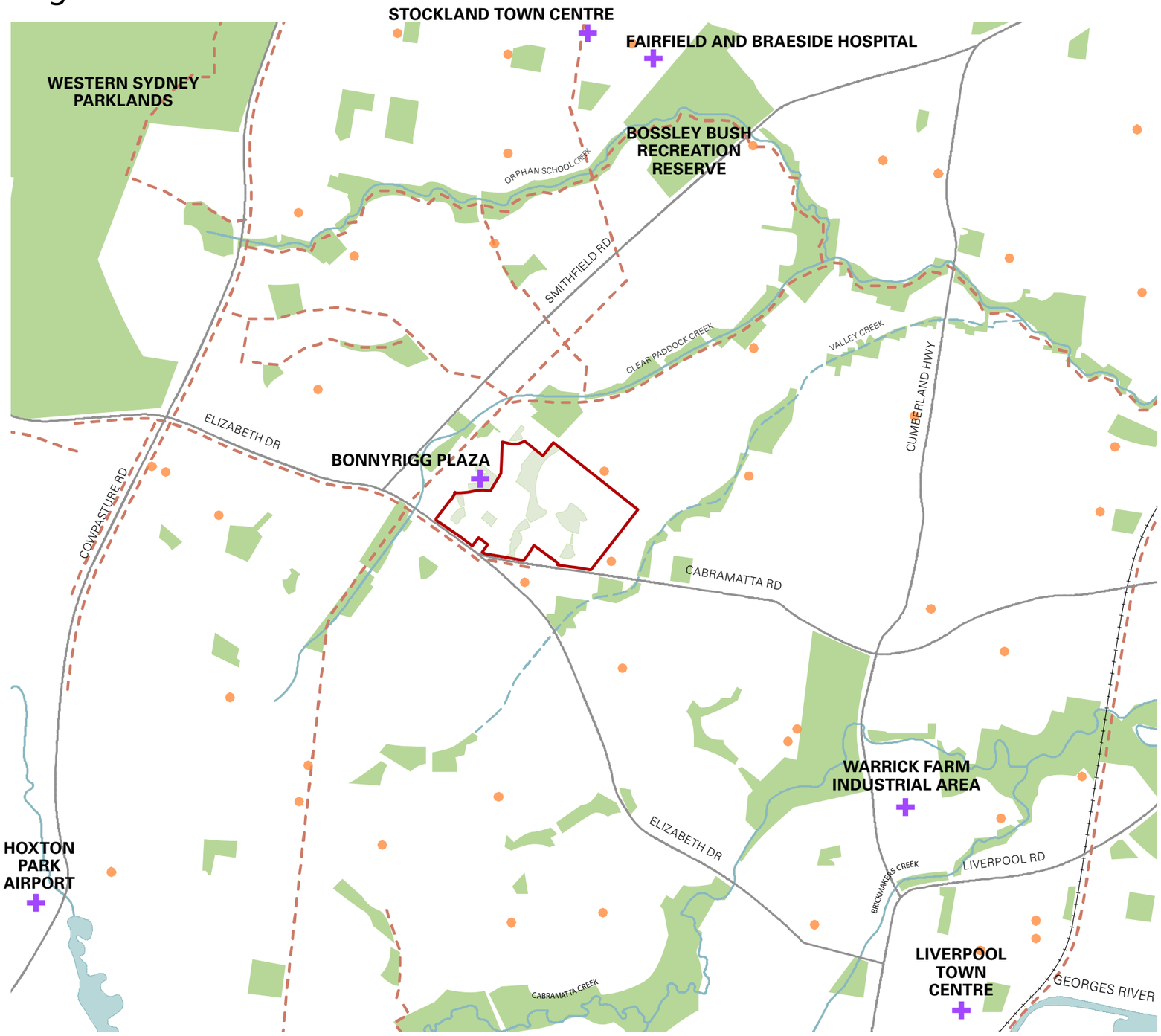
EDAW were commissioned by Becton as part of a large consultant team to provide design and technical landscape architectural advice to the public, private partnership (PPP) of Bonnyrigg Partnerships.

The Bonnyrigg Renewal Scheme comprises the renewal of the existing public housing land commonly known as Bonnyrigg Estate and is being undertaken by Bonnyrigg Partnerships in a Public Private Partnership with the Department of Housing. Bonnyrigg Partnerships will be responsible for the physical renewal of the estate, including the integration of high quality public and private housing, public parks and community facilities, as well as the provision of tenancy and facilities management services for a 30 year period.

Over the year of 2007 following the successful bid, EDAW worked on both the Part 3A application and Stage 1 development application with Urbis, Hughes Trueman and others. This report brings together those two applications and an Early works Package for Stage 1 as a compendium of EDAW work to date.

The aims of the Bonnyrigg renewal are to achieve physical redevelopment of the area to increase liveability, general security and safety of the area by providing better surveillance to public areas, replace the existing public housing dwellings with a mix of new public and private homes, and improve access to opportunities and services for the residents of Bonnyrigg.

Regional Context Plan



Legend

- Site boundary
- Green space
- Place of regional interest
- School
- Off-road cycle path

Landscape Vision

GENERAL

- To enhance and make efficient use of open space for recreational and/or ecological function
- To strengthen the visual character of the estate by positively contributing to the public domain
- To respond to a variety of cultural requirements in terms of use and aesthetics
- To adopt state of the art design ideas, principles and materials
- To create environments where people can meet, have fun, exercise, become closer to natural processes and fall in love.

ACCESS AND SAFETY

- To provide easily accessible and safe open space
- To ensure high levels of natural surveillance of open space
- To ensure easy accessibility by emergency service vehicles
- Provide a sense of arrival to key entry points

CONNECTIVITY

- To provide safe functional linkages along streets and in parks between places of activity
- To create linkages between open spaces along the streets inside the site and into surrounding areas by an extensive street tree planting strategy
- To create a legible and functional road network that provides good connections with the surrounding areas

RECREATION

- To provide appropriately located and adequately sized safe open spaces and facilities that support a range of both active and passive uses
- Providing facilities that encourage activity, comfort and safety across generational requirements;

SUSTAINABILITY

- To salvage, stockpile and re-use material from demolished roads and houses to minimise landfill and build upon a recycled aesthetic for the suburb
- To enhance the sustainability of the development by minimising water usage, contributing to biodiversity and enhancing passive energy systems
- Provide for water re-use on existing and future open space
- To retain existing and established mature trees where possible
- Establish ecological connectivity through establishment of riparian and terrestial habitat
- To create a sense of ownership over the public domain and encourage passive surveillance to create community guardianship
- To ensure landscaping has regard to the future functions of the area
- Improvement in the quality and maintainability of the open space assets

Ecological Context

The Bonnyrigg Master Plan area was almost entirely cleared of all vegetation approximately 30 to 40 years ago. The site and surrounding area is highly disturbed and supports less than 10% crown cover, with the only area above 10% crown cover being within St John Park to the north of the site. See Ecological Context Plan opposite.

Recent ecological surveys have concluded that no significant species or habitat are present and no endangered ecological communities or threatened species are likely to occur.

The area would have once represented Cumberland Plain Woodland (probably Shale Plains Woodland) however the vegetation is no longer representative of any native vegetation community due to its high level of disturbance and simplification. The only remaining canopy species are generally within the open recreation/parkland and include Grey Box (Eucalyptus moluccana) and some Forest Red Gum (Eucalyptus tereticornis). These trees have no native understorey and the ground covers under these trees include mown grasses as part of a maintained parkland/recreation area. As there are only few over storey trees remaining the area has limited ecological habitat value.

Through a broad understanding of the site in context of drainage and other remnant vegetation communities the new Bonnyrigg estate can assist in forming ecological connections using the appropriate plant material.

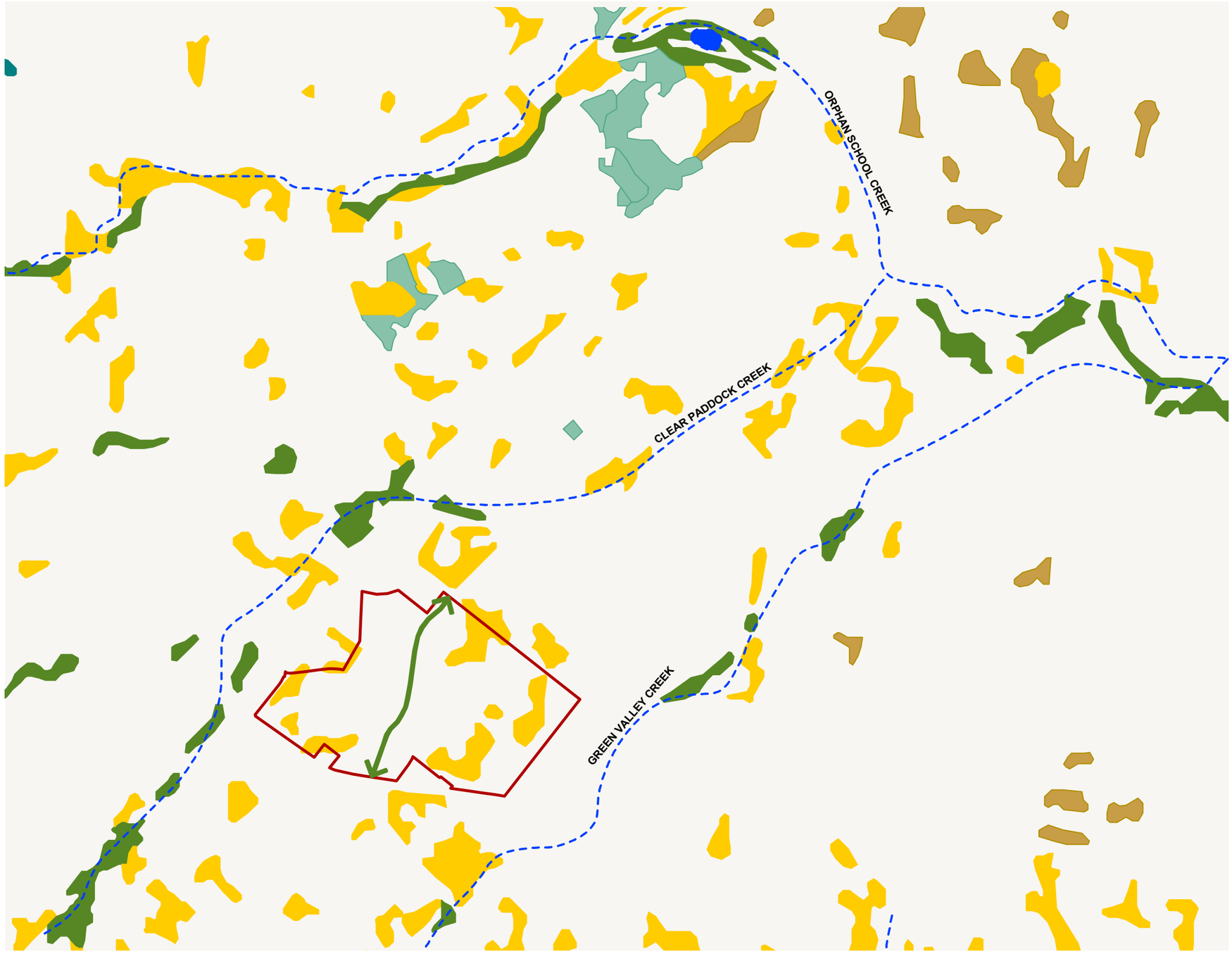
OBJECTIVES

- To provide ecological connectivity, function and biodiversity
- To acknowledge vegetation communities remnant to the site and its greater context
- To establish planting schedules that are representative of an appropriate selection of Cumberland Plain Woodland – Shale Plains Woodland and Sydney Coastal River Flat Forest – Alluvial Woodland
- To reference remnant ecologies in the formation of landscape characters
- To procure local provenance plant material
- To reference contextual drainage patterns with site WSUD initiatives
- To establish monitoring and maintenance initiates that support establishing ecologies

PRINCIPLES

- Proposed planting schedule shall be representative of Cumberland Plain Woodland – Shale Plains Woodland and Sydney Coastal River Flat Forest – Alluvial Woodland
- Preserve remnant site vegetation where possible
- Source and store local provenance material for procurement of plants through site nursery
- Monitor and maintain landscapes to establish and enhance ecological health

Ecological Context Plan - Species typical of the area



Legend

- Site boundary
- Major drainage lines

REGIONAL VEGETATION COMMUNITIES

CUMBERLAND PLAIN WOODLAND
- No. 9 Shale Hills Woodland

CUMBERLAND PLAIN WOODLAND
- No. 10 Shale Plains Woodland

SYDNEY COASTAL RIVER-FLAT FOREST
- No. 11 Alluvail Woodland

OTHER COMMUNITIES
- No. 3 Castlereagh Ironbark Forest
- No. 103 Shale/Gravel Transition Forest

- Proposed integration of Sydney Coastal River-flat Forest and Cumberland Plain Woodland planting along existing drainage line

Overall Landscape Masterplan

Legend

- Existing Trees to be retained
- Street Trees
- Cultural Tree Planting
- Feature Tree Avenue
- Canopy Trees
- Canopy Trees, Shrubs & Groundcovers
- Grasses and Groundcover Planting
- Open playing fields
- Turf
- Creek line and Rain Gardens (Stone battering & gravel bed)
- Detention/Lake
- Bridge
- 2.5m Shareway
- 1.2m Pedestrian path
- Gravel
- Small Shelters
- Terraced viewing area
- Parking
- Overflow parking
- Amenities building
- Playgrounds
- Chess squares
- Entry feature
- Retaining wall
- Soccer Fields
- Existing Basketball Court
- Public Seating
- Overland Swale
- Lighting
- Turf Mounds/Batters
- Stepping stones
- Large Sandstone Rocks

Stage 1 Landscape Plan

Stage 2 Landscape Plan

Stage 3 Landscape Plan

Stage 4 Landscape Plan

Stage 5 Landscape Plan

Stage 6 Landscape Plan

Stage 7 Landscape Plan

Stage 8 Landscape Plan

Stage 9 Landscape Plan

Stage 10 Landscape Plan

Stage 11 Landscape Plan

Stage 12 Landscape Plan

Stage 13 Landscape Plan

Stage 14 Landscape Plan

Stage 15 Landscape Plan

Stage 16 Landscape Plan

Stage 17 Landscape Plan

The Streets Hierarchy

Streets are more than just places for cars and movement. They provide pedestrian and bicycle routes, they assist with the legibility and identity of a place and they provide spaces for daily encounters between residents and neighbours. The Master Plan has a Street Hierarchy that includes:

Local Collector Roads – Tarlington Parade and Bunker Parade will have 11m wide carriageways with provision for on street parking on both sides and tree bay rain gardens to define the parking areas. These roads will also include a shared bicycle and pedestrian path of 2.5m wide to one side and standard footpath to the other. The verge widths will vary between 1m adjacent parks up to 3.5m.

Local streets will have 8m wide carriageways with space for parking cars on one side. These streets will either have footpaths to both sides or a footpath to one side and a shared bicycle and pedestrian path on the other.

Access streets will be used primarily for access to resident's garages, and car courts. They will be designed as a slow speed share way environmental and will therefore not require pedestrian paths. They will have varying carriageway widths from 5.5m wide reducing to 3m where possible to discourage vehicular speed. At some points in the Master Plan it is desirable to have the through vehicular access of these closed. Where this occurs a pedestrian connection is provided through the closure.

Street Hierarchy Plan

The Parks Overview

OBJECTIVES

- To create safe public open spaces, with high level of passive surveillance
- To build upon and review existing qualities of each park setting and provide a balance of varying uses across the estate.
- To provide passive green space to enhance the aesthetics of the estate and contribute to memorable and enjoyable experiences
- To provide for a variety of recreational and sporting opportunities in close proximity to all residents
- To enhance ecological function of the estate through provision of native fauna habitat
- To provide spaces for community expression and engagement
- To create a distinctive identity for the estate
- Build pedestrical networks into and across park's bicycle and pedestrian paths
- Retain existing trees where possible with the location of parks and design
- To create environmental micro climates for the comfort of residents
- Naming of parks is to occur in consultation with the community

PRINCIPLES

- Create visual rewards through location of amenities in highly visible locations, to enhance visual character, identity, surveillance and limit vandalism
- To utilise open space for integrated stormwater management incorporating water sensitive urban design principles
- Parks are to be located on main roads or provide perimeter road address for standard roads
- Parks are to be located central to residential neighbourhood areas
- Visibility across parks should be maintained with limited inclusions of shrub planting or other objects that inhibit site lines
- Use unobtrusive physical barriers to discourage undesired vehicular access to parks
- Pedestrian paths to be located on desire lines as indicated
- Provide shade trees and structures to seating and play areas
- Provide detail grading and retaining systems to allow for levels associated with existing trees to be retained
- All lighting to conform to relevant Australian standards
- Trees are to be planted in mulched garden beds where possible and are to be selected with a clear trunk to 2m
- Plant species are to be indigenous except for 'cultural plantings' as indicated. Seed stock is to be sourced locally and used for generation of all plant material.

VALLY PARK CONCEPT

Vegetated swale concept to central open space (Parks 1, 2, 3, and 4)

- An existing stormwater pipe is to be retained and used for high flow events. All stormwater collected from the estate is expressed above ground in a new vegetated swale. Stormwater enters the swale through the horseshoe shaped raingardens. High flows above the existing stormwater pipe capacity will discharge and travel overland.

Park Location Plan

Legend

1 Entry Park – Stage One – Passive

2 Lower Valley Creek Sports Park – Active

3 Valley Creek Community Centre Park – Active

4 Upper Valley Creek Park – Passive

5 Bonnyrigg Avenue Entry Park – Passive

6 Village Park – Passive

7 Forest Park – Active

8 Hilltop Park – Active

9 Junior Play Park – Passive

Note:
Naming of parks to be developed in consultation with the community.

Site View Analysis

Open Space Program

The current open space areas and facilities in Bonnyrigg are largely based on the Radburn approach to development, resulting in large amounts of open space being under utilised, unsafe and of a size that cannot be appropriately managed. The result is a large quantum of open space with low levels of embellishment and limited variety of activities.

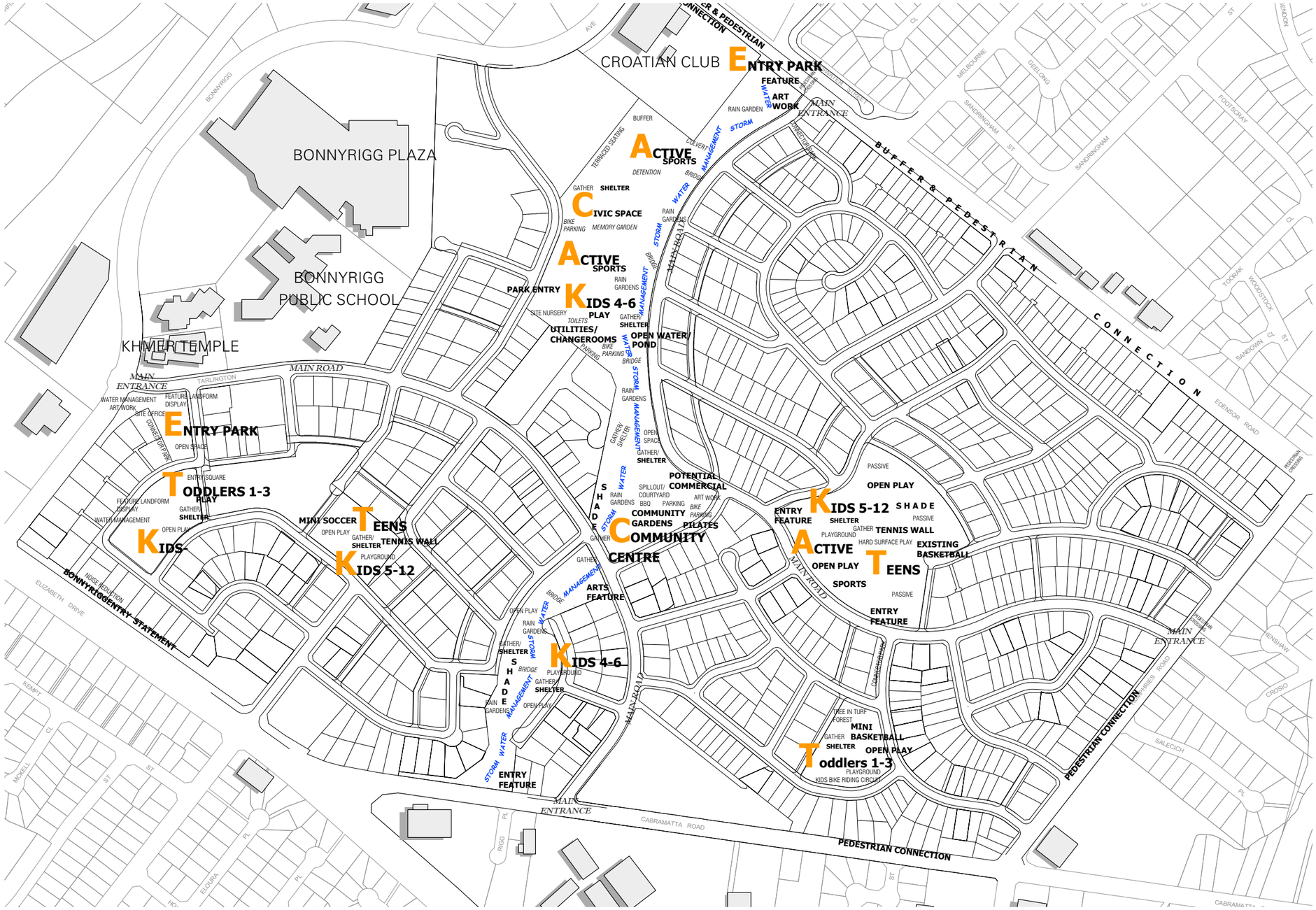
The existing urban pattern within the estate is defined by the current open space configuration. The result is an estate that is largely divided into three sections, north, east and west. Pedestrian and cycle ways within the estate are located primarily within the myriad open space areas.

The design approach is to rationalise the open space and provide facilities with new opportunities for passive and formal recreation. Greater density will help provide a new focus for open spaces and parks, with new facilities, better access, and improved streetscape resulting in a better public realm.

Summary of Proposed Recreational Facilities

	Existing	Proposed
Site nursery	0	1
Amenities building	0	1
Bus shelters	0	4
Full-sized soccer field	1	1
Junior/informal/1/2 soccer field	1	3
Basketball court	2	1
1/2 basketball court	0	2
Tennis wall	0	2
Handball court	0	1
Bicycle circuit	0	1
Multi-use hard stand	0	1
Kick-about space	0	5
Play equipment	0	6
Shade structures	0	8
BBQ areas	0	1
Seating	Unknown	45
Bubblers	0	2

Program Analysis Plan



Circulation

Bonnyrigg currently has segregated movement networks with low amenity resulting in an overemphasis on vehicle movements and access. Vehicle movements and pedestrian movements are separate. Bonnyrigg is characterised by poor quality pedestrian corridors through the open spaces with backs of houses and minimum passive surveillance. A street network exists that separates Bonnyrigg into two halves east and west with a network of loops and cul-de-sacs.

This creates the following issues;

All facilities surrounding Bonnyrigg turn their addresses away from the pedestrian movements and towards vehicular entrances. Leaving the pedestrian connection to link to the back of buildings and in other cases through service spaces.

The movement network (pedestrian, cycle, vehicle and public transport) is illegible to someone who is unfamiliar with it.

The pedestrian areas are perceived to be unsafe.

Overall these issues result in discouragement of walking. Other problems also arise such as difficulties for way finding, Emergency Services and others looking to locate addresses and facilities within Bonnyrigg.

The design approach is to integrate the pedestrian and cycle back with the vehicular and to encourage the surrounding facilities to integrate with the pedestrian network. The related objectives, principles and design strategies developed to deliver this are detailed in the following sections.

OBJECTIVES

- Create a safe 'pedestrical' system (pedestrian and bicycle network) to promote active transport and a healthy community
- Provide a network of connected shareways to promote walking and bicycle use and safety. Network to connect to site features and broader destinations and networks
- Encourage 'street life' through provision of meeting points in parks readily accessible through the pedestrical network
- To provide equal access for all both in the public domain and access to private lots

PRINCIPLES

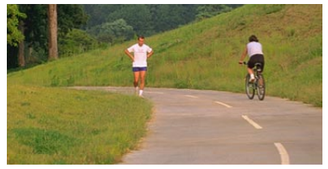
- Locate shareways where possible and practical to enhance connectivity to parks and other destinations and to minimise road crossings. Shareways to be located to one side of road only.
- Footpaths are to comply with AS1428.1 (2001) and AS1428.2-5 (1998) and are to be continuous with smooth transitions in level. Pram ramps are to grade down to road level.

CONTROLS

- Minimum of two paths to each street (one to both sides)
- Shareways to be 2.5m wide brushed concrete
- Standard path to be 1.2m wide brushed concrete
- Pathways to be generally located 600mm off boundary





Pedestrian and Bicycle Connection plan

Legend

- Shared pedestrian / cycleway path in road reserve
- Pedestrian pathway in road reserve
- Shared pedestrian / cycleway path in park
- Pedestrian pathway in park
- Existing pedestrain path
- Existing RTA cycle path
- Existing off-road cycle path
- Ⓑ Proposed bike parking

WSUD Intergration

OBJECTIVES

- Preservation of existing topographic and natural features, including drainage lines.
- Incorporation of water sensitive urban design principles of retention and bio-filtration to improve quality of storm water run off.
- Protection of surface water and groundwater sources.
- Integration of public open space with stormwater drainage corridors, maximising public access; and
- Passive recreational activities and visual amenity.

PRINCIPLES

- To adopt passive irrigation where possible for vegetation especially street trees
- Minimising impervious area;
- Minimising use of formal drainage systems (eg. pipes);
- Encouraging infiltration (where appropriate); and
- Encouraging stormwater re-use.

CONTROLS

- Roadside tree bays to form rain gardens to collect road runoff prior to discharge to a piped system.
- Piped systems to drain through a GPT prior to discharge.
- Piped outlets to Tarlington reserve to discharge above ground to rain gardens or linear Vegetated Swale.
- Potable water demand reduction via reticulated recycled water supply; and
- On-site detention to limit discharges to the pre-development rates.
- All street kerblines on parks are to be broken to allow infiltration into turfed buffer zones.
- Rain gardens and vegetated swales to provide bio-retention.

Vegetated swale concept to central open space (Parks 1, 2, 3, and 4)

- An existing stormwater pipe is to be retained and used for high flow events. All stormwater collected from the estate is expressed above ground in a new vegetated swale. Stormwater enters the swale through the horseshoe shaped raingardens. High flows above the existing stormwater pipe capacity will discharge and travel overland.

Rain garden between formal parking - Diagram showing water movement

WSUD and Water Management Plan

Legend

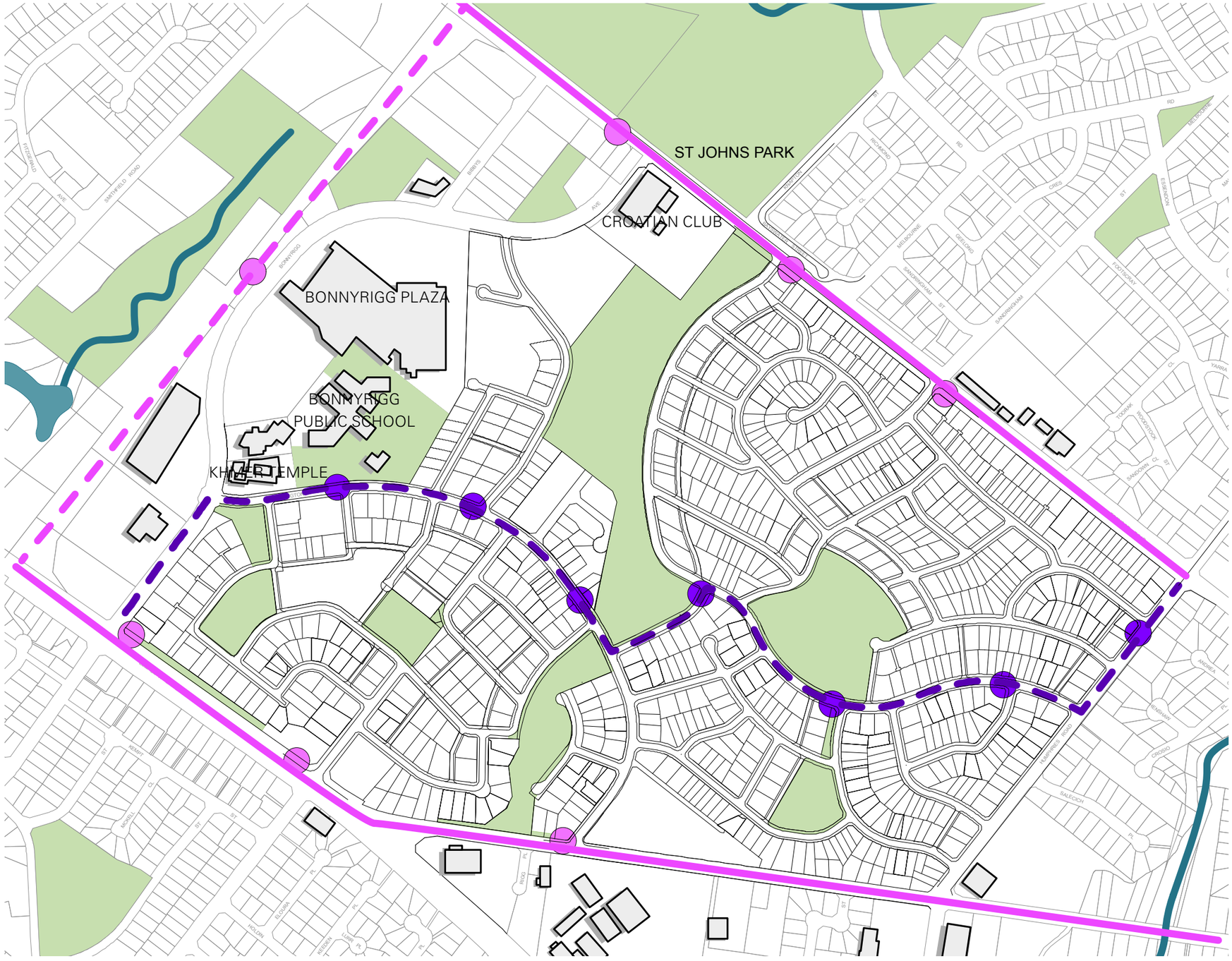
- Proposed raingardens on existing roads
- Proposed raingardens on new roads
- Proposed swale on park edge
- Passive Irrigation (Raingardens merge)
- GPT – Proposed Gross Traps (refer to Engineer's drawings
- Existing drainage (offsite) overland flow
- Catchment boundary

Public Transport

PRINCIPLES

- Bonnyrigg is located approximately 24km from the Sydney CBD and has strong public transport links to its two sub-regional centres of Fairfield and Cabramatta as well as the regional city of Liverpool. Bonnyrigg is immediately opposite the Transit way, dedicated fast bus service between Liverpool and Parramatta. In addition the site is well connected with the M7 and the associated Western Sydney Employment Hub and light industrial areas located at Weatherill Park, and Smithfield to the north.
- Bonnyrigg Town Centre does not have a train station but is easy to reach by road and bus. The closest train stations are located in Cabramatta (5km) and Fairfield (6km). Fairfield and Cabramatta are identified as potential major centres under the Metropolitan Strategy and Bonnyrigg has regular bus services to both Cabramatta and Fairfield.
- Fairfield's Town Centre has a heritage train station that is the oldest in Sydney and is serviced by both the Cumberland line (Campbelltown to Blacktown) and the South Line (Campbelltown to City via Granville).
- Cabramatta Town Centre has a train station that is serviced by South Line (Campbelltown to City via Granville), Cumberland Line (Campbelltown to Blacktown), Bankstown Line (Liverpool to Town Hall via Bankstown), and the Inner West Line (Liverpool to Museum Via Regents Park).

Public Transport Plan



Legend

- Proposed deviation bus route
- Proposed future bus route
- Proposed future MOT bus route
- Proposed deviation bus stop
- Proposed future bus stop

Note:
- Refer to SKM Traffic and Transport Study for further transport information
- Bus stops as per Tmap

Tree Masterplan

OBJECTIVES

- To establish a vegetation structure to the site that promotes reduction in the 'urban heat island effect' and creates comfortable micro-climates.
- To create an aesthetically pleasing environment and strengthen visual character of the estate
- To enhance the vegetation communities endemic to the site
- To promote a sense of hierarchy and identity in streets
- To provide ecological connectivity, function and biodiversity
- To promote plantings of cultural relevance to the varied language groups
- To form linkages through the use of 'ribbon' plantings
- To utilise passive irrigation where possible
- To maximise tree planting opportunities and maintain Bonnyrigg as a 'green and leafy' suburb

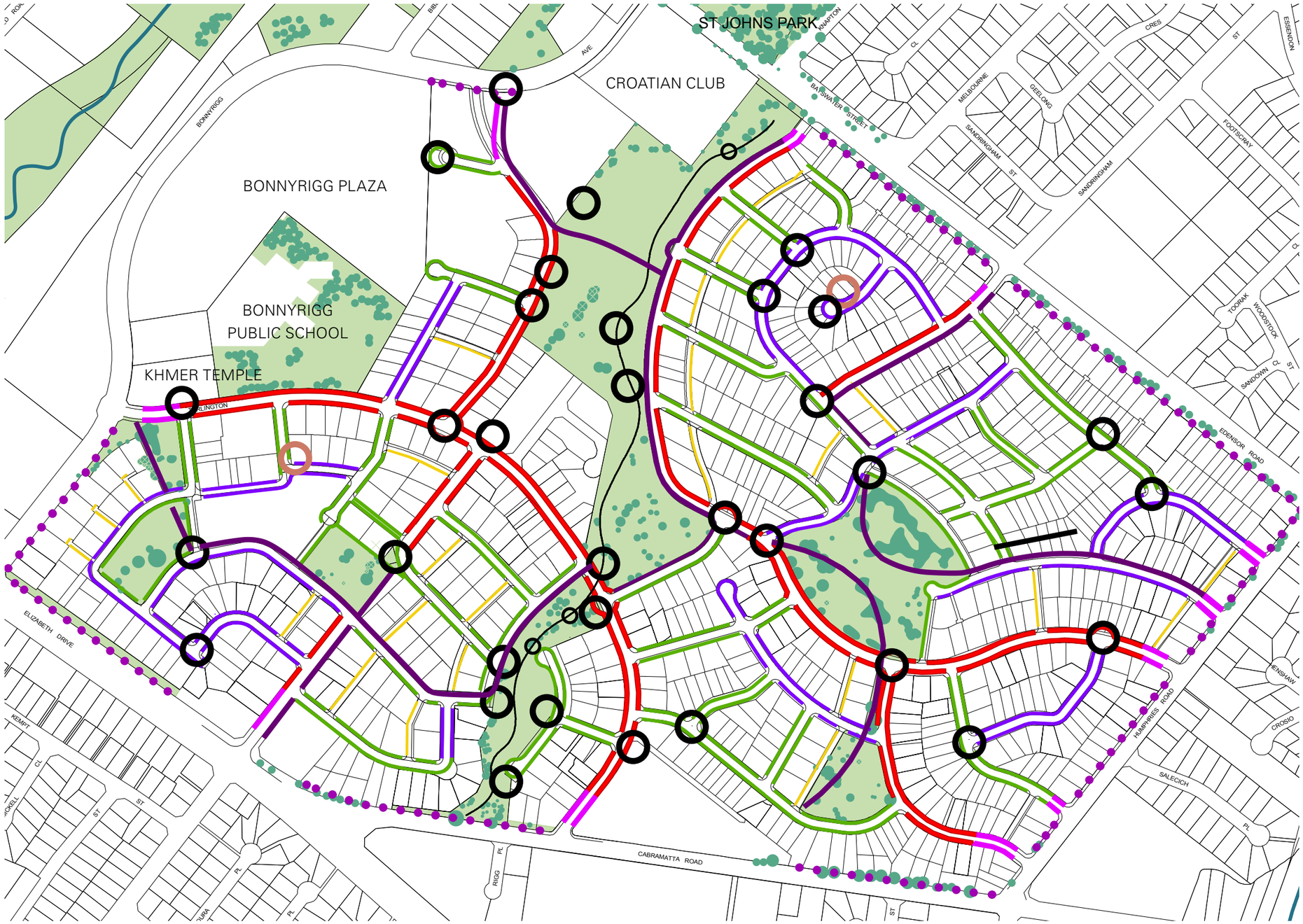
PRINCIPLES

- Use appropriately sized trees to meet scale requirements of each street
- Street tree plantings to be coordinated with underground services, lighting, traffic plan and driveway crossovers
- Retain existing trees where possible as part of streetscape planting
- Coordinate tree spacing and location with private lot tree planting to avoid large gaps between canopies
- Link open spaces and community meeting points with 'ribbon' planting to form an estate wide orientation and place making identity
- Use deciduous species to provide winter solar access to lots as necessary

CONTROLS

- Street trees shall be planted on both sides of all streets except Access place
- Locate 'cultural plantings' in formal groupings or strategic locations as feature trees to provide cultural interest and a sense of place.
- Adopt a copsing approach to street tree planting except at entries. Copsing of trees shall be no closer than 1m apart and no further than 15m apart. Group in ones, twos and threes only.
- Only use formally spaced alley planting to designated entry points to Bonnyrigg, and along park edges as indicated.
- Use nominated species as shown in species list and to areas located in the street tree master plan.
- Street trees located in rain gardens to obtain passive irrigation from stormwater runoff.

Tree Master Plan



Legend

- Existing tree to be retained
- Existing tree to be removed (TBC)
- Existing trees of Residence significance to be retained:
  Eucalyptus moluccana
  Melaleuca armillaris
- Cultural plantings:
  Brachychiton acerifolius
  Lagerstroemia indica 'Natchez'
  Ficus macrophylla
  Fraxinus grifithii
  Jacaranda mimosifolia
  Malus x floribunda
  Phoenix dactylifera or native equivalant
  Prunus serrulata
  Pyrus ussuriensis
  Sapium sebiferum
  Grevillea robusta
- Cutural planting trail to incorporate Indigenous significant plants
- Ribbon planting:
  (regularly spaced)
  Fraxinus oxycarpa 'Raywoodii'
- Formal collector planting:
  Eucalyptus crebra
  Eucalyptus moluccana
  Eucalyptus tereticornis
  Corymbia maculata
- Copsed collector planting:
  Eucalyptus crebra
  Eucalyptus moluccana
  Eucalyptus tereticornis
  Corymbia maculata
- Copsed contour planting:
  Eucalyptus crebra
  Eucalyptus fibrosa
  Eucalyptus tereticornis
  Eucalyptus eugenoides
- Lane planting:
  Corymbia maculata
  melaleuca styphelioides
- Edge planting (to be detailed as required)

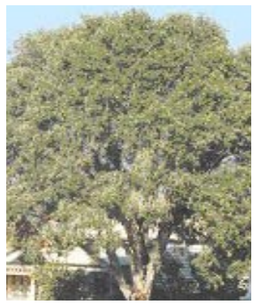

Angophora floribunda

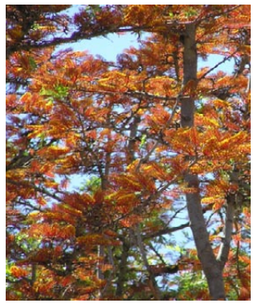

Corymbia maculata


Eucalyptus fibrosa


Eucalyptus tereticornis


Allocasuarina torulosa


Callistemon salignus


Grevillea robusta


Ficus macrophylla


Fraxinus grifithii


Jacaranda mimosifolia


Malus x floribunda


Prunus serrulata

Street Trees

Botanical Name	Common Name	Height
Angophora floribunda	Rough- barked Apple, Boonah	15m
Casuarina glauca	Swamp She- Oak, Grey She- Oak	20m
Corymbia maculata	Spotted Gum	20m
Eucalyptus amplifolia	Cabbage Gum	30m
Eucalyptus crebra	Narrow- leaved Ironbark	15m
Eucalyptus eugenioides	Thin- leaved Stringybark	15 – 25m
Eucalyptus fibrosa	Broad- leaved Ironbark	20m
Eucalyptus moluccana	Grey Box	40m
Eucalyptus tereticornis	Forrest Red Gum, Burringoa	15m
Melaleuca decora	White Feather Honeymyrtle	15m
Melaleuca styphelioides	Prickly- leaved Paperbark	8m
Tristaniopsis laurina	Water Gum	10m

Additional Park Trees

Botanical Name	Common Name	Height
Allocasuarina torulosa	Forest She- Oak	8m
Callistemon salignus	Willow Bottlebrush	3 – 4m

Cultural Trees

Botanical Name	Common Name	Height
Grevillea robusta	Silky Oak	20m
Lagerstroemia indica ‘Natchez’	White Creep Myrtle	10m
Ficus macrophylla	Moreton Bay Fig	50m
Fraxinus grifithii	European Ash	15m
Jacaranda mimosifolia	Jacaranda	12m
Malus x floribunda	Japanese Crab Apple	8m
Phoenix dactylifera or Livistona australis	Date Plam	21m
Prunus serrulata	Cherry Blossom	15m
Pyrus ussuriensis	Manchurian Pear	10m
Sapium sebiferum	Chinese Tallowood	8m

Riparian Trees

Botanical Name	Common Name	Height
Casuarina cunninghamiana subsp. cunninghamiana	River She- Oak	30m
Casuarina glauca	Swamp She- Oak, Grey She- Oak	20m
Livistona australis	Cabbage Tree Plam	24m
Melaleuca decora	White Feather Honeymyrtle	15m
Melaleuca linariifolia	Snow in Summer	8m
Melaleuca styphelioides	Prickly- leaved Paperbark	8m
Tristaniopsis laurina	Water Gum	10m


Casuarina glauca


Livistona australis


Melaleuca decora


Melaleuca linariifolia


Melaleuca stypheloides


Tristaniopsis laurina


Fraxinus oxycarpa 'Raywoodii'


Acacia implexa


Backhousia myrtifolia


Bursaria spinosa


Daviesia ulicifolia


Doryanthes excelsa

Ribbon Trees

Botanical Name	Common Name	Height
Fraxinus oxycarpa 'Raywoodii'	Claret Ash	15m

Shrubs and Accent

Botanical Name	Common Name	Height
Acacia falcata	Hickory Wattle	2.5m
Acacia implexa	Lightwood, Hickory	4.5 -15m
Backhousia myrtifolia	Gray Myrtle, Ironwood	6m
Bursaria spinosa (thorns)	Blackthorn	2.5m
Daviesia ulificifolia (thorns)	Gorse Bitter Pea	1.5m
Doryanthes excelsa	Giant Lily, Illawarra Lily	2.4 – 6m
Grevillea superba		1.8m
Hakea sericea	Needlebush, Silky Hakea	1 – 3m
Kunzea ambigua	Tick- Bush	3.5m
Pultenaea villosa		1.2m
Syzygium australe 'Aussie Southern'	Brush Sherry, Magenta Sherry	8m
Syzygium 'Bush Christmas'	Lillypilly	2m
Syzygium 'Cascade'	Pink Flowering Lillypilly	3m

Groundcovers

Botanical Name	Common Name	Height
Clematis glycinoides	Forest Clematis	15m
Dianella caerulea	Flax Lily	1m
Dianella revoluta	Mauve Flax Lily	1m
Dianella 'Silver Streak'	Silver Flax Lily	0.5m
Eriostemon myoporoides	Long- leaved Waxflower	1.8m
Grevillea 'Royal Mantle'		0.2m
Hardenbergia violacea	Native Sarsaparilla	0.2m
Liriope muscari 'Evergreen Giant'	Evergreen Giant Lilyturf	0.8m
Lomandra longifolia	Spiny- headed Matt Rush	1m
Lomandra longifolia 'tanika'	Spiny- headed Mat Rush	0.7m
Microlaena stipoides var stipoides	Weeping Meadow Grass	1m
Myoporum parvifolium	Creeping Boobialla	0.2m
Themeda australis	Kangaroo Grass	0.5m
Trachelospermum jasminoides	Chinese Star Jasmine	1m
Viola hederaceae	Native Violet	0.3m


Kunzea ambigua


Syzygium australe

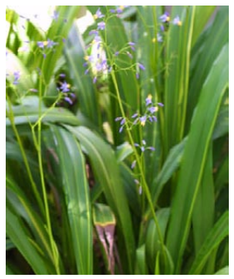

Clematis glycinoides


Dianella 'Silver Streak'


Hardenbergia violacea


Liriope muscari


Lomandra tanika


Dianella caerulea


Dianella revoluta


Imperata cylindrica


Lomandra longifolia


Microlaena stipoides var. stipoides

Native Grasses / Meadows

Botanical Name	Common Name	Height
Aristida ramosa	Purple Wiregrass	1.2m
Aristida vagans	Three- awn Speargrass	0.4m
Austrodanthonia linkii	Wallaby Grass	
Bothriochloa macra	Red Grass	0.3-0.8m
Dianella caerulea	Flax Lily	1m
Dianella revoluta	Blueberry Lily	1m
Dichelachne micrantha	Shorthair Plume Grass	1.2m
Imperata cylindrica var.major	Blady Grass	1.2m
Lomandra longifolia	Spiny- headed Matt Rush	1m
Microlaena stipoides var. stipoides	Weeping Meadow Grass	1m
Themeda australis	Kangaroo Grass	0.5m
Wahlenbergia gracilis	Native Blue Bell	0.2m

WSUD Raingardens

Botanical Name	Common Name	Height
Carex appressa	Tall Sedge	0.8m
Carex inversa	Knob Sedge	0.5m
Carex longebrachiata	Drooping Sedge	
Juncus usitatus	Common Rush, Pin Rush	0.6m
Lepidosperma laterale	Variable Sword Sedge	1m

Swales

Botanical Name	Common Name	Height
Carex appressa	Tall Sedge	0.8m
Carex inversa	Knob Sedge	0.5m
Carex longebrachiata	Drooping Sedge	
Juncus usitatus	Common Rush	0.8m


Themeda australis


Wahlenbergia gracilis


Carex appressa


Carex inversa


Alisma plantago-aquatica


Baumea juncea


Eleocharis acuta


Gahnia aspera


Juncus usitatus


Lepidosperma laterale

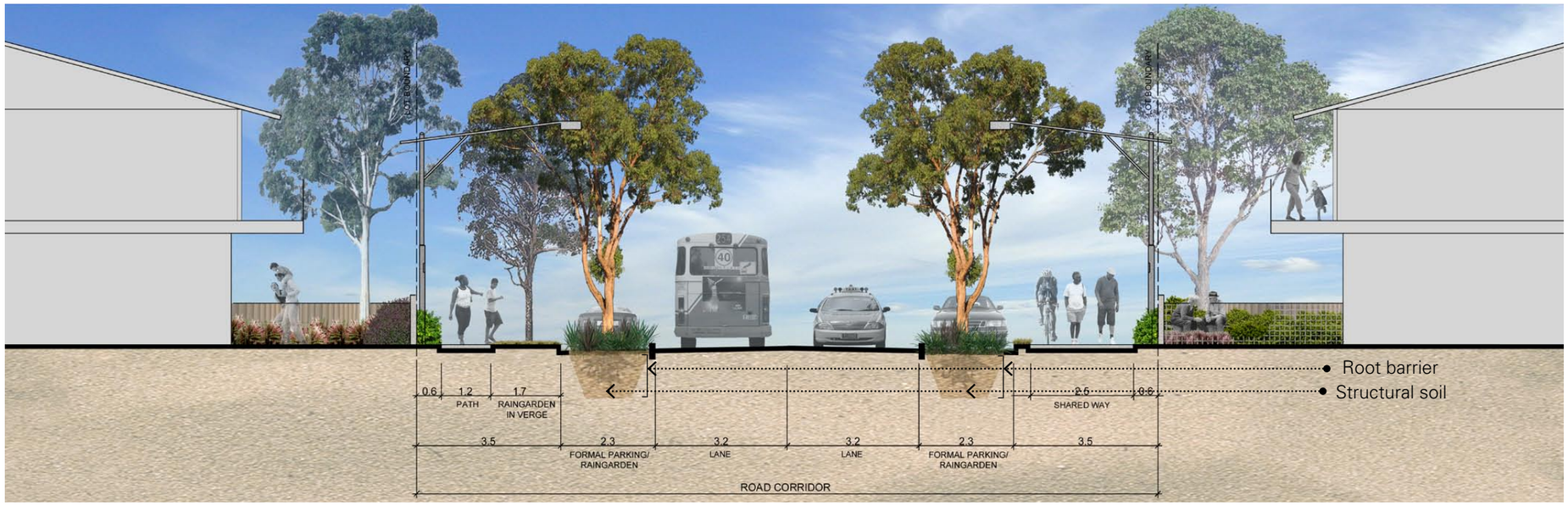

Schoenoplectus validus


Villarsia exaltata

Macrophytes

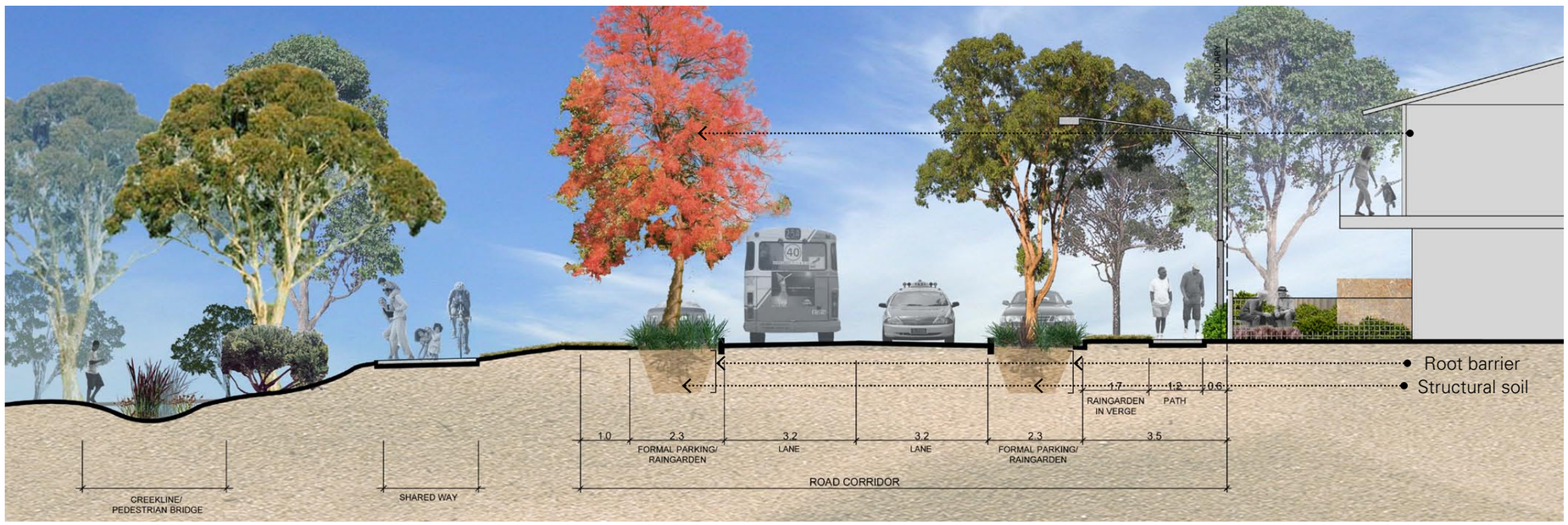
Botanical Name	Common Name	Height
Alisma plantago-aquatica	Water Plantain	0.3m
Baumea juncea	Sedge, tussock swamp twig rush	1m
Carex appressa	Tall Flat Sedge	0.7m
Carex inversa	Knob Sedge	0.5m
Carex longebrachiata	Drooping Sedge	
Eleocharis acuta	Common Spike Rush	1m
Gahnia aspera	Rough Saw- Sedge	1m
Juncus kraussii ssp.australiensis	Sea Rush	
Juncus usitatus	Common Rush	0.8m
Lepidosperma laterale	Variable Sword Sedge	1m
Schoenoplectus validus	River Clubrush, Great Bulrush	3m
Villarsia exaltata	Erect Marsh Flower	1m

Streets in Detail



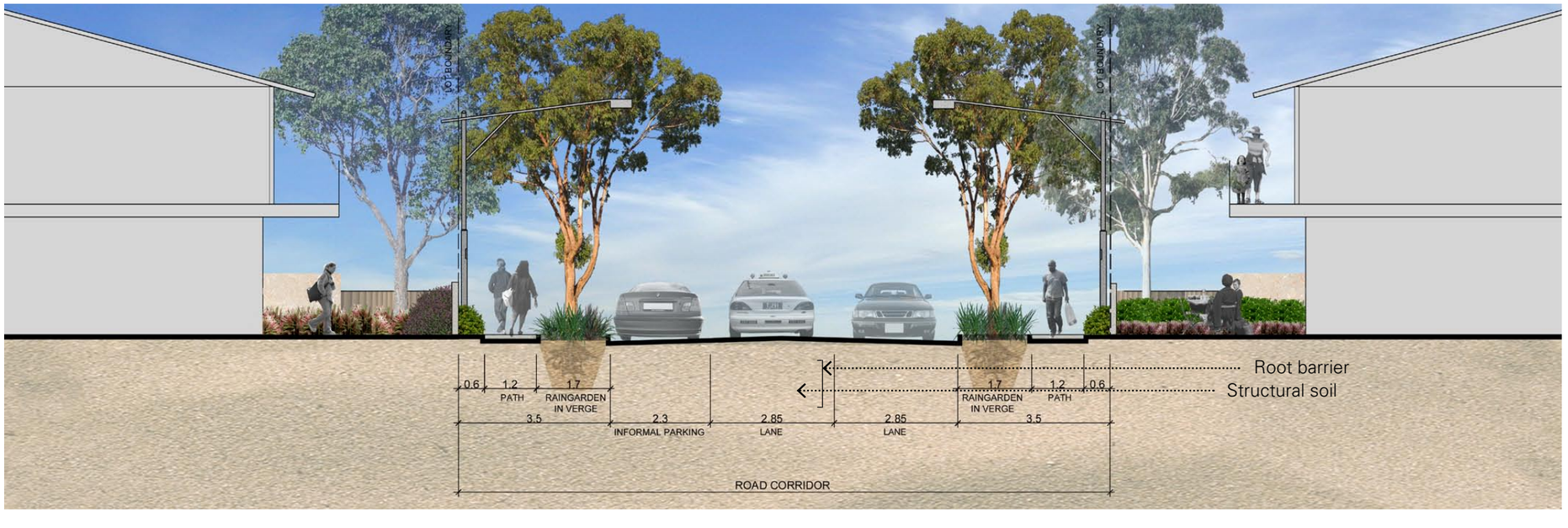
Key Plan

Typical 18m Wide Collector Road



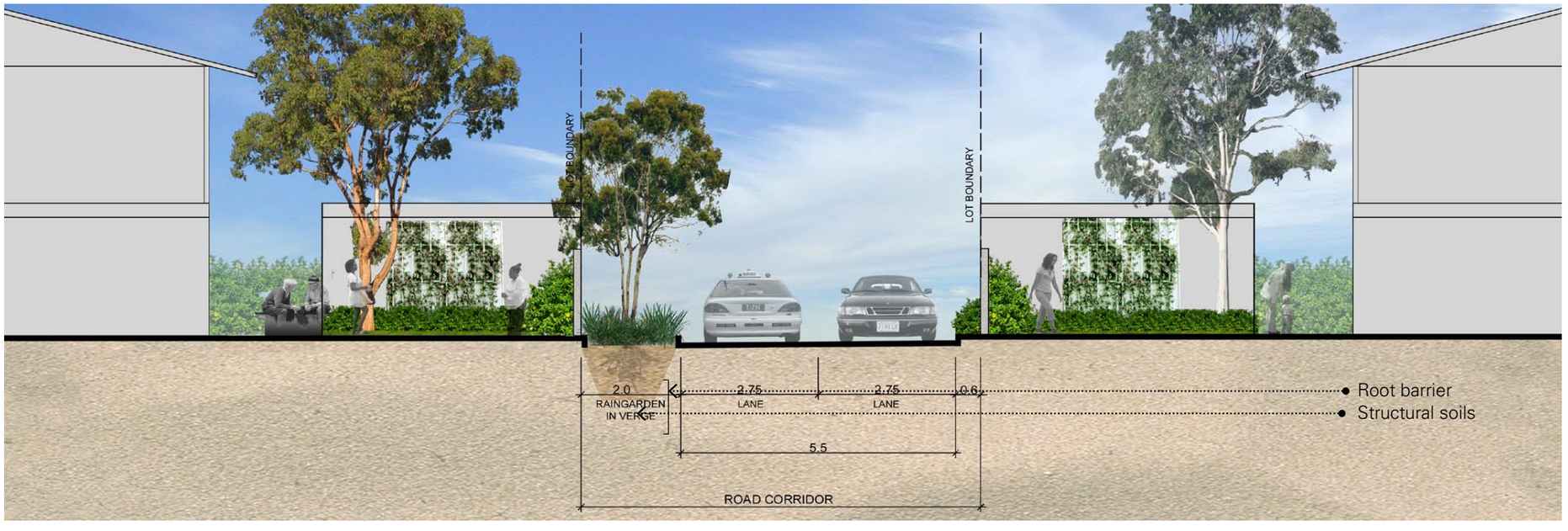
Key Plan

Typical 15m Wide Collector Road

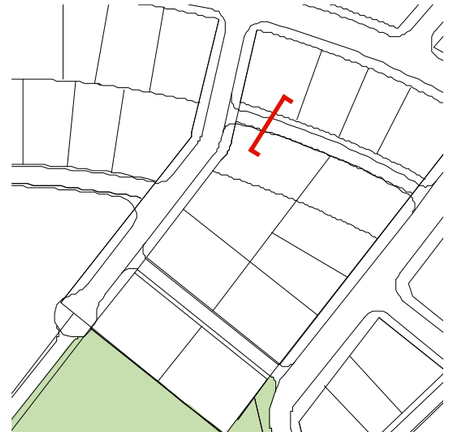


Typical 15m Wide Access Street

Key Plan



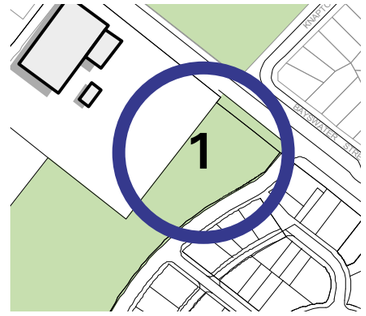
Typical 8m Wide Small Road



Key Plan





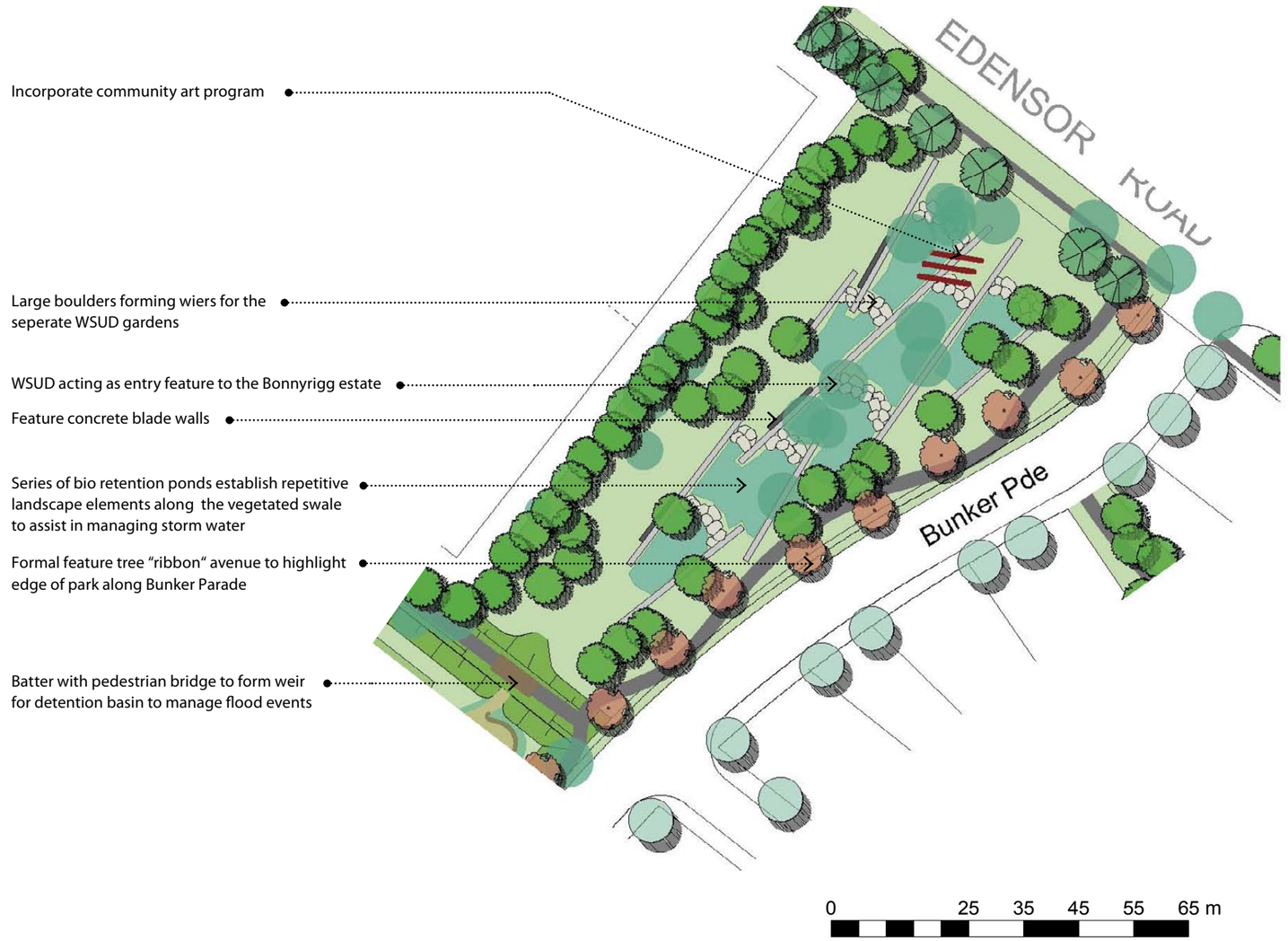


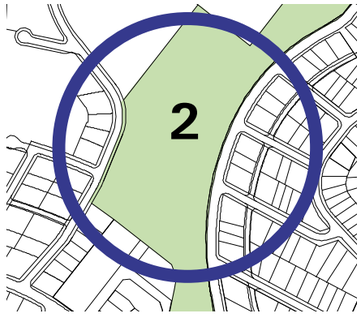
Parks in detail

Park 1

Park 1 at the entry to stage 1 provides an engaging entry landscape and bioretention rain gardens to manage storm water. The Park includes:

- Rain gardens and vegetated swales to collect and treat the estates storm water runoff (seasonally inundated)
- 1.2m pedestrian path ways as shown
- 2.5 m shareways as shown
- Bridges at strategic crossings to facilitate park access and integrate pedestrian and cycle movements across the estate
- WSUD at Bunker/Edensor Road entry creating a visual entry feature and managing water quality
- Feature concrete blade walls protruding from WSUD gardens creating entry interest
- Series of cultural tree plantings to highlight view and pedestrian links (refer tree strategy)
- Individual trees to be kept to a minimum in park areas. Promote tree copses in mulched garden beds
- Ribbon planting to highlight connections through estate
- Public park seating along paths
- Macrophyte planting to designated wet zones associated with vegetated swale







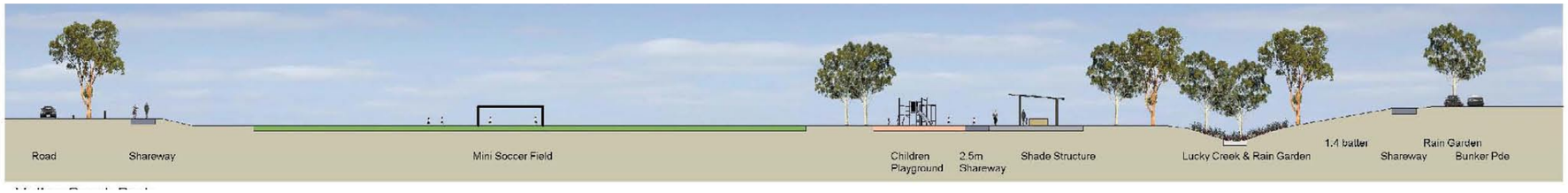


Park 2

Park 2 retains and improves the existing sports facilities. As part of the entire Valley Park system it provides various recreational facilities and ecological function. The Park includes:

- Rain gardens and vegetated swales to collect and treat the estates storm water runoff (seasonally inundated)
- 1.2m pedestrian path ways as shown
- 2.5 m shareways as shown
- Bridges at strategic crossings to facilitate park access and integrate pedestrian and cycle movements across the estate
- Series of cultural tree plantings to highlight view and pedestrian links (refer tree strategy)
- Individual trees to be kept to a minimum in park areas. Promote tree copses in mulched garden beds
- Ribbon planting to highlight connections through estate
- Childrens play equipment (0-4yrs old)
- Well-lit shelters for shade and seating in locations of maximum surveillance
- Civic area to provide facilities for the closely related retirement village offering shelter, formal gardens, seating, retaining/seating walls and viewing platform over sports areas
- Public park seating along paths
- Macrophyte planting to designated wet zones associated with vegetated swale
- Full size and junior soccer field upgrade
- Batters surrounding sport field's act as viewing platforms
- Open turf area for active play
- Amenities building to provide toilets, change rooms, sports storage room and canteen. (subject to detailed brief) – Potential to integrate with site nursery
- Carpark / overflow car park for proposed soccer fields and general park activities

Perspective: Vegetated swale and constructed rain garden



Section A



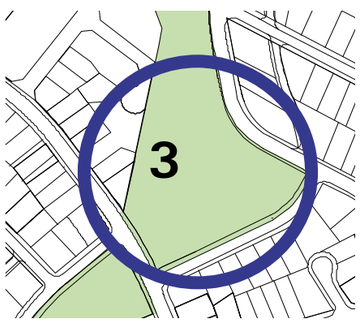




Park 3

Park 3 aims to provide a spill out space and setting for the Multi- purpose Centre. The Park includes:

- Rain gardens and vegetated swales to collect and treat estate storm water runoff
- 2m deep x 0.5m wide (on average) bioswale to form creekline
- 1.2m pedestrian path ways as shown
- 2.5m shareways integrating with the Multi- purpose Centre's path system as shown
- Pedestrian bridges to provide cross park access
- Spill out turf area and shelter associated with Multi- purpose Centre.
- Series of cultural tree plantings to terminate key views
- Individual trees to be kept to a minimum. Promote tree copses in mulched beds
- Ribbon planting to highlight connections through estate
- Public park seating to path ways
- Macrophyte planting to designated wet zones associated with creekline
- Open turf area for active play





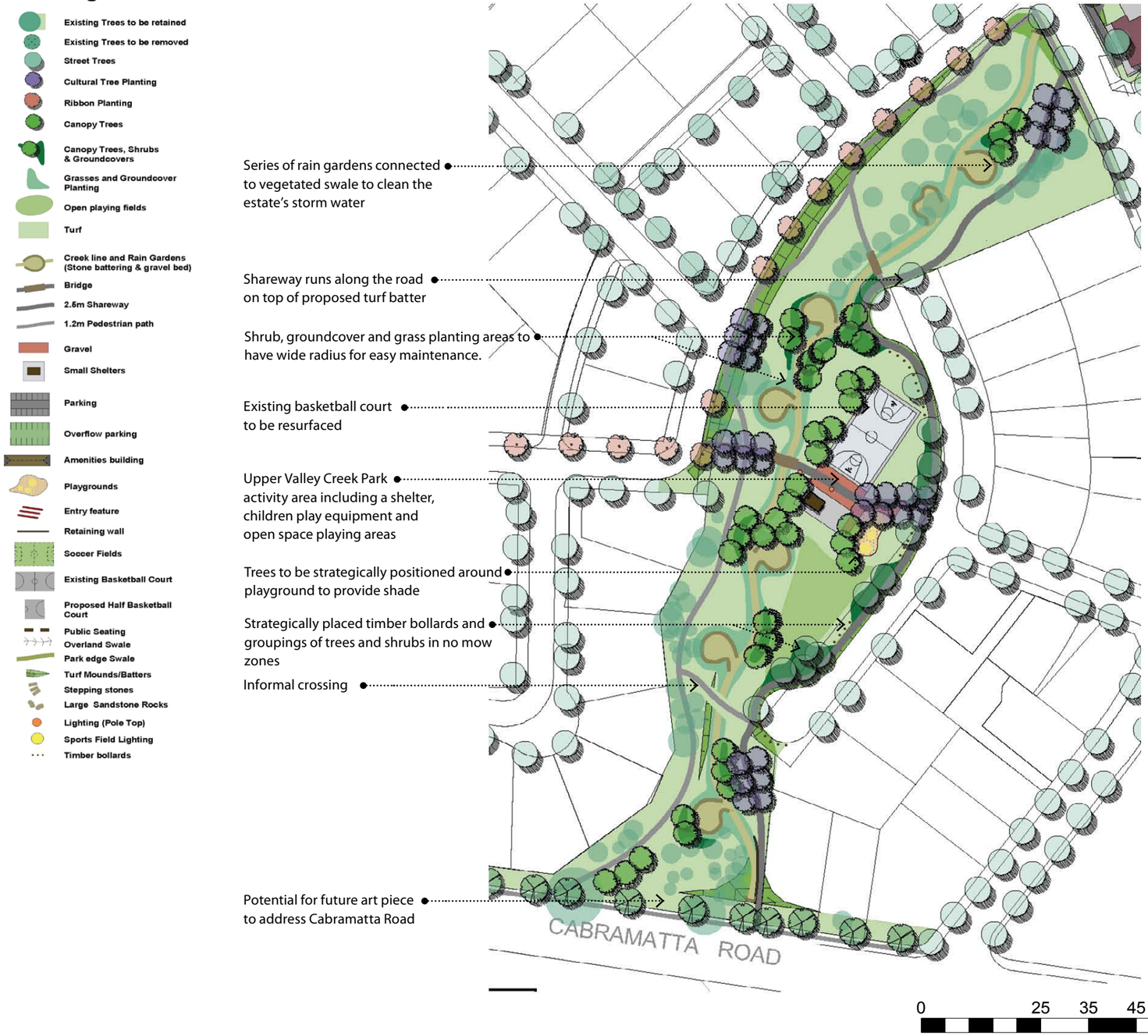




Park 4

Park 4 is the beginning of the parks ecological responses and continues the Valley Creek Park systems various recreational opportunities. The Park includes:

- Rain gardens and vegetated swales to collect and treat estate storm water runoff
- Macrophyte planting to designated wet zones associated with vegetated swale
- 2m deep x 0.5m wide (on average) bioswale to form vegetated swale
- 1.2m concrete pedestrian path ways as shown
- 2.5 m shareways as shown
- Pedestrian bridges to provide cross park access
- Part removal of existing basketball court and upgrade with new half court
- Shelter and seating structure on intersection of view lines from Axon and Harricks Place
- Series of cultural tree plantings to terminate key views and celebrate specific intersections
- Individual trees in park areas to be kept to a minimum. Promote tree copses in mulched beds
- Childrens play equipment (5-10 year old)
- Public park seating on path ways
- Open turf areas for active play
- Retain existing trees where possible



Perspective: Vegetated swale and constructed rain garden

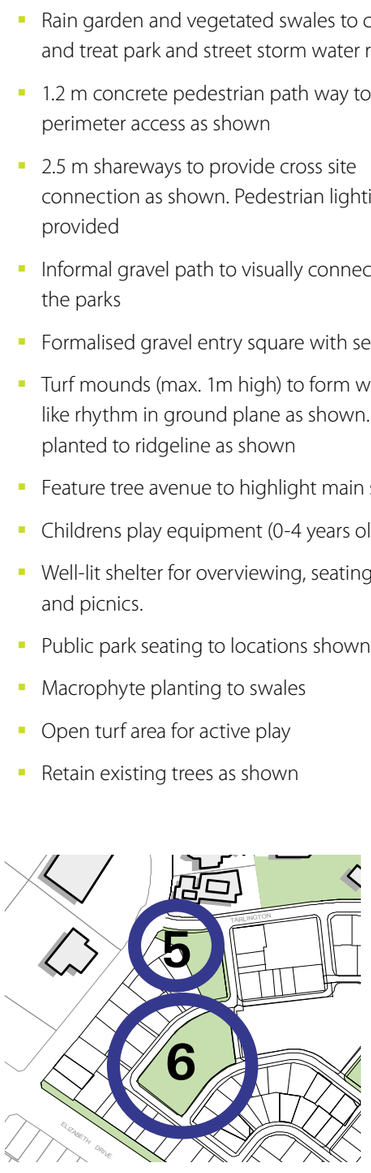


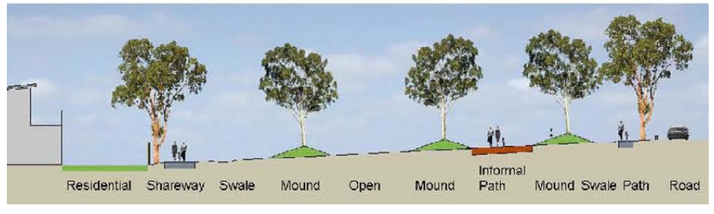


Park 5 & 6

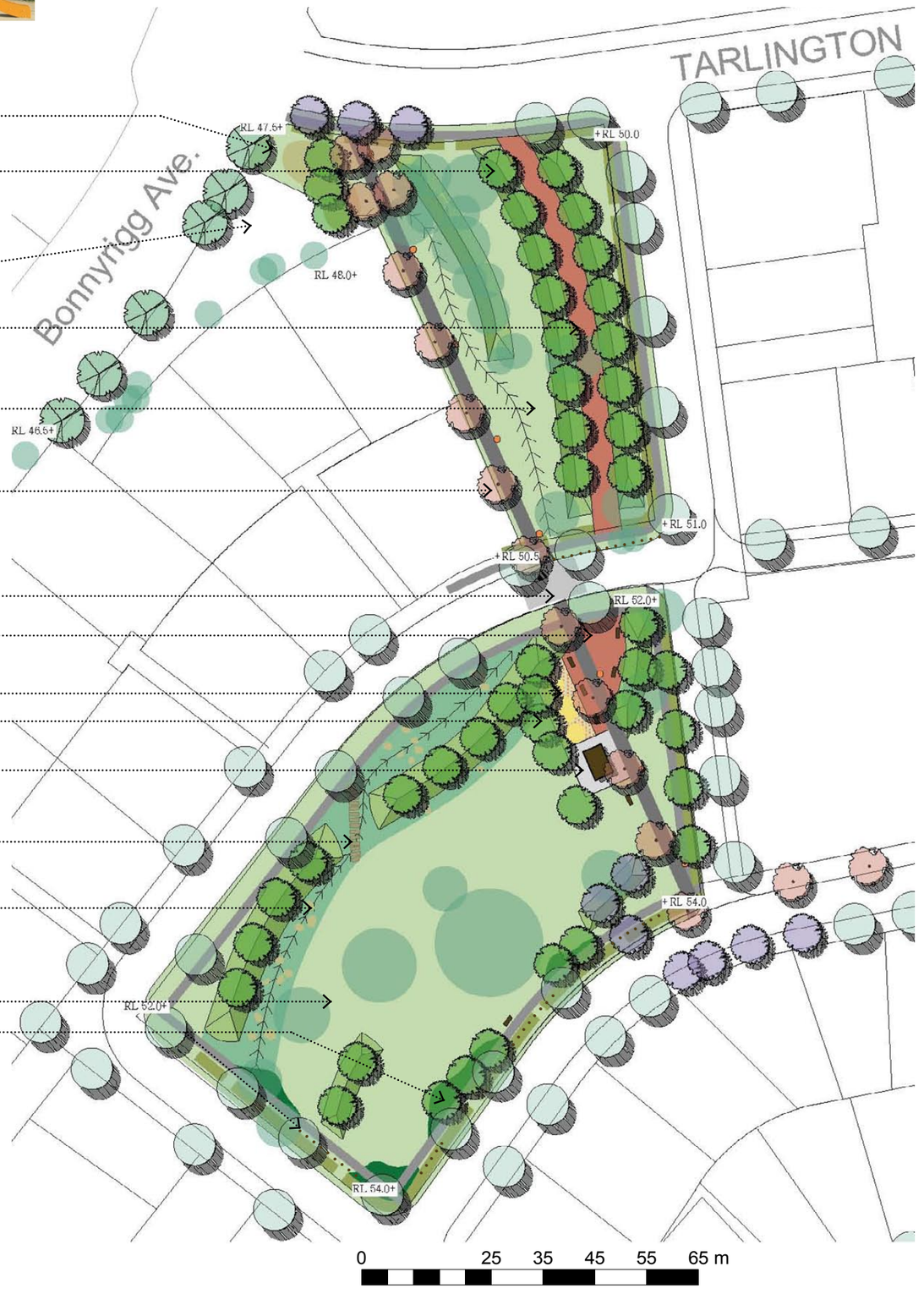
Park 5 creates a pedestrian corridor and entry park while Park 6 keep for toddlers and young children. The parks combine to create a strong link onto Bonnyrigg Avenue and the shopping precinct. The Parks include:

- Rain garden and vegetated swales to collect and treat park and street storm water runoff
- 1.2 m concrete pedestrian path way to provide perimeter access as shown
- 2.5 m shareways to provide cross site connection as shown. Pedestrian lighting to be provided
- Informal gravel path to visually connect across the parks
- Formalised gravel entry square with seating
- Turf mounds (max. 1m high) to form wave like rhythm in ground plane as shown. Trees planted to ridgeline as shown
- Feature tree avenue to highlight main shareway
- Childrens play equipment (0-4 years old)
- Well-lit shelter for overviewing, seating family and picnics.
- Public park seating to locations shown
- Macrophyte planting to swales
- Open turf area for active play
- Retain existing trees as shown





Section A - Bonnyrigg Entry Park







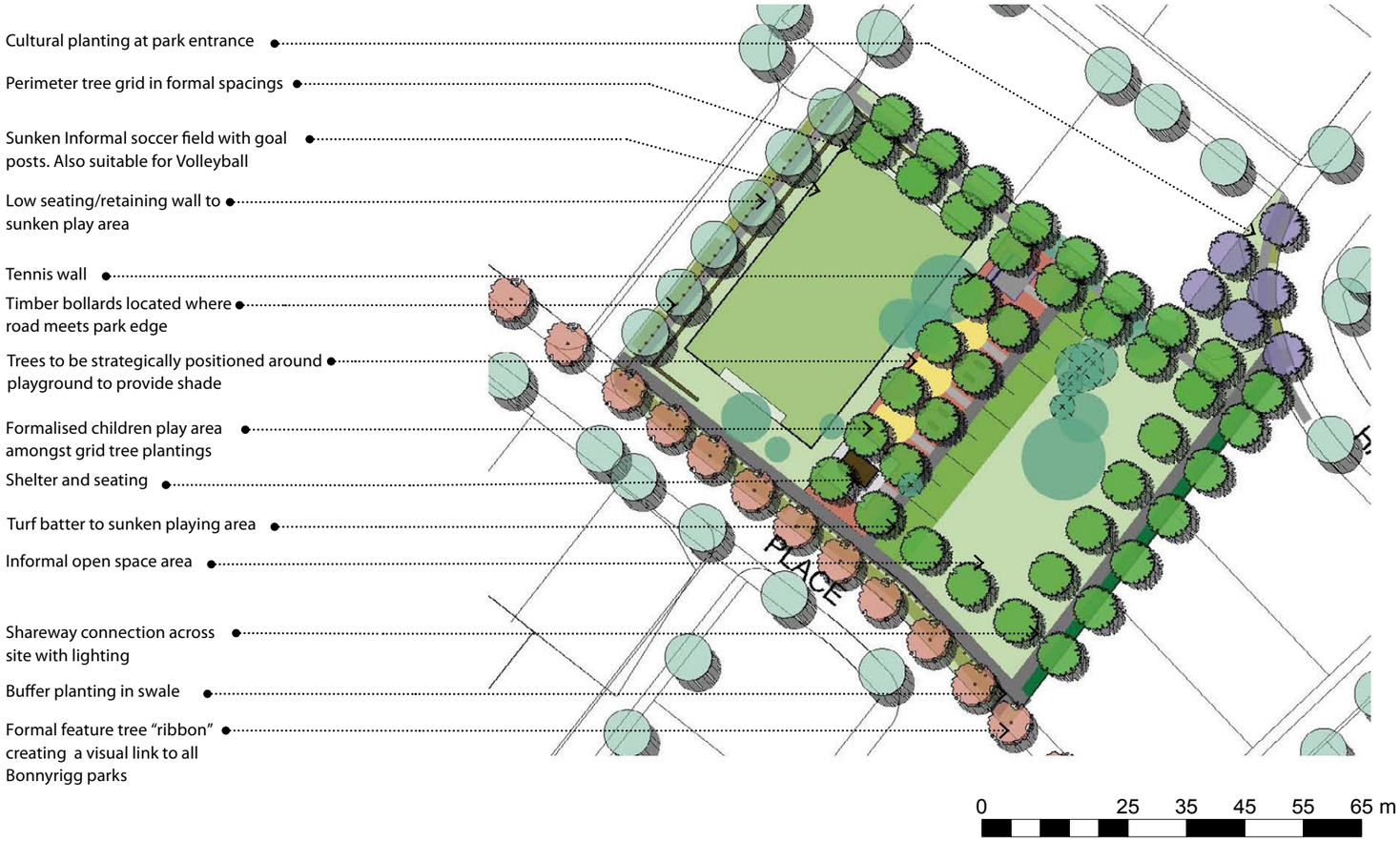


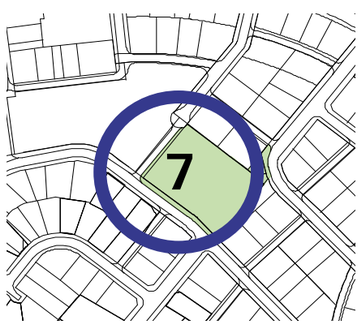
Park 7

Park 7 caters for older children through to parents and the aged, with provision of informal green open spaces, formalised sport areas and children's play equipment all in a structured or formal arrangement.

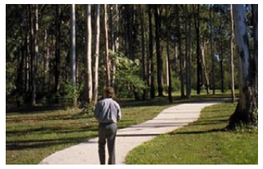
A strong cross site pedestrian link is also featured. The Park includes:

- Open turf areas creating a variety of active play opportunities
- Sunken junior soccer field with goal posts
- 2.5m shareways as shown
- 1.2m pedestrian path ways as shown
- Children's play equipment
- Well-lit shelter/meeting point located axially with Monash Place
- Tennis wall
- Public park seating to locations shown
- Trees to conform to a grid spacing across entire park
- Low retaining wall to assist in retaining level junior soccer field and acting as informal seating wall.





Section A - Forest Park

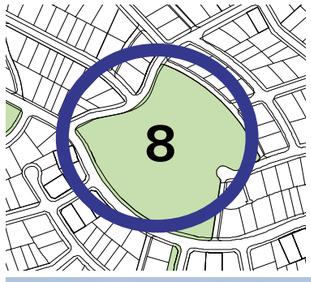


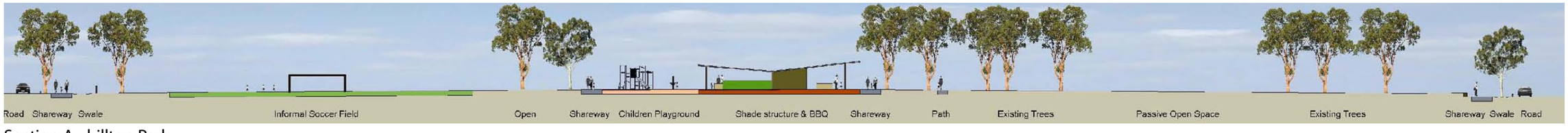


Park 8

Park 8 is a reconfiguration of the existing park at Bonnyrigg's highest point. It will now provide a variety of recreational activities for all ages. The Park includes:

- Retain majority of existing trees
- 2.5m shareways as shown
- Lighting to paths and structures as shown.
- 1.2m pedestrian path ways as shown
- Children and toddlers playground
- Well-lit, large shelter with seating for parent viewing and family picnics
- BBQ
- Tennis wall and hard surfaced area for games such as handball and hop scotch
- Upgrade existing basketball court
- Informal soccer field with goal posts
- Feature tree ribbon to highlight connections through the estate
- Open space playing areas for active children play
- Informal spaces created between existing trees which allow for passive recreation opportunities
- Public park seating





Section A - hilltop Park

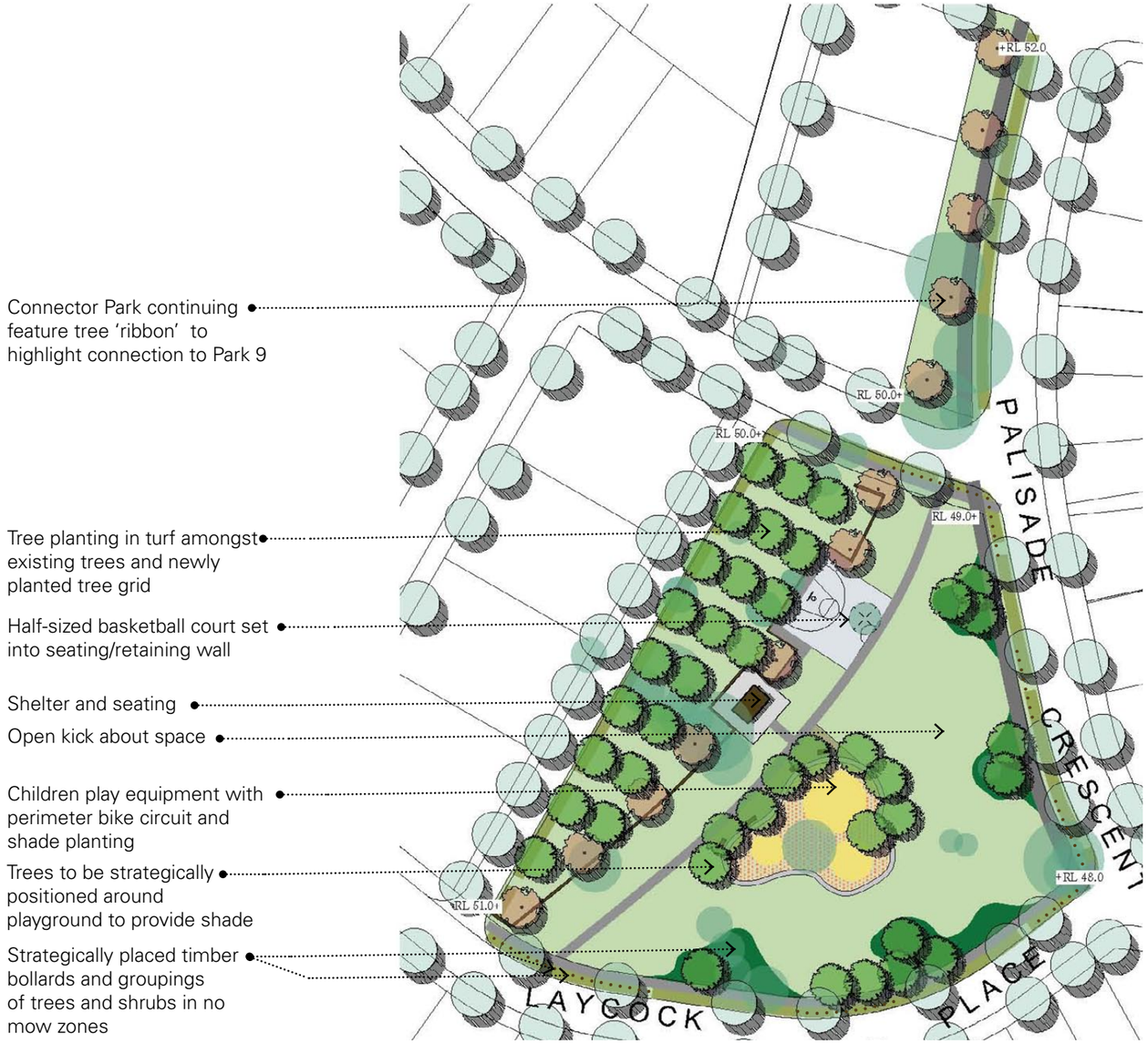


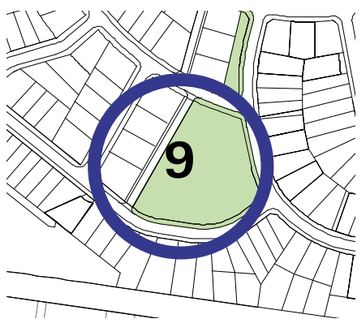


Park 9

Park 9 is designed to facilitate younger children through its open space and recreational facilities. The park also creates a green link to Park 8. The Park includes:

- Retains and increases existing tree groves in turf
- 1.2m pedestrian path ways as shown
- 2.5m shareways as shown
- Feature tree avenue to highlight the desired pedestrian movement and visual connection to Hilltop park
- Children's play equipment and bike circuit (0-6 years old)
- Shelter for gathering and seating
- Public park seating to locations shown
- Basketball half court
- Low retaining wall to manage level change in the park and strengthen feature tree 'ribbon'. Also acts as seating wall
- Open turf area for active play





Junior Park

Section A - Junior Park

Shade Structures

OBJECTIVES

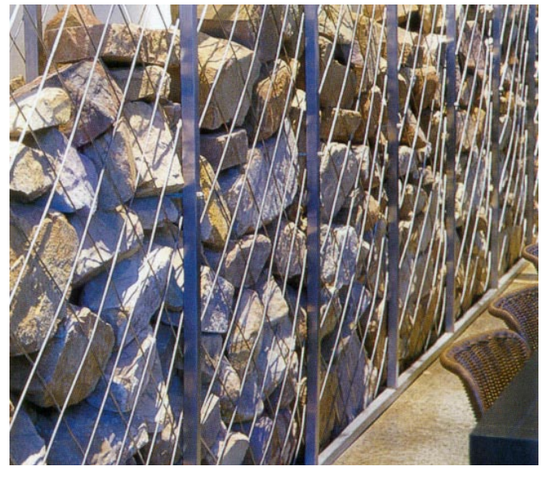
- To provide places of shelter and rest at locations in the public domain that reinforces surveillance, are highly accessible and provide a visual character and identity for the estate.
- To build upon the character of the estate through repeated use of sympathetic materials and designs (line, colour, texture and form) that form a consistent visual language across various site objects e.g. furniture, shade structures, bridges and the like.
- To provide a variety of shelters suited to various uses.
- To provide structures in the public domain that support the functioning of sporting and general recreational use.
- To provide community meeting places.

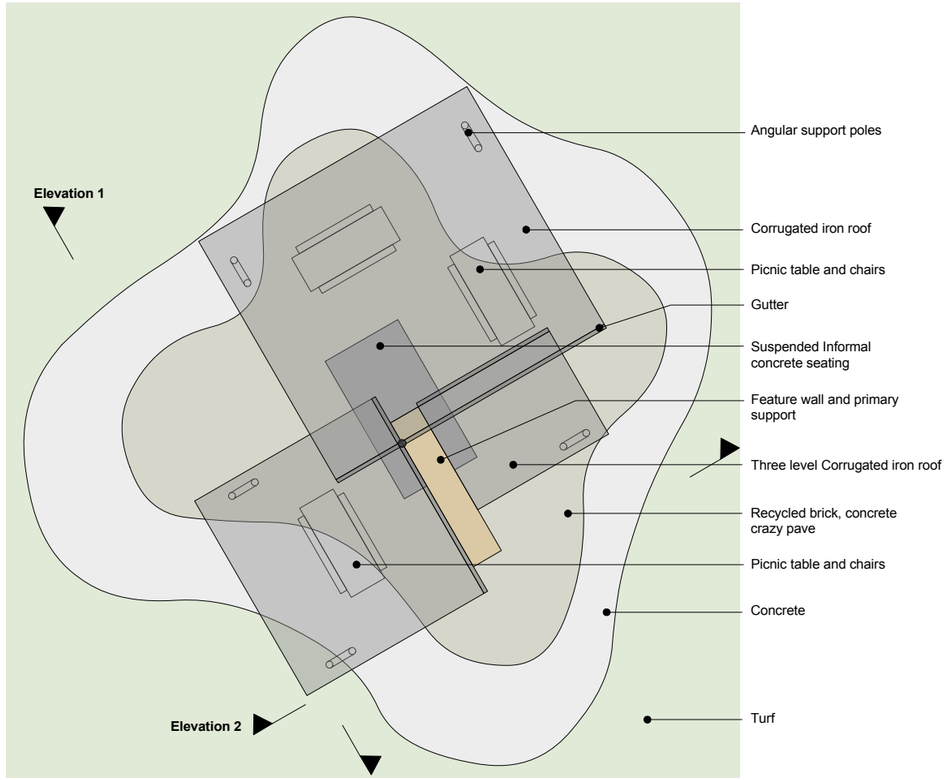
PRINCIPLES

- Shade and seating structures are to be located in highly visible locations and provide good surveillance of that park in which it is located.
- Structures are to maintain an open character unless incorporated into a retaining wall system.
- Structures are to be constructed from resilient and hard wearing materials and provide easy to clean surfaces to minimise vandalism

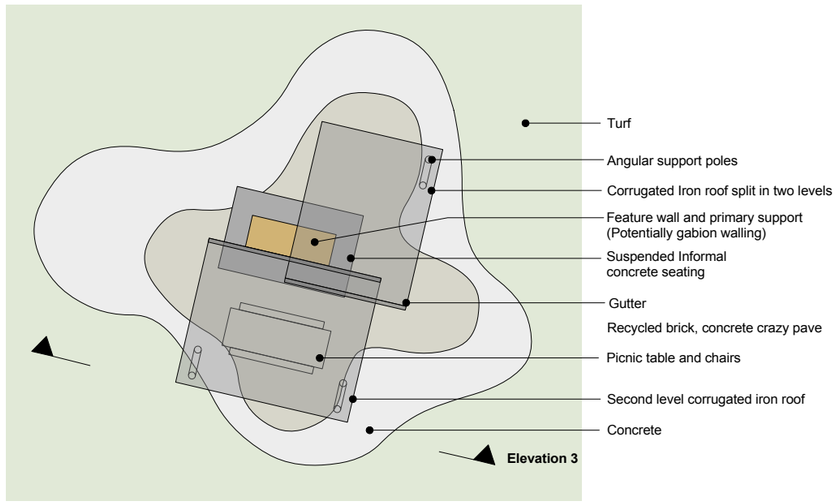
CONTROLS

- Each park is to feature at least one shade and seating structure to provide architectural focus for that park
- Structures are to meet the ground with no raised foundation.
- Structured are to be simple steel framed skillion roofed structures with vertical or near vertical uprights.
- Material choice to be durable, easily maintainable and hard to graffiti. (eg. Gabion walling.)

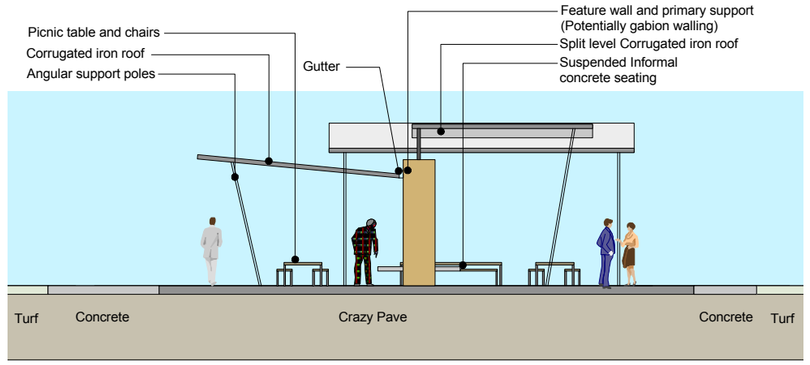




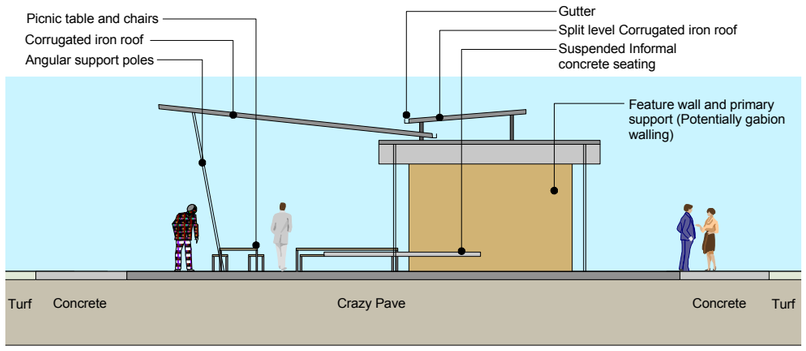
Large Shade Structure Plan
Scale 1:50 @B1



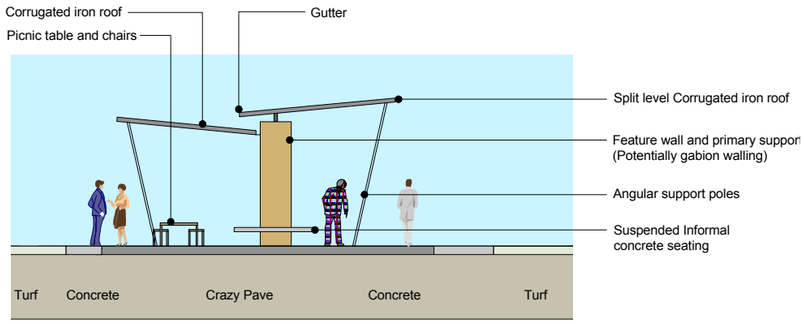
Small Shade Structure Plan
Scale 1:50 @B1



Elevation 2: Large Shade Structure
Scale 1:50 @B1



Elevation 1: Large Shade Structure
Scale 1:50 @B1



Elevation 3: Small Shade Structure
Scale 1:50 @B1

Bonnyrigg Structure and Amenity Facilities Location Plan

1. Jamboree shelter

The Jamboree shelters are designated to the prime estate gathering points. Located at the civic area of Park 2 and Park 8. The design maximises pedestrian flow and external views. The Open space will allow use by multiple families for picnics and watching children from closely related recreational facilities.

2. Feature shelter

The feature shelter is designed for smaller scale locations such as Junior, Village and Forest park. The inclusion of retaining walls provides a sense of enclosure and extending seating areas. This shelter helps create spatial boundaries but still allowing free flowing use.

3. Classic shelter

The Classic shelter will be used through out the Valley Creek Park system. This smaller shelter will be situated with different recreational areas to provide shelter from the elements. It will also act as marker for the allocated recreational areas. The shelter's open flow allows various individual or family opportunities.

4. Bus shelters

The Bus shelters are to be strategically placed through out the estate along main bus routes. The structures will be created from durable material to address potential vandalism but will still provide critical wall transparency for user views and safety.

5. Amenities block

Bonnyrigg Amenities block caters for the Lower Valley Creek Sports Park. The facility provides change rooms, toilets for players and spectators of the sports fields as well as for general community park use. The simple structure allows for natural ventilation and can be easily locked when required. The facility will also provide storage space opportunities for items such as general maintenance equipment.

6. BBQ

BBQ's to be located with selected Shade Structures providing cooking facilities to high use park areas.

Furniture Plan

OBJECTIVES

- To provide a range of furniture at strategic locations to provide rest and amenity for park users and to meet the various recreational requirements for each location.
- To build upon the character of the estate through repeated use of sympathetic materials and designs (line, colour, texture and form) that form a consistent visual language across various site objects e.g. furniture, shade structures, bridges and the like.
- To provide a robust yet comfortable suite of furniture to resist vandalism and anti-social behavior.
- To provide equal access and function to all.
- To potentially incorporate community art designs into site furniture.

PRINCIPLES

- Locate formal seats associated with pedestrian paths. All seating to be located with consideration of views to maximise surveillance and safety from seated position.
- Locate feature seats at civic meeting points in strategic locations only to provide higher quality and unique setting.
- Locate informal seats in broader landscape or picnic areas.
- Combined picnic tables and seats generally to be located with shade structures.
- All formal seats are to be set on a concrete footing and be generally accessible direct from a hard stand surface to provide equal access.
- All informal seats to be located on turf or other free draining surface.

CONTROLS

- Provide a suite of furniture that responds to formal, feature and informal requirements..
- Bubblers to be located in locations shown.
- Timber bollards and groups of trees with low planting to be strategically placed along all park boundaries to restrict vehicle access. This combination of bollards and planting breaks up park edge conditions in order to minimise excessive bollarding. Refer detail park plans for locations.

1. Formal picnic bench

Table and chairs are generally situated with shelters to provide seating and eating facilities. Always located on concrete footing.

2. Formal seating

Formal seating to be provided on major pedestrian paths to open spaces.

3. Feature seating

Feature seating to highlight major pedestrian gathering and entrance points and provide a unique celebration of a specific place.

Bonnyrigg Furniture Location Plan

4. Informal seating - timber and stone

Low sandstone blocks and timber logs associated with the vegetated swale and more informal locations provide a cost effective seating solution.

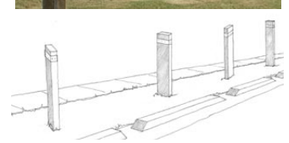
5. Informal seating - walls

Informal retaining walls double as seating walls.

6. Bubblers

Bubblers to provide drinking water within high use pedestrian parks.

7. Bollards



Strategically placed timber bollards together with groupings of trees where roads meet park edges t
o restrict vehicular access

8. Rubbish bins

Rubbish bins to be allocated with all shade structures and playgrounds.

Sports Amenities Plan

OBJECTIVES

- To provide access to sporting facilities in keeping with the SIA
- To provide access to a variety of recreational and play opportunities in appropriate locations relevant to immediate residents
- To provide a mix of both active and passive and formal and informal recreation/play opportunities across the spectrum of age groups

Bonnyrigg Sporting Facilities Location Plan

1. Full size soccer field

The existing pitch is to be retained and upgraded.

The existing sports field lighting is to be retained and relocated.

2. Half size soccer field

The existing soccer pitch is to be relocated and upgraded

3. Informal soccer field

Mini field and goals are located in smaller parks for informal matches.

4. Kick about spaces

Free open space provide opportunities for broader play.

5a. Full basketball court 5b. Half court

5a Basketball Court is existing and to be upgraded.

5b are half courts

Playground Facilities

OBJECTIVES

- To provide access to a variety of recreational and play opportunities in appropriate locations relevant to immediate residents.
- To fulfill requirements for toddler, children and teenager facilities in keeping with the recreational needs study.
- To provide a mix of both active and passive, formal and informal recreation/play opportunities across the spectrum of age groups.
- To respond to the recreational needs analysis.

1. Toddlers 1 - 3

Toddler playgrounds are generally located at quieter areas away from main roads. They are close to viewing shade structures and protected turf areas.

2. Kids 4 - 6

Playgrounds for children aged 4 - 6 are found in the main valley park providing suitable playing structures with surrounding open space.

3. Kids 5 - 12

Children aged 5 - 12 are closely associated with teenage playing facilities. This encourages teenage interaction and team games. Challenging play equipment is also provided.

4. Teenagers

Teenagers are provided both hard and soft surfaced areas, allowing them to challenge themselves on diverse equipment and in team orientated situations. These include mini soccer fields, basketball courts and tennis walls.

Public Art

OBJECTIVES

Bonnyrigg Neighbourhood Art Plan will:

- Clearly identify the overall community vision for the future
- Bring the community together through a range of active, playful and involved processes that strengthen social connectedness and sense of place
- Build upon and embody local identity, character and history yet be a symbol of change and of a positive future
- Provide a vehicle for the expression of the diversity of local community values, aspirations and concerns while ensuring that cultural sensitivities are respected
- Engender community ownership of the estate as a proactive measure toward improved safety and environmental care
- Create dynamism and moments of interest in the fabric of the estate
- Explore the potential for art to be integrated into functional items such as shade structures, paths and seating
- Ensure that all artworks and the processes used to create them are safe and minimise impacts on the environment
- Ensure that opportunities for vandalism are minimised
- Integrate artworks across the estate to provide visual links and provide a consistent identity
- Prioritise the involvement of artists from Bonnyrigg, Fairfield LGA and Greater Western Sydney in both commissioned works and community cultural development projects
- Generate opportunities for the professional development of emerging artists through selected projects
- Develop the skills and knowledge base of local residents in the creation of public art through hands on participation on selected projects
- Establish a process for the selection of artists and artworks that ensures effective consultation and strong community support
- Identify a staging plan and budget for implementation
- Increase access to funding by government agencies, businesses and philanthropic trusts through effective planning

INPUTS

- Draft Community Renewal Services Plan 2008-2011 (Dec 2007)
- Bonnyrigg Town Centre Brand
- Transitional Community Renewal Services Plan (Oct 2007)
- Estate Brand
- Social Impact Assessment by Judith Stubbs and Associates (Oct 2007)
- Schedule 35 of the contract between the NSW Department of Housing and Bonnyrigg Partnerships (Dec 2006)
- Bonnyrigg Living Communities Community Renewal Plan 2005-2007
- Fairfield City Council City Plan
- Bonnyrigg Town Centre DCP and Urban Art Plan
- Plantlines Update

OUTPUTS

Commitments for Concept Plan

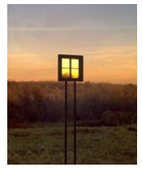
- The role of the Neighbourhood Art Plan in realising the community vision for renewal of the estate including proposed objectives
- Proposed process for community and FCC input into choice of artist, location, themes, design (including materials), fabrication and installation of artworks within the common areas
- Establish Steering Committee (Environment Project Team) including residents and key staff in FCC and BP
- Allocate funding for the development of the Neighbourhood Art Plan and Stage One implementation
- Seek additional funding for the development of the Neighbourhood Art Plan and Stage One implementation from government agencies, businesses and philanthropic trusts
- Develop artist's brief
- Conduct an Expressions of Interest process to assist in the selection of artists
- Engage three artists for consideration through the concept phase in consultation with the Community Reference Group
- Community consultation on the finer details of park design – includes information gathering about themes, possible sites, materials, infrastructure and landscaping
- Develop preliminary concept designs in consultation with the Steering Committee
- Conduct second community consultation including presentation of preliminary concept designs
- Select lead artist in consultation with the Community Reference Group
- Develop Draft Neighbourhood Art Plan
- Conduct final community consultation
- Make amendments to Draft Neighbourhood Art Plan
- Seek approval on Final Draft Neighbourhood Art Plan by Community Reference Group and Fairfield City Council

Commitments for Stage One

- Conduct community design workshops for Stage One
- Present detailed drawings and processes for fabrication and installation for Stage One artworks
- Determine full specifications and costings
- Seek approval of Stage One artworks by Community Reference Group
- Apply for implementation funding for Community Cultural Development component through the Bonnyrigg Trust
- Submit Development Application to FCC for approval
- Implement Stage One
- Conduct community evaluation
- Draft DCP objectives and performance requirements for the delivery of public art
- Allocation for Public Art in the Voluntary Planning Agreement
- Percent for art?

- Check FCC requirements






Public Art Location Plan

Legend

Public art locations

Community Garden

OBJECTIVES

- To create the opportunity for the community to participate and engage in horticulture.
- To help people eat well and feed the hungry and provide a place to keep active.
- To promote learning about the environment with an understanding of garbage reduction, composting and recycling and water.
- To potentially provide a source of employment.
- To promote ownership of the estate.
- To involve people in protecting and caring about the estate.
- To teach young people skills.
- To reduce crime and antisocial behaviour.
- To combine the Multi- purpose Centre and the garden into a community focus point central to the estate.
- To ameliorate the reduced allocation of private open space across the estate, through provision of privately tendered allotments.
- To grow fresh fruit, vegetables and herbs in a specifically configured space with all necessary facilities provided.
- To promote residents in active compost production

PRINCIPLES

- To be established in approximately stage 5 of the development.
- To be driven by and for the community. Early establishment of a management group is required.
- To be co-located with Community Centre and storage requirements, office, meeting rooms and the like to be included in architectural program (Multi- purpose Centre subject to future brief).
- Garden to be of the allotment style with access along a series of grid paths.
- Garden to be secured with a 1.8m security fence and accessed through Community Centre.
- Delivery and vehicular access for soils etc to be provided.
- Provision of a shared garden.
- Provide signage inviting all to participate.

CONTROLS

- To be centrally located





Key Plan

Analysis Plan

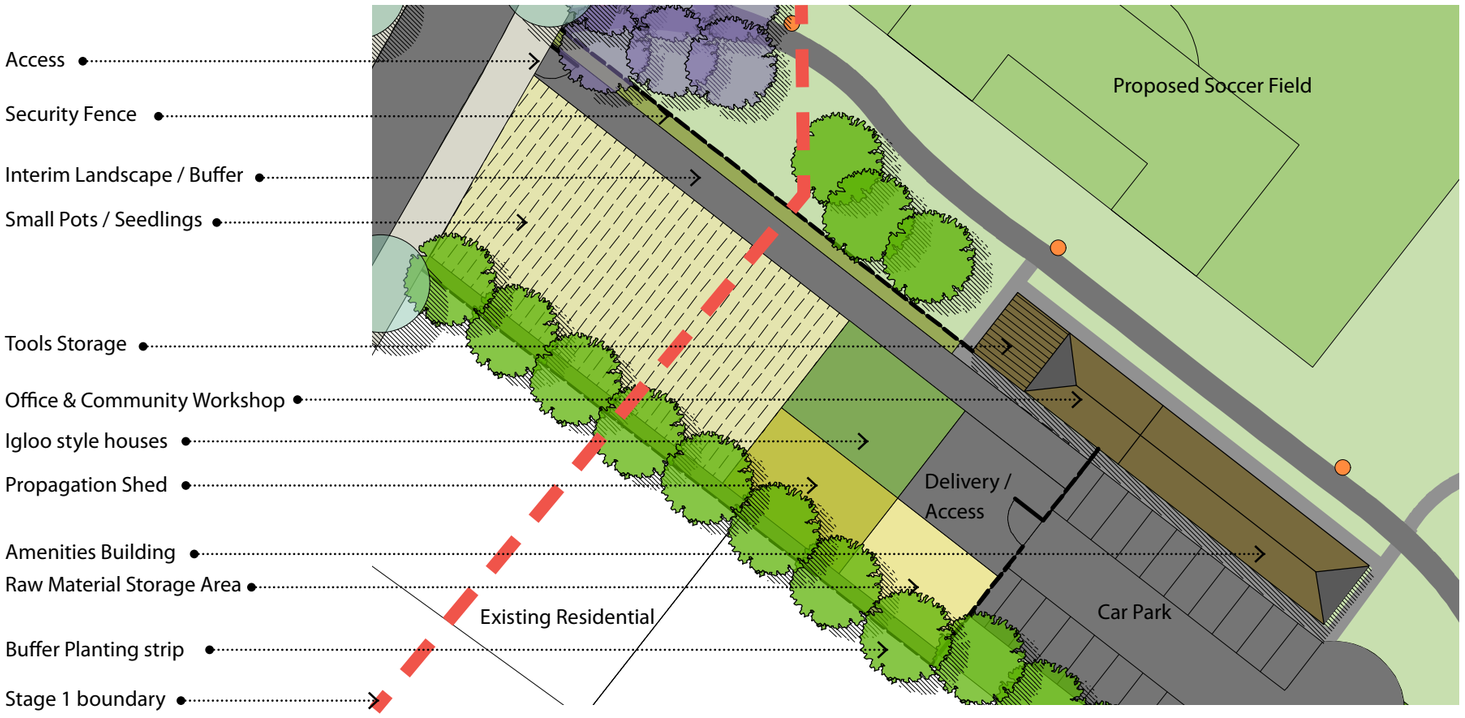
Legend

- Proposed Community Centre location
- Major Collector Roads
- Pedestrian Movement from surrounding community
- Adjacent break-out space from Community Centre

Site Nursery

OBJECTIVES

- To provide an opportunity for the community to galvanise through education and employment in the production of plant material for use on site.
- To locate the nursery on site in a central and accessible location and to provide all necessary facilities for seedling production only.
- To provide facilities for educational workshops associated with the production nursery.
- To partner with an experienced nursery grower to assist Bonnyrigg Partnerships in delivering a high quality production nursery focused on community participation.
- To partner with local Council and employment programs in the development of a social agenda.
- To use the nursery and its produce to screen or buffer unsightly components of the development at various stages of development.
- To form links between the site nursery and the community gardens when constructed.
- To be temporary and exist for the life of the project only.
- To provide an opportunity for private or public existing trees to be transplanted and retained in pots until replanting.
- The Site Nursery will be run with the help of a local experienced grower.
- These key objectives have been developed in coordination with Andreasens Green Nursery.



Tree Supply Program

Stage	Source	Site Nursery	Buffer Zones/Early Works
1	Direct from grower	No Nursery	Direct from grower
2	Direct from grower	Set up - seedlings	Direct from grower
3	Direct from grower	Small pot production	Direct from grower
4	Direct from grower	Semi-mature	Direct from grower
5	Direct from grower	Mature stock	Direct from grower
6	Direct from grower	Suitable for buffer zones	Supply from site nursery
7	Supply from site nursery and direct	Ongoing production	Supply from site nursery
8	Supply from site nursery and direct	Ongoing production	Supply from site nursery
9	Supply from site nursery, direct, and buffer zones	Ongoing production	Supply from site nursery
10	Supply from site nursery, direct, and buffer zones	Ongoing production	Supply from site nursery
11	Supply from site nursery, direct, and buffer zones	Ongoing production	Supply from site nursery
12	Supply from site nursery, direct, and buffer zones	Ongoing production	Supply from site nursery
13	Supply from site nursery, direct, and buffer zones	Ongoing production	Supply from site nursery
14	Supply from site nursery, direct, and buffer zones	Ongoing production	Supply from site nursery
15	Supply from site nursery, direct, and buffer zones	Phase out seedling	Supply from site nursery
16	Supply from site nursery, direct, and buffer zones	Phase out small pot	Supply from site nursery
17	Supply from site nursery, direct, and buffer zones	Phase out semi-mature	Supply from site nursery
18	Supply from site nursery, direct, and buffer zones	Relocate excess stock and materials to community garden - demolish structures and returf over site to make good	Supply from site nursery

Considerations

- climate, ie. frost and wind protection
- access for staff and delivery vehicles
- dock area for loading
- water source, type, and storage
- security
- drainage, catchment, and zero run-off
- recycling and water treatment
- orientation and position of nursery
- product mix, sizes, species, volumes, and required area for production
- propagation facilities
- heating and cooling
- OH+S liabilities

Infrastructure

- pumps
- gravel
- fencing
- electricity
- office, sheds, propagation houses, staff amenities
- potting machine, bob-cat, tractors, trailers
- chlorination/disinfection or water treatment tanks
- loading dock
- trucks for transportation
- irrigation
- concrete paths
- wind breaks
- tree support stands
- benches

Hardscape Materiality

- Feature paving to utilise blocks of concrete and brick recycled from onsite demolition to form new surfaces. These are to be associated with shade structures in parks and combine with higher grade concrete surfaces to establish places of higher quality materiality.
- Higher grade concrete surfaces to be located in gathering places, and shade structures.
- Standard brushed concrete surfaces are to be used for all other pedestrian paths.
- Bridges to be constructed from pre cast concrete and exhibit similar proportions to entry markers (refer way finding and signage). Handrails to be avoided.

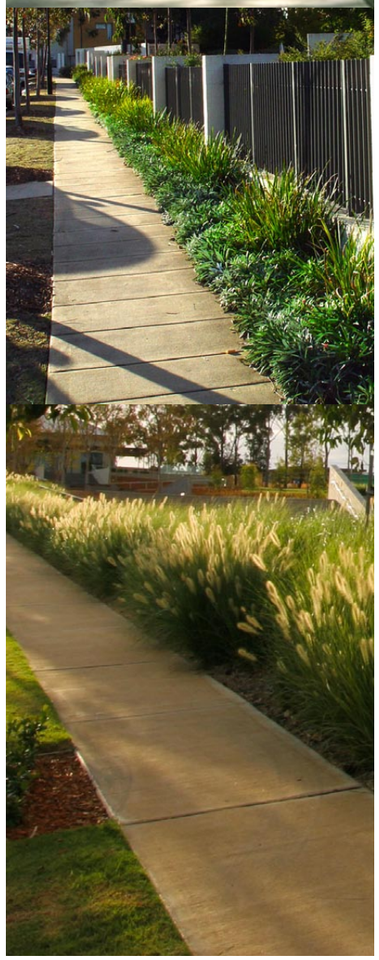
CONTROLS

- Feature paving to utilise blocks of concrete and brick recycled from onsite demolition to form new surfaces.

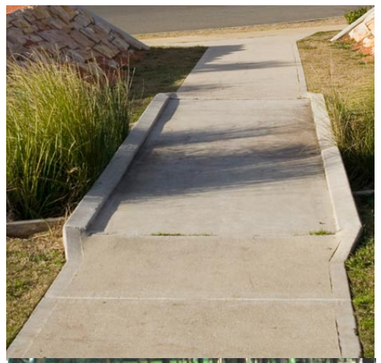
Feature paving

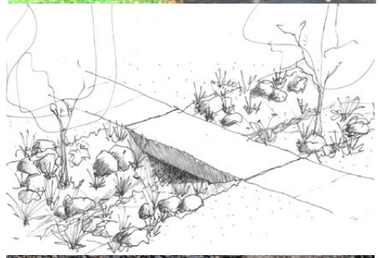
Recycled concrete finish

Standard concrete finish



Bridges/ Crossings





Bitumen Sports/ Carparking

Crushed and graded roof tiles and house bricks

Indicative Lighting Plan

Legend

- Existing Lighting
- Collector (P2)
- Local Road (P3)
- Cycleway/Footpath (P2)
- Sports Field Lighting

Note: To be read in conjunction with lighting strategy

Landscape Maintenance

OBJECTIVES

- Provide a clear strategy for the establishment and on going management of various landscape zones in order to ensure both an ecologically productive and high quality landscape finish in perpetuity.
- To establish landscapes that are readily maintainable, provide high quality aesthetic amenity and recreational / interpretive facilities.
- Provide low maintenance landscape areas capable of enduring periods of minimal maintenance and anti-social behaviour.
- Principles
- Design and implement formal WSUD infrastructure components to perform a variety of functions including stormwater treatment and detention and erosion and sediment control.
- Restore and enhance bushland and riparian environments using local provenance seed to increase habitat and biodiversity as well as enhance aesthetic and recreational amenity.
- Plan and maintain a diversity of sporting and recreational opportunities including quality, multi-use public open space facilities that meet community expectations.
- Design quality streetscape environments that encourage street activity, promote transitional spaces between the private and public domain and improve visual amenity by retaining and increasing streetscape vegetation.
- Ensure the design and management of landscape zones considers local environmental constraints, water use minimisation, management of stormwater processes, social equity and economic viability.

STRATEGIES

- A full Vegetation Management Plan is not required under the DWE 3A permit regulations.
- Development of guidelines for the long-term, on-going management of vegetation in each of the proposed management zones in order to achieve the above objectives.
- Management guidelines are focused on soft vegetation management. Management and maintenance of hard landscape and features such as structures, furniture, lighting, recreational amenities and public artwork is to be undertaken on a needs basis.
- Management guidelines provide an overview of the major issues that are likely to be encountered in each of the management zones.
- While Management Guidelines have been broken down into management zones, each zone incorporates a variety of elements and zone characteristics often cross over.
- While these guidelines aim to provide simple management strategies to address issues that may arise, an adaptive management approach should be adopted so that management actions can be adjusted if necessary and as required to meet the goals and objectives.

Management Zones

Water Sensitive Urban Design Zone

DESCRIPTION OF THE ZONE

- The Water Sensitive Urban Design (WSUD) management zone includes the following elements:
- Vegetated swales on the edge of selected parks.
- Bioretention systems including raingardens within the reserves of both new and existing roads as well as within road verges.
- Gross Pollutant Trap - GTP (please refer to engineering maintanance strategy report)

MANAGEMENT GUIDELINES

Vegetated Swales

- Routine inspection of the swale profile to identify any areas of obvious increased sediment deposition, scouring of the swale invert from storm flows, rill erosion of the swale batters from lateral inflows or damage to the swale profile from vehicles.
- Routine inspection of inlet points (if the swale does not have distributed inflows), surcharge pits and field inlet pits to identify any areas of scour, litter build up and blockages.
- Removal of sediment where it is impeding the conveyance of the swale and/or smothering the swale vegetation and if necessary re-profiling of the swale and re-vegetating to original design specification.
- Repairing any damage to the swale profile resulting from scour, rill erosion or vehicle damage.
- Clearing of blockages to inlet or outlets.
- Inspections are recommended following large storm events to check for scour.

Bioretention Systems and Raingardens

- Routine inspection of the bioretention system profile to identify any areas of obvious increased sediment deposition, scouring from storm flows, rill erosion of the batters from lateral inflows, damage to the profile from vehicles and clogging of the bioretention system (evident by a 'boggy' filter media surface).
- Routine inspection of inflows systems, overflow pits and under-drains to identify and clean any areas of scour, litter build up and blockages.
- Removal of sediment where it is smothering the bioretention system vegetation.
- Where a sediment forebay is adopted, removal of accumulated sediment.
- Repairing any damage to the profile resulting from scour, rill erosion or vehicle damage by replacement of appropriate fill (to match onsite soils) and revegetating. Tilling of the bioretention system surface, or removal of the surface layer, if there is evidence of clogging.
- Resetting (i.e. complete reconstruction) of the bioretention system will be required if the system fails to drain adequately after tilling of the surface. Maintenance should only occur after a reasonably rain free period when the soil in the bioretention system is dry. Inspections are also recommended following large storm events to check for scour and other damage.

Watering/Irrigation

- Regular watering/irrigation of vegetation until plants are established and actively growing.
- Mowing
- Turf should be mowed and vegetation slashed as required to preserve the optimal design height for the vegetation.
- Clippings shall be composted and recycled through the community garden centre or as directed.
- Edging
- Maintain edge treatment to restrict over growth and loss of material.
- Planting
- Removal of plants that have died (from any cause) and replacement with plants of equivalent size and species as detailed in the plant schedule.
- Weed Control
- Hand removal of invasive weeds.
- Spray with herbicide if >20% of the ground surface area is infested, and limit treatment to spot spraying rather than broad scale application.
- Ensure weed free mulch is used and regular top up of mulch to minimise wind borne weed colonisation.
- Remove weed material with seed heads.
- Herbicides should not be used in bioretention systems.
- Pruning
- Pruning is to be undertaken as required to remove dead or diseased vegetation material and to stimulate new growth.
- Litter
- Any bottles, papers, cigarette butts, etc. shall be removed by hand.
- This work shall be executed regularly so that all areas are free from rubbish and debris.
- Insect and Disease Control
- All pests or diseases which may affect the plants are to be correctly identified and a suitable form of treatment should be engaged until the problem has been eliminated.

Vegetated Swale Zone

DESCRIPTION OF THE ZONE

An existing stormwater pipe is to be retained and used for high flow events. All stormwater collected from the estate expresses environmental flow above ground through a vegetated swale which follows the existing drainage line. Stormwater enters the swale through the horseshoe shaped raingardens. High flows above the existing stormwater pipe capacity will discharge and travel overland.

A number of WSUD elements have been incorporated within this zone in order to provide integrated stormwater management.

MANAGEMENT GUIDELINES

Water Quality

- Regular monitoring of all stormwater inlets and devices within the vegetated swale corridor including litter traps. Inspections should be carried out every 3 months.
- Maintenance may need to be increased in regularity in autumn when leaf fall contributes to litter load within creeks.
- Additional inspections may be required following storm events.
- Appropriate treatment and management should be undertaken following the identification of any algae blooms as follows:
  - Where excess algae growth occurs have samples identified quickly;
  - If blue green algae, erect warning signs and seek specialist advice within 24 hours of notification;
  - If filamentous is a persistent problem investigate the source and consider the use of Phosloc® to remove excess phosphorus from the water column.

Weed Control

- Maximum allowed weed coverage for both vegetated swales and aquatic areas is 5%.
- Hand removal of weeds as far as possible (especially close to the watercourse) for minimal soil and vegetation disturbance.
- Spray with herbicide if >20% of the ground surface area is infested, and limit treatment to spot spraying rather than broad scale application.
- Ensure weed free mulch is used and regular top up of mulch to minimise wind borne weed colonisation.
- Remove weed material with seed heads.

Mowing

- Native vegetation is to be left to grow in a form consistent with the growth habitat of the species.
- Mowing is to be limited to turfed areas only.
- Grass clippings are to be kept away from the vegetated swale.
- Clippings shall be composted and recycled through the community garden centre or as directed.

Herbicide

- Herbicide is to be used with caution so as not to have an impact on water quality.
- Use of herbicides in the vegetated swale zone should be avoided or minimised, particularly adjacent to the creek.
- If herbicide is required a glyphosate, non-residual herbicide such a Roundup Biactive® is relatively safe around waterways.

Fertiliser

- Generally, no fertiliser should be used in native vegetation areas as inappropriate fertiliser use may lead to excess nutrients in the watercourse which may result in algae problems and growth of aquatic weeds.

Litter

- Any bottles, papers, cigarette butts, etc. shall be removed by hand from the vegetated swale.
- This work shall be executed regularly so that all areas are free from rubbish when observed at bi-weekly intervals.

Stakes and Ties

- Adjust stakes and ties where necessary.
- Where plants are robust with well developed systems and are strong enough to no longer require support, stakes and ties shall be removed.
- Where plants are unable to be self supported or where stakes are damaged, plants shall be staked or restaked.

WSUD

- All WSUD elements located within the vegetated swale zone should be managed in accordance with the guidelines outlined in the engineering documentation.

Sport Field Zone

DESCRIPTION OF ZONE

The sporting fields management zone physically sits in the parks zone. Generally, all relevant management guidelines outlined for the parks management zone should be applied to the sporting fields zone. The following management guidelines provide direction on the management of the proposed drip irrigation system as part of the upgrade to existing soccer fields in Park 2.

MANAGEMENT GUIDELINES

Irrigation

- The installed irrigation system shall be programmed to suit the following:
  - The precipitation requirements of the individual zones/stations with regard to types of plants.
  - Consideration as to the infiltration rate of the soil/ medium and associated physical factors seasons, evaporation, exposure, topography, local authority restrictions etc.
  - Allowance for adjustment or shut down during and after periods prolonged heavy rains.
- All components should be checked for proper operation.
- Any damaged component shall be repaired or replaced with equivalent parts.
- Any dirt or foreign matter shall be flushed from the system and all blockages to be cleared out.
- Necessary adjustment and replacement shall be made to the various components of the sprinkler system to ensure that the overall operation of the system is efficient and operational.

NOTE: Further detail regarding subsurface irrigation system to be confirmed.

Streetscape Zone

DESCRIPTION OF THE ZONE

The streetscape management zone includes the following elements:

- Street trees located on both sides of the street (except small streets).
- Street trees located in raingardens to obtain passive irrigation from stormwater runoff.
- Landscaped verge buffers.

MANAGEMENT GUIDELINES

Watering

- Water all trees as required to maintain healthy growth during the first two (2) years after planting.
- During dry summer conditions, new trees may need to be watered 2-3 times per week.
- Provide temporary irrigation as required to maintain trees in peak condition at all times by having the capacity to apply a summer weekly target application of 25mm of water (approximately 12-13 litres of water per square metre).

Pruning

- Pruning of street trees should generally be undertaken on an annual basis.
- Trees are to be pruned to eliminate diseased or damaged growth, avoid inter branch contact and thin out crowns in a natural manner.
- Failed, dead or damaged trees should be replaced as required.

Insect and Disease Control

- All pests or diseases which may affect the trees are to be correctly identified and a suitable form of treatment should be engaged until the problem has been eliminated.
- If the use of chemical spray is required, strict adherence to the manufacturer's recommended rates and handling is essential.
- Proper care should be taken to protect both the user and persons likely to be affected or come in contact with the spray.
- Allowance should be made to carry out such work outside of normal working hours if necessary.

Weeding and Clearing

- Remove all weed growth and re-occurring weed growth by hand or spray with approved herbicide unless otherwise specified throughout all planted and mulched areas.
- This work shall be executed regularly so that the planted, paved and mulched areas are weed free when observed at bi-weekly intervals.
- Vigorous ground covers shall be cleared from and maintained 200mm from the base of any shrub or tree.
- All drainage structures and pit covers shall be inspected and cleaned out at six monthly intervals to ensure that they are in proper working order.
- All weed mats are to be maintained in a weed free condition and where necessary, missing or damaged mats are to be replaced to the previously specified standard.

Rubbish Removal

- Any bottles, papers, cigarette butts, etc. shall be removed by hand from the site.
- This work shall be executed regularly so that all areas are free from rubbish when observed at fortnightly intervals.
- Leaf litter shall be removed from all path and lawn areas and spread evenly over the mulched areas, composted on site or removed from site as directed.
- The removal of leaf litter shall be executed fortnightly during leaf fall.

Mulched Surfaces

- Mulched areas should be inspected bi-weekly to determine mulch requirements.
- Generally a minimum depth of 75mm cover should be maintained to ensure adequate weed suppression and quality finish.
- Special care when re-mulching should be given to maintaining original ground levels around the base of plants.
- Opportunity for mechanical damage to the critical root zone should be avoided by placing a 50mm layer of organic mulch around the base of all trees.

Stakes and Ties

- Adjust stakes and ties where necessary.
- Where plants are robust with well developed systems and are strong enough to no longer require support, stakes and ties shall be removed.
- Where plants are unable to be self supported or where stakes are damaged, plants shall be staked or restaked.

WSUD

- All WSUD elements located within the creekline zone should be managed in accordance with the guidelines in section 1.2 were appropriate.

Park Zone

DESCRIPTION OF THE ZONE

The Parks management zone is made up of a combination of active and passive recreation areas. Soft landscape features relevant to these vegetation management guidelines are as follows:

MANAGEMENT GUIDELINES

Pruning

- Pruning of shrubs is required during Spring and may only be necessary on an on the spot basis during the remainder of the year.
- Pruning should reflect the natural growth flowering and regrowth habit of the individual species. Generally prune shrubs after flowering.
- Trimming of shrubs must be scheduled at times which will maintain the character and design of any specified hedges or topiaried plants. Two to three times per season would be expected.
- Trees are to be pruned to eliminate diseased or damaged growth, avoid inter branch contact and thin out crowns in a natural manner.
- Major tree pruning or lopping should be carried out by a suitably qualified tree surgeon/arboriculturalist.
- Generally, ensure that all dead palm fronds and tree branches are removed as soon as noticed.
- Trimming of shrubs must be scheduled at times which will maintain the character and design of any specified hedges or topiaried plants. Two to three times per season would be expected, as noted in the pruning schedule.
- Failed, dead or damaged plants should be replaced as required.

Fertilising

- Soil testing is to be done on a two year schedule and would include taking samples from both planting beds and lawn areas. A fertilisation program shall be based on the soil testing results.
- Fertilisation of trees shall be done once every two years except where specific problems exist.
- Generally an all purpose fertiliser N: P: K10:4:6 (equivalent to Multigro) should be applied at recommended rates.
- Alternatively 12 month slow release fertiliser (such as Nutricote) may be applied at the manufacturer's recommended rate.
- All purpose fertiliser shall be applied to shrubs annually in two bands and cultivated into the soil 100mm deep.
- Fertilisation of shrubs and trees shall take place in September and March according to seasonal growth requirement.
- Apply lawn fertiliser at the completion of the first and last mowings of the Defects Period, and at other times as required to maintain healthy grass cover.

Insect and Disease Control

- All pests or diseases which may affect the plants and turf are to be correctly identified and a suitable form of treatment should be engaged until the problem has been eliminated.
- If the use of chemical spray is required, strict adherence to the manufacturer's recommended rates and handling is essential.
- Proper care should be taken to protect both the user and persons likely to be affected or come in contact with the spray.
- Allowance should be made to carry out such work outside of normal working hours if necessary.

Stakes and Ties

- Adjust stakes and ties where necessary.
- Where plants are robust with well developed systems and are strong enough to no longer require support, stakes and ties shall be removed.
- Where plants are unable to be self supported or where stakes are damaged, plants shall be staked or restaked.

Mowing and Trimming

- Lawn areas shall be mown at a height consistent with the growth habit of the grass variety.
- A regular height range of 25 to 40mm shall be maintained throughout the year.
- Generally, except under wet conditions where the lawn shall be left, mowing is to be carried out on a weekly basis during the mowing season, November to March, and at bi-weekly intervals during April to October.
- The lawn shall be raked once every month before mowing during the mowing season with a flexible rake.
- On alternate mowings, a north-south and east-west pattern shall be adopted.
- At the same time as mowing, lawn edges to plant beds, pathways, base of trees and other obstacles, shall be trimmed.
- When mowing or trimming, care shall be taken so damage to trees and shrubs is prevented.
- Clippings shall be composted and recycled through the community garden centre or as directed.

Lawn Topdressing

- Established lawns shall be topdressed the following Spring after establishment using a weed free imported sandy topsoil to a depth of 5mm.
- Further topdressing is only required to smooth out any depressions or irregularities in the lawn area as directed.
- Topdressing material shall be coarse or medium soil to AS 4419 suitable for application to turf or grass seeded areas.

Weeding and Clearing

- Remove all weed growth and re-occurring weed growth by hand or spray with approved herbicide unless otherwise specified throughout all planted and mulched areas.
- This work shall be executed regularly so that the planted, paved and mulched areas are weed free when observed at bi-weekly intervals.
- Vigorous ground covers shall be cleared from and maintained 200mm from the base of any shrub or tree.
- All drainage structures and pit covers shall be inspected and cleaned out at six monthly intervals to ensure that they are in proper working order.
- All weed mats are to be maintained in a weed free condition and where necessary, missing or damaged mats are to be replaced to the previously specified standard.

Rubbish Removal

- Any bottles, papers, cigarette butts, etc. shall be removed by hand from the site.
- This work shall be executed regularly so that all areas are free from rubbish when observed at fortnightly intervals.
- Leaf litter shall be removed from all path and lawn areas and spread evenly over the mulched areas, composted on site or removed from site as directed.
- The removal of leaf litter shall be executed fortnightly during leaf fall.

Mulched Surfaces

- Mulched areas should be inspected bi-weekly to determine mulch requirements.
- Generally a minimum depth of 75mm cover should be maintained to ensure adequate weed suppression and quality finish.
- Special care when re-mulching should be given to maintaining original ground levels around the base of plants.
- Opportunity for mechanical damage to the critical root zone should be avoided by placing a 50mm layer of organic mulch around the base of all trees.

Hand Watering

- In the absence of irrigation systems, lawn and planting areas are to be manually watered.
- Allow to water so that the soil is soaked to a depth of 150mm for lawn and 300mm for planting.
- Avoid frequent dampening of the surface.
- Allow the surface of the soil to partially dry out between waterings.
- Water as necessary to maintain a vigorous and healthy growth.

WSUD

- All WSUD elements located within the parks zone should be managed in accordance with the guidelines in section 1.2.

Signage and Way Finding

Way Finding

OBJECTIVES

- Provide a considered system of wayfinding devices to assist visitors and residents to easily locate themselves within the estate
- Provide a network of recognisable and familiar features/ items that mark key points and routes to reinforce circulation and connectivity between key destinations
- To use a variety of tools in order to create a system of way finding

PRINCIPLES

- Use architectural features, ribbon planting, feature structures in open space, cultural plantings and construction of key views to provide an integrated wayfinding network

Signage

OBJECTIVES

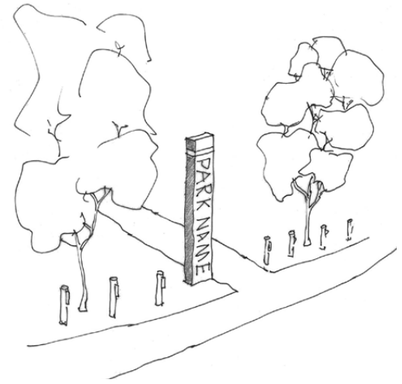
- Provide a consistent approach across the estate to the design of signs (street, entry, directional, park naming, interpretive etc)
- Ensure a network of signs that reinforce each other and provide efficient and direct guidance to visitors and residence

PRINCIPLES

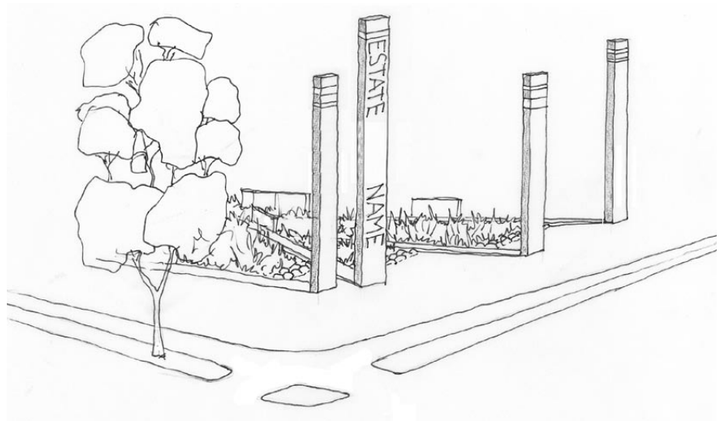
- Ensure signs are designed to be robust
- Locate signs in visible yet appropriate locations

CONTROLS

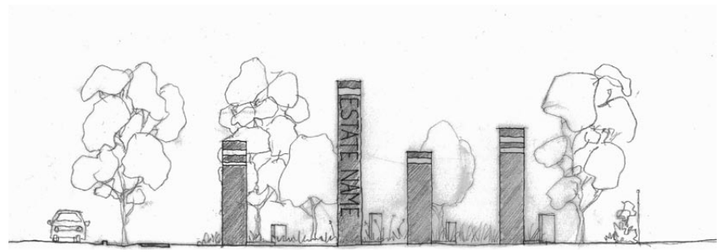
- Street signs to be council standard
- Entry signs to be vertical elements constructed from concrete and incorporate lighting as shown.
- Park naming signs are to be a reduced scale version of entry signs as shown



General Estate Signage/Way finding



Key Pedestrian area Signage/Way finding

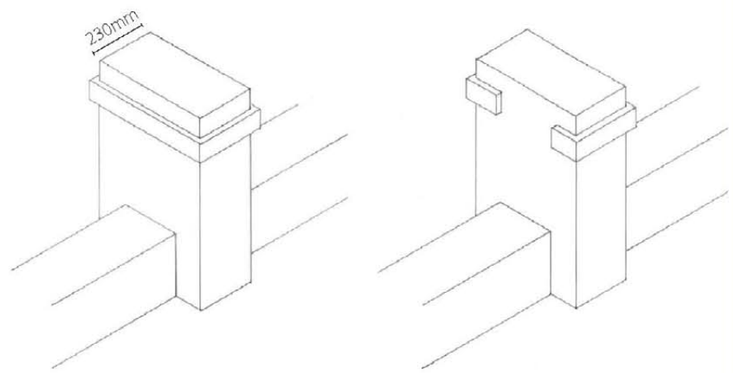


Key Pedestrian area Signage/Way finding

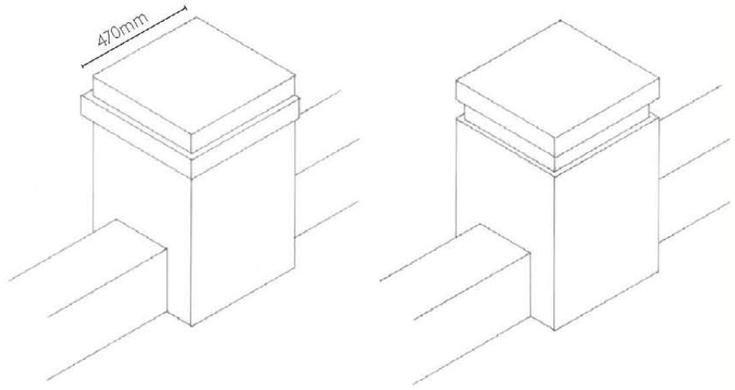
02

RESIDENTIAL FENCING STRATEGY

BLADE PILLARS (ONE X TWO BRICKS)



SQUARE PILLARS (TWO X TWO BRICKS)



NOTE: Pillar types are interchangeable with majority of fence types

ARC FENCING PALISADE OPTIONS

ARC FENCING PALISADE COLOUR SCHEDULE

AUSTRAL BRICKS COLOUR SCHEDULE

PRINCIPLES

- 11 overall fence types form a fencing suite - each respond to different requirements and locations. Fence Types include:

Low Front Fences
- Fence Type 1A
- Fence Type 1B
- Fence Type 1C
- Fence Type 1D
- Fence Type 2

Screening/Boundary Fences
- Fence Type 3a
- Fence Type 3B
- Fence Type 3C
- Fence Type 3D
- Fence Type 3E
- Fence Type 3F
- Fence Type 4

- Consistency in street frontage where possible i.e. regular 3000mm column spacing, materials and heights
- Square pillars to corner of lots and letter boxes to street frontage
- Blade pillars to mid sections of walls (not corners or ends of lots)
- To avoid monotony in the front fence, a number of options are available;
  - 4 column and trim types
  - A selection of brick colours (to be selected in relation to architectural brick selections)
  - 2 types of aluminium infills with selection of powder coat colours
- Corner lots along main roads to have consistent fence type with wall to base
- Mid block lots to adopt single fence and pillar type to front. Variables are then brick and infill type and colour.
- Low planting to front of all fences
  - Groundcovers to 3 brick high wall and
  - Low shrubs to 4 brick and higher wall
- Services to be located behind wall (inside lot) where possible
- Fence Type 1C2 (with no brick base) is to be used where possible given effective budget use
- Fence Type 1C2 (with no brick base) is to be used where existing tree roots are to be avoided

BONNYRIGG LIVING COMMUNITIES FENCING STRATEGY

D Pillar Types and Infill Options

Date 21.05.08 ISSUE D

EDAW | AECOM

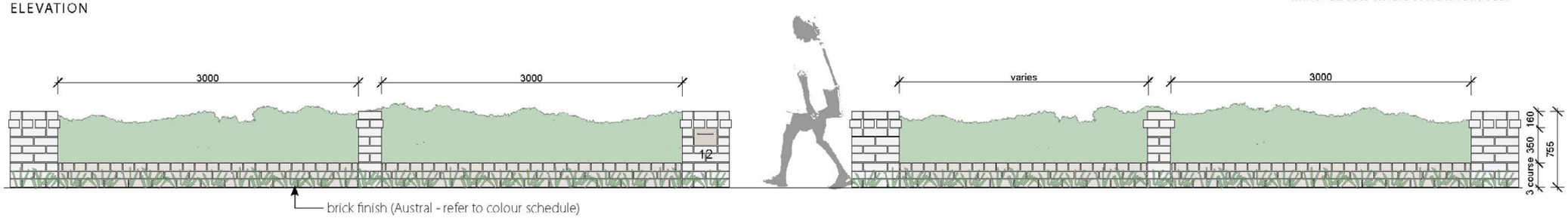
FENCE TYPE 1A

3 course brick fence with regularly spaced low brick blades with hedging infill and low planting to street frontage.

Fence can be used as retaining wall option

Typical location: To font of lot, in small or minor streets where scale is reduced.

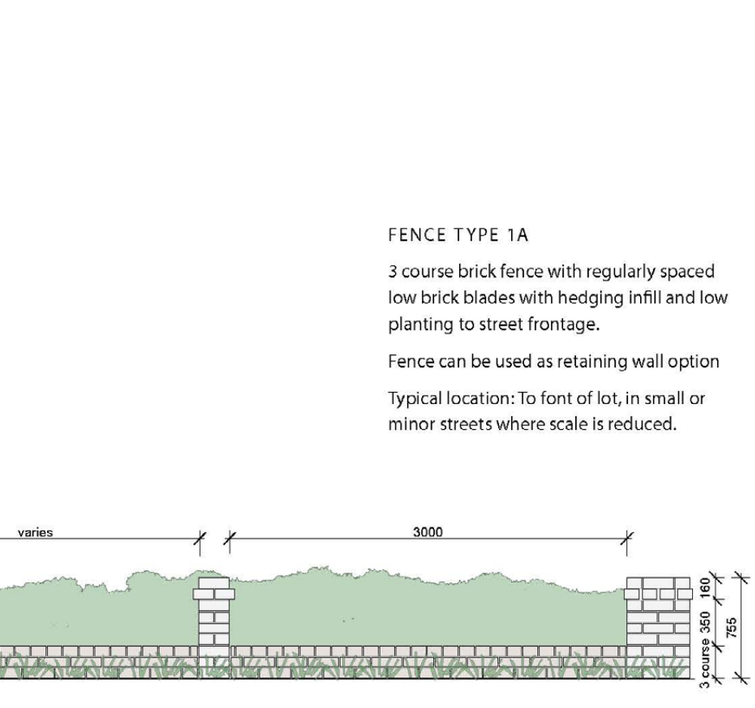
ELEVATION



PLAN

SECTION

CHARACTER IMAGE - Form only (not finish)



BONNYRIGG LIVING COMMUNITIES FENCING STRATEGY

D Fence Type 1A

Scale 1:40 @ A3 Date 21.05.08 ISSUE D

0mm 400 800 1200 1600 2000

EDAW | AECOM

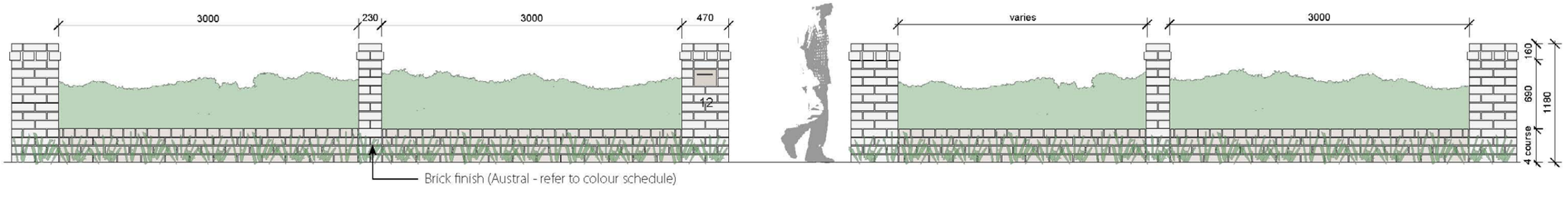
FENCE TYPE 1B

4 course brick fence with regularly spaced brick blades with hedging infill and low planting on the street frontage.

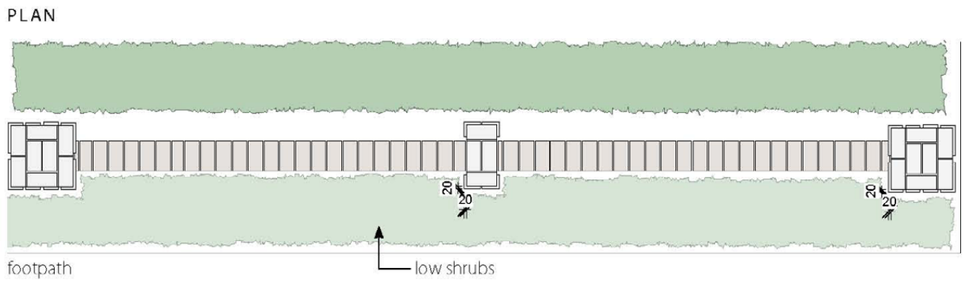
Fence can be used as retaining wall option

Typical location: To front of lot in medium sized streets.

ELEVATION



PLAN



SECTION

CHARACTER IMAGE - Form only (not finish)

BONNYRIGG LIVING COMMUNITIES FENCING STRATEGY

D Fence Type 1B

Scale 1:40 @ A3 Date 21.05.08 ISSUE D

0mm 400 800 1200 1600 2000

EDAW | AECOM

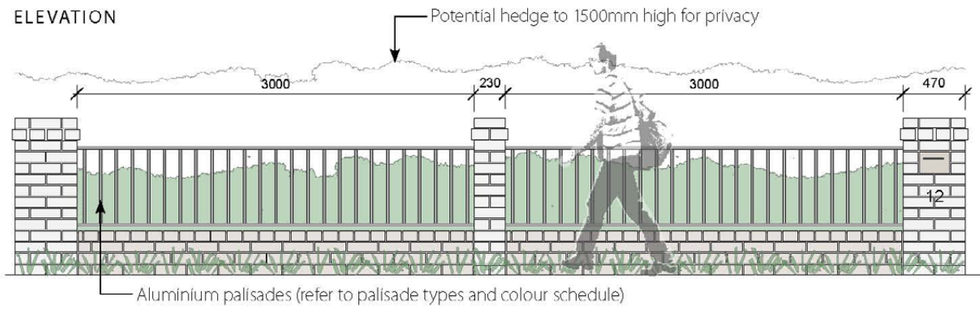
FENCE TYPE 1C

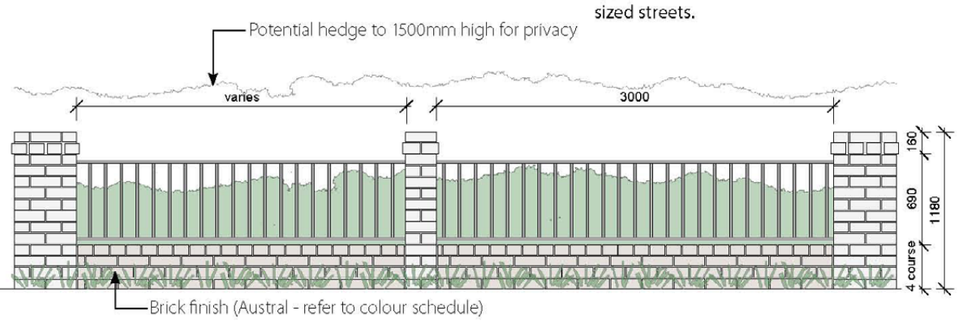
4 course brick fence with aluminium palisades with regularly spaced brick blades. Low planting on the street frontage.

Fence can be used as retaining wall option

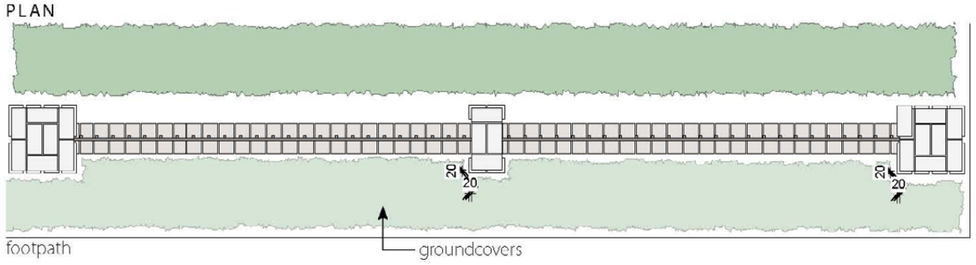
Typical location: To front of lot in medium sized streets.

ELEVATION





PLAN



SECTION

CHARACTER IMAGE

BONNYRIGG LIVING COMMUNITIES FENCING STRATEGY

D Fence Type 1C

Scale 1:40 @ A3 Date 21.05.08 ISSUE D

0mm 400 800 1200 1600 2000

EDAW | AECOM

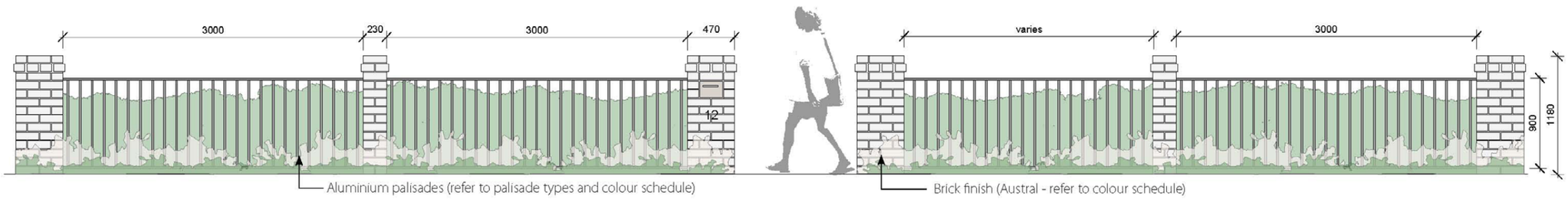
bonnyrigg PARTNERSHIPS

FENCE TYPE 1D

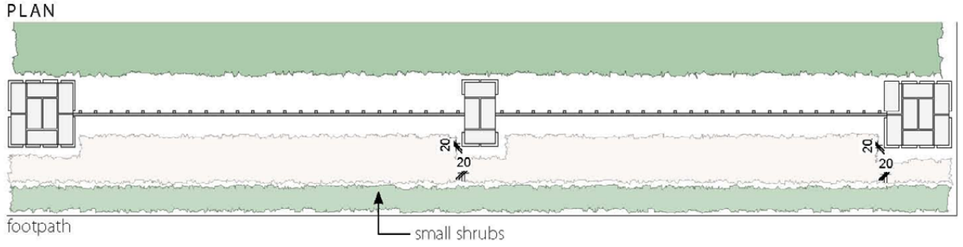
1180mm high aluminium palisade fence with regularly spaced brick blades and low planting on the street frontage.

Typical location: To front of lot in any street, specifically park address.

ELEVATION



PLAN



SECTION

CHARACTER IMAGE

BONNYRIGG LIVING COMMUNITIES FENCING STRATEGY

D Fence Type 1D

Scale 1:40 @ A3 Date 21.05.08 ISSUE D

0mm 400 800 1200 1600 2000

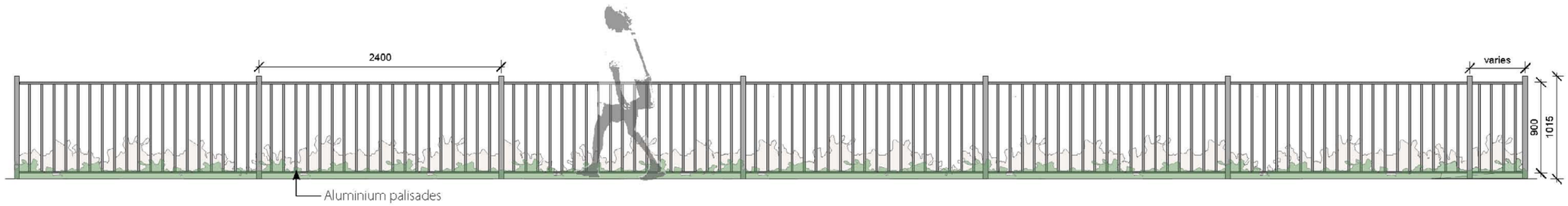
EDAW | AECOM

FENCE TYPE 2

1m high tubular aluminium palisade fence with 50mm square posts at 2.4m intervals.

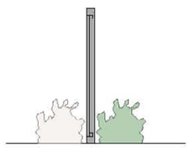
Typical location: Between driveways and front gardens.

ELEVATION



PLAN

SECTION



CHARACTER IMAGE

BONNYRIGG LIVING COMMUNITIES FENCING STRATEGY

D Fence Type 2

Scale 1:40 @ A3 **Date** 21.05.08 **ISSUE D**

0mm 400 800 1200 1600 2000

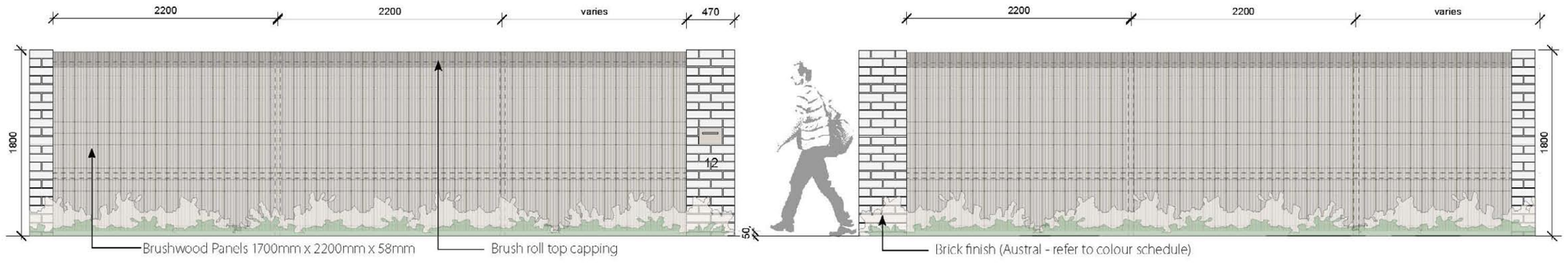
EDAW | AECOM

FENCE TYPE 3A

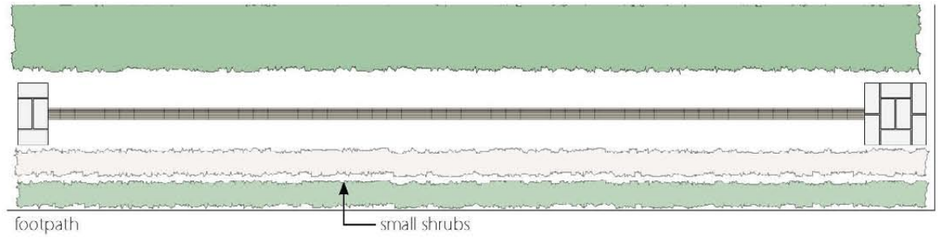
1800mm high brushwood fence with regularly spaced brick blades. The panels are mounted on a steel frame, 50mm off the ground, which is hidden by brush and a roll top brush capping. Fire retardant can be applied to the brushwood.

Typical location: Limited to specific locations where 100% privacy and an attractive effect is required, eg. private gardens in 4, 6, and 8 plex corner lots.

ELEVATION



PLAN



SECTION

CHARACTER IMAGE

BONNYRIGG LIVING COMMUNITIES FENCING STRATEGY

D Fence Type 3A

Scale 1:40 @ A3 Date 21.05.08 ISSUE D

0mm 400 800 1200 1600 2000

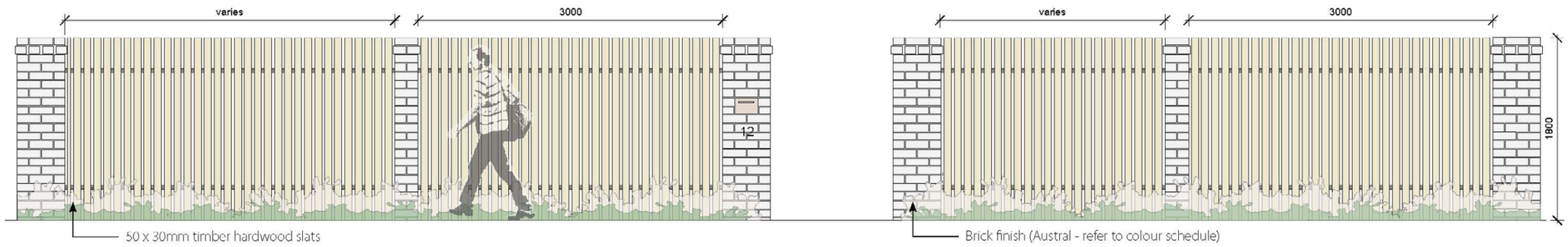
EDAW | AECOM

FENCE TYPE 3B

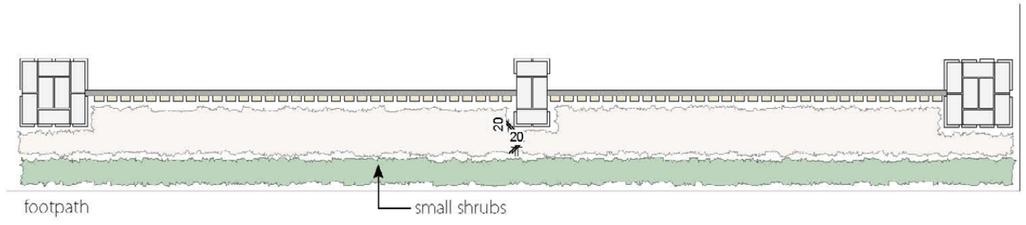
1800mm high fence with regularly spaced square brick blades and 50 x 30mm timber hardwood slats mounted on a steel frame. Low planting on the street frontage.

Typical location: Side of lots facing the street.

ELEVATION



PLAN



SECTION

CHARACTER IMAGE

BONNYRIGG LIVING COMMUNITIES FENCING STRATEGY

D Fence Type 3B

Scale 1:40 @ A3 Date 21.05.08 ISSUE D

0mm 400 800 1200 1600 2000

EDAW | AECOM

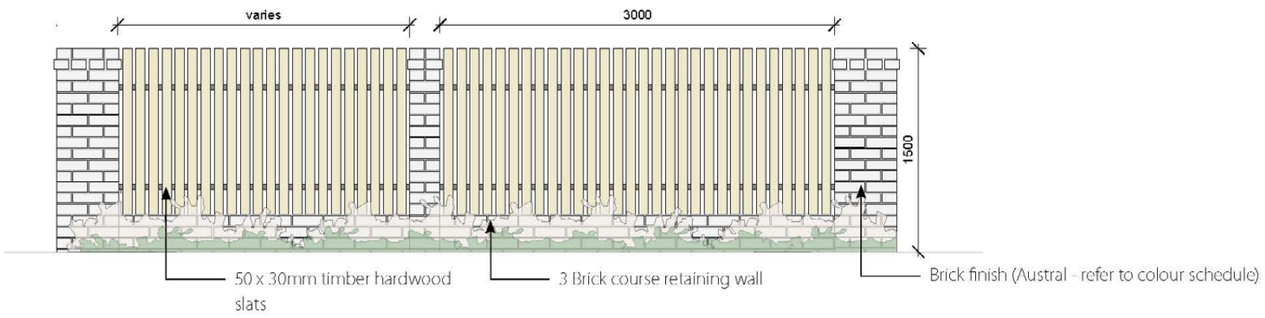
bonnyrigg
PARTNERSHIPS

FENCE TYPE 3C

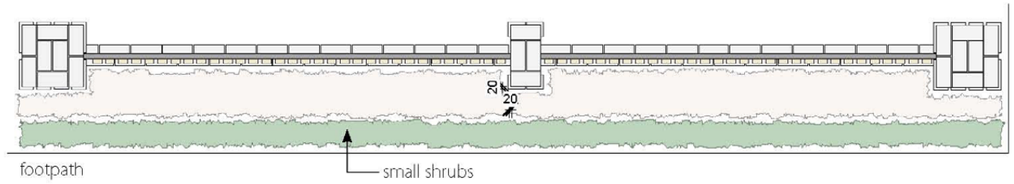
1500mm high fence with regularly spaced square brick blades and a 3 course retaining brick base. Infills are 50 x 30mm timber hardwood slats mounted on a steel frame. Low planting on the street frontage.

Typical location: Side of lots facing the street.

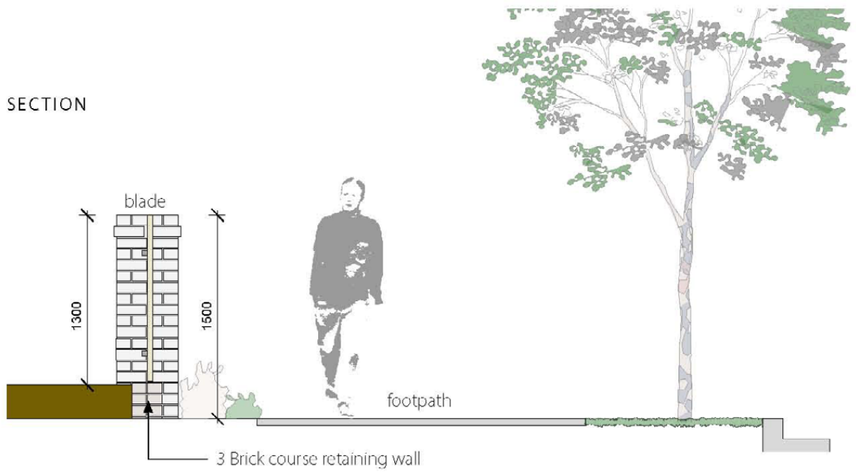
ELEVATION



PLAN



SECTION



CHARACTER IMAGE

BONNYRIGG LIVING COMMUNITIES FENCING STRATEGY

D Fence Type 3C

Scale 1:40 @ A3 Date 21.05.08 ISSUE D

0mm 400 800 1200 1600 2000

EDAW | AECOM

FENCE TYPE 3D

1800mm high vertical timber hardwood slat fence on steel frame with steel posts. Slats on one side only. Fence to provide 70% privacy.

Typical location: To side or rear of lots where a degree of privacy and safety is required.

FENCE TYPE 3E

1500mm high vertical timber hardwood slat fence on steel frame with steel posts. Slats on both sides. Fence to provide 90% privacy.

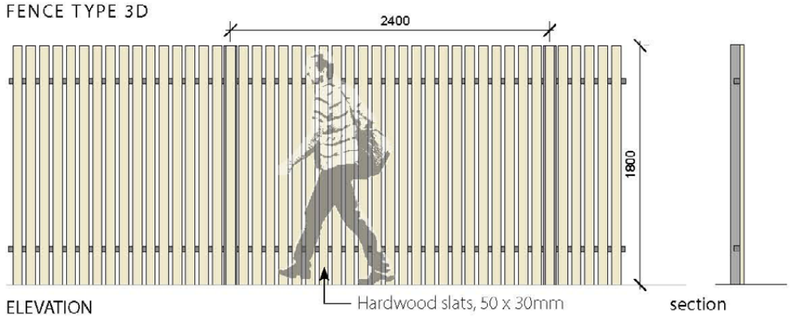
Typical location: To side or rear of lots where a degree of privacy and safety is required.

FENCE TYPE 3F

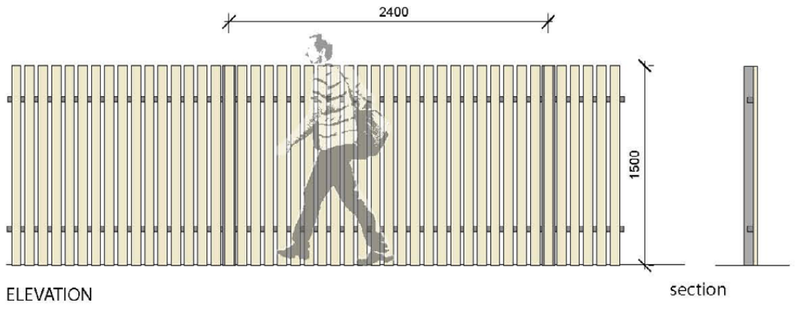
1200mm high vertical timber hardwood slat fence on steel frame with steel posts. Slats on one side only. Fence to provide screening reom rubbish bins.

Typical location: To side or rear of lots where a degree of privacy and safety is required.

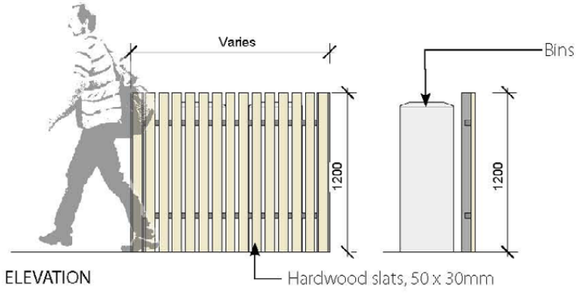
FENCE TYPE 3D

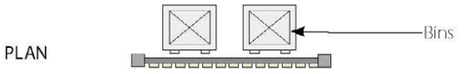


FENCE TYPE 3E



FENCE TYPE 3F





FENCE TYPE 3A &3C CHARACTER IMAGE

BONNYRIGG LIVING COMMUNITIES FENCING STRATEGY

D Fence Type 3D + E+F **Scale** 1:40 @ A3 **Date** 21.05.08 **ISSUE D**

0mm 400 800 1200 1600 2000

EDAW | AECOM

FENCE TYPE 4

1800mm high solid lapped and capped timber paling fence with timber posts.

Typical Location: To rear yards

CHARACTER IMAGE

BUNKER PARADE ELEVATION

Fence Type 1C | Fence Type 1C2 | Fence Type 1C

BONNYRIGG LIVING COMMUNITIES FENCING STRATEGY

D Bunker Parade Elevation

Scale 1:200 @ A3 Date 13.05.08 ISSUE D

0m 2 4 6 8 10

EDAW | AECOM

MIDBLOCK STREET FRONTAGE FENCE TYPE LOCATION PLAN

LEGEND

- Fence Type 1A
- Fence Type 1B
- Fence Type 1C
- Fence Type 1D
- Fence Type 3A
- Fence Type 3D

Fence Type 2 to lot boundary driveways

Fence Type 3B used for screening to POS

Fence Type 3C used for raised POS screening

Fence Type 3E used to devide front and back yards. Also used for raised POS screening

Fence Type 3F used for rubbish bin screening

Fence Type 4 to be used at rear and side boundaries for complete privacy screening

Note: To be read in conjunction with Bonnyrigg Fencing Strategy.

BONNYRIGG LIVING COMMUNITIES FENCING STRATEGY

D Fence Type Location Plan

Date 13.05.08 ISSUE D

EDAW | AECOM