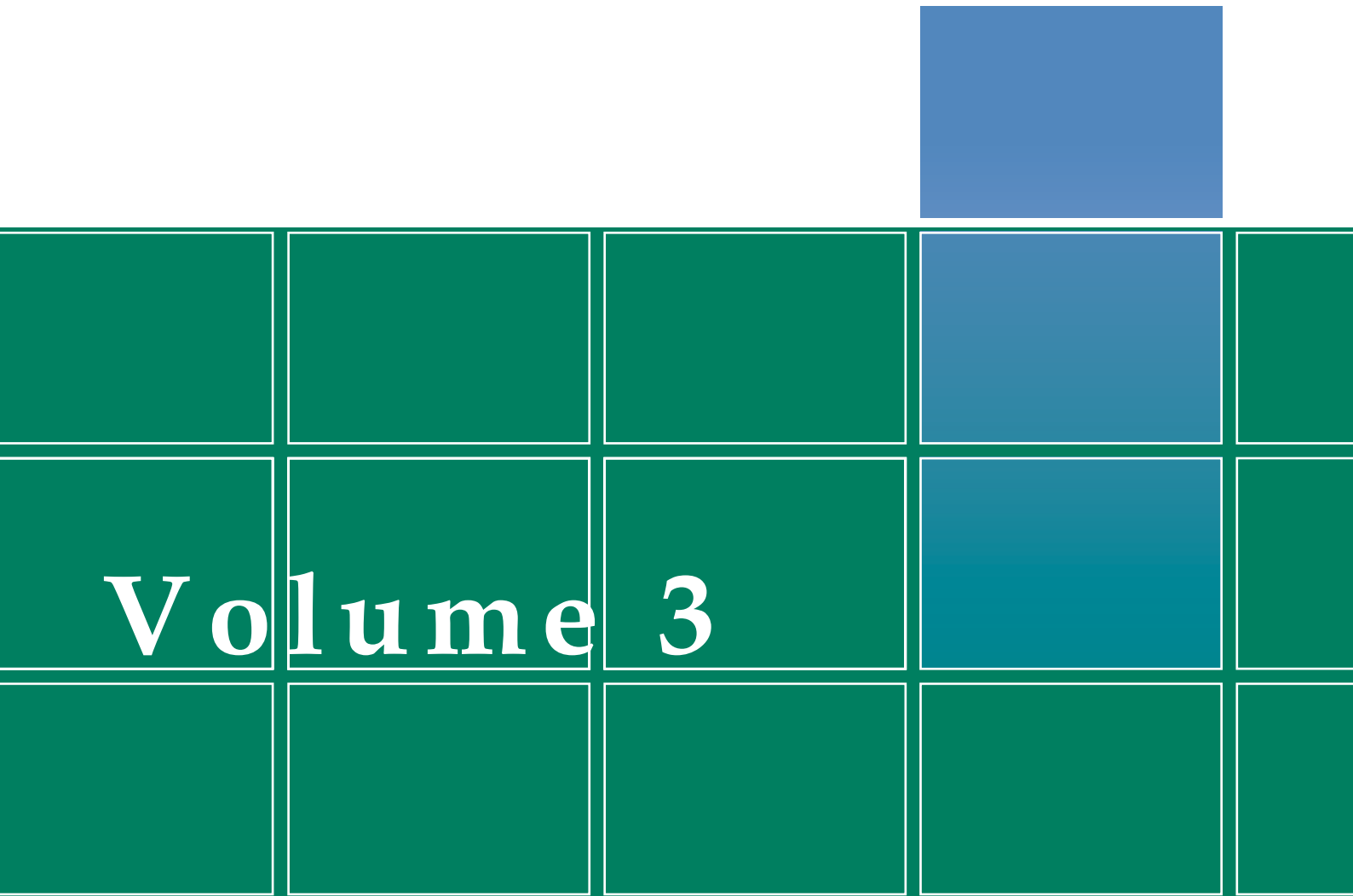
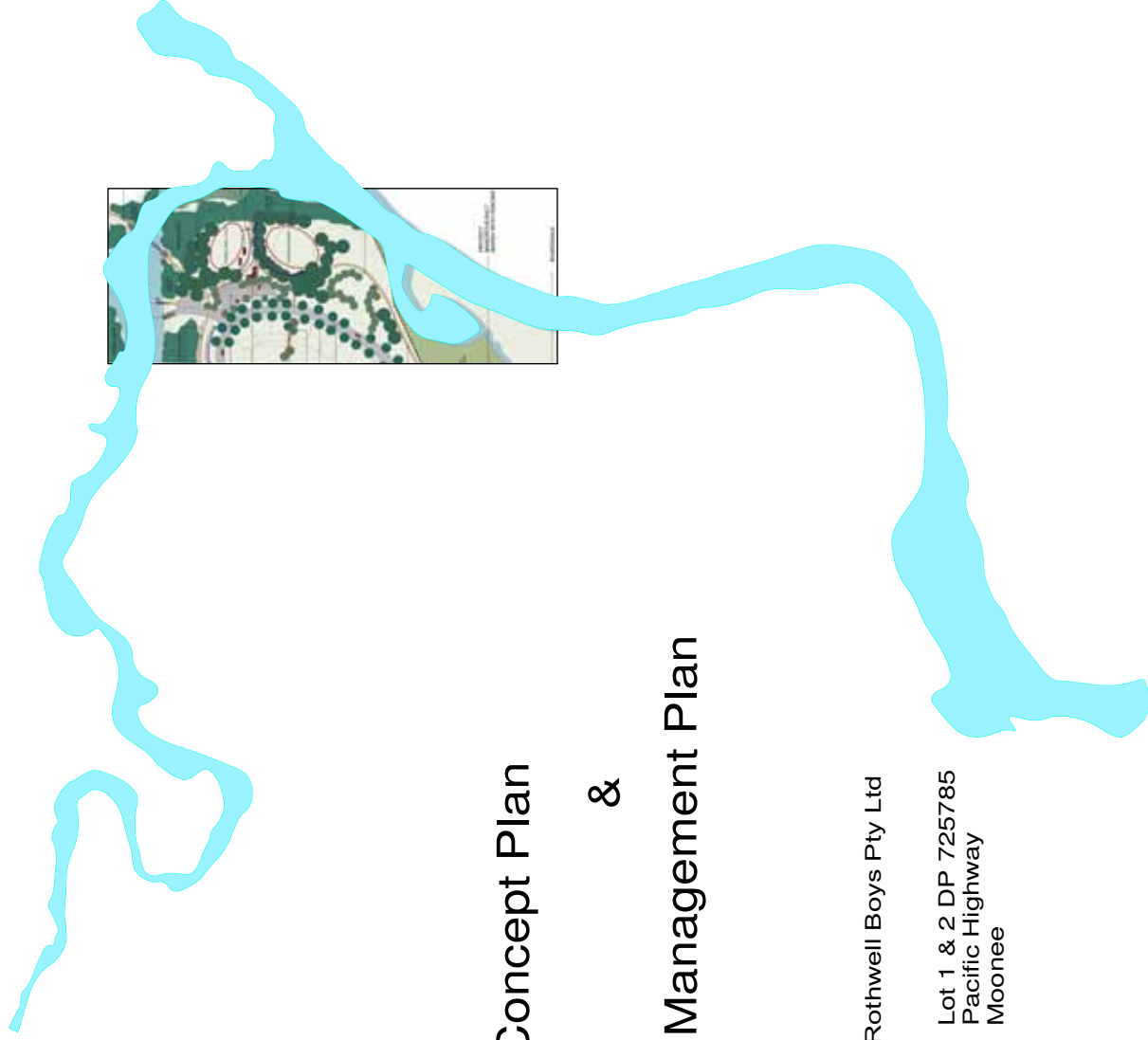




**Landscape
Concept Plan
and Open Space
Management Plan**



Landscape Concept Plan & Open Space Management Plan

Prepared for the: The Rothwell Boys Pty Ltd



Lot 1 & 2 DP 725785
Pacific Highway
Moonee



The Glades @ Moonee Beach

June 2007



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The Glades at Moonee - Theme

The Glades will be a high quality built environment, surrounded by open space, reflecting in character its beautiful natural coastal setting. The development where possible will enhance the sites many natural assets and create opportunities for people to enjoy them.

The Glades at Moonee Beach will exemplify high quality coastal living within an enhanced natural environment – the ultimate sea change.

The Glades at Moonee - Location

The Glades is situated 13km north of Coffs Harbour and 8km south of Woolgoolga on the Mid North Coast. The Glades has direct access to the Pacific Highway and is bordered on one side by Skinner's Creek and on another by Moonee Creek and the Moonee Beach Nature Reserve.

The Glades landscape is characterised by open undulating plains with scattered trees backed by vegetation and surrounding hills.

The Glades at Moonee - Objectives

- To create a landscape that compliments and strengthens the existing natural features of the Moonee region.
- To create a landscape open space system that is exciting to use, protects environmentally sensitive zones and species, and is relevant to the future use and habitation of the area.
- To create a professionally designed open space network that is easily managed.
- To develop a plan that is in keeping with Coffs Harbour City Council's Development Control Plan.
- To develop a plan that is in keeping with the NSW Rural Fire Service "Planning for Bushfire Protection" and the Department of Planning, Infrastructure and Natural Resources guidelines for development on the coast.
- To use best practise planning and design methods that are relevant to sensitive coastal landscape development.
- To facilitate the evolution of landscapes which are sympathetic to the proposed zoning of the site. Areas to be zoned for environmental protection will have management focused on optimising the vegetation rehabilitation assisted by protective fencing and controlled access. Areas denoted for high recreation use will have design and management focussed on providing quality facilities.
- To install features and provide information to residents that reinforce the understanding of the environment in which they live.



View along Skinner's Creek



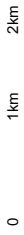
Rolling topography of the site



Location aerial photograph



Location map



The Glades at Moonee - Landscape Site Analysis

The Glades development site was analysed through an overlaying process of mapping various opportunities and constraints to determine the overall building envelope and the character of the open space network.

The overriding factor in determining the style and placement of facilities within the open space system was how to maximise benefits to users while protecting areas of environmental sensitivity.

The Glades at Moonee - Visual Impact

An initial visual assessment was made of the development area to determine impacts on surrounding areas. The visual assessment is summarised on Plan1 Landscape Visual Assessment on page 4.

Due to a combination of rolling topography, existing vegetation stands, enhancement of vegetation and the site not being readily seen from external locations, The Glades was deemed to have a low visual impact on the landscape.

The Glades at Moonee - Site Constraints & Features

The following factors summarised the important elements that guide the development of the Landscape Concept Plan. All elements are mapped on Plan 2 Existing Site Constraints & Features, page 5.

- Presence of Wallum Frog let (Crinia tinnula) and its habitat. The Wallum frog let is classified as vulnerable and this concept plan aims to instigate conservation actions that will enable the frog let to coexist within the development. It is possible that this development may even improve the habitat of the frog let through removal of cattle and the rehabilitation of surrounding native vegetation in habitat areas.
- Skinners Creek and Moonee Creek are both important estuarine systems which flow into and form part of the Solitary Islands Marine Park. The introduction of enhanced vegetation buffers will help to protect these resources.
- Flood prone areas are excluded from the areas to be developed and sensitive wetlands are protected through the rehabilitation of vegetation.
- The central stand of mature vegetation is retained as an important wildlife corridor and will nestle the built form into landscape

- Presence of Osprey (Pandion haliaetus) nesting site. This species is also classified as vulnerable and development is kept a minimum of 100 metres away from nests.

In response to these features and constraints the development avoids most ecologically sensitive areas and in some situations the proposed landscape concept plan enhances the protection of all the natural features.



Wallum Frog let (Crinia tinnula) – Threatened species



Osprey (Pandion haliaetus) – Threatened species



Moonee Creek has a 100 metre buffer from river edge to building envelope. In some places this extends to 245 metres to avoid low-lying areas. Skinners Creek has min 50m buffer. In some places this extends to over 150m.



Central wildlife corridor retained and protected through permanent fencing and bollards. Pedestrian access will be facilitated along constructed pathway that formalises an existing track.



Mangrove communities all contained within buffer areas. Intensive recreation use is kept away with low impact recreation on riverbank guided along constructed pathways



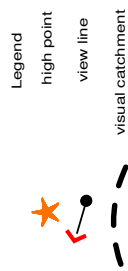
Wallum Frog let habitat protected by fencing during construction. Five year native vegetation rehabilitation program will strengthen habitat.



existing vegetation provides a backdrop to views

views along hwy are blocked by existing vegetation and hillside

existing vegetation provides a backdrop to views



Visual Assessment

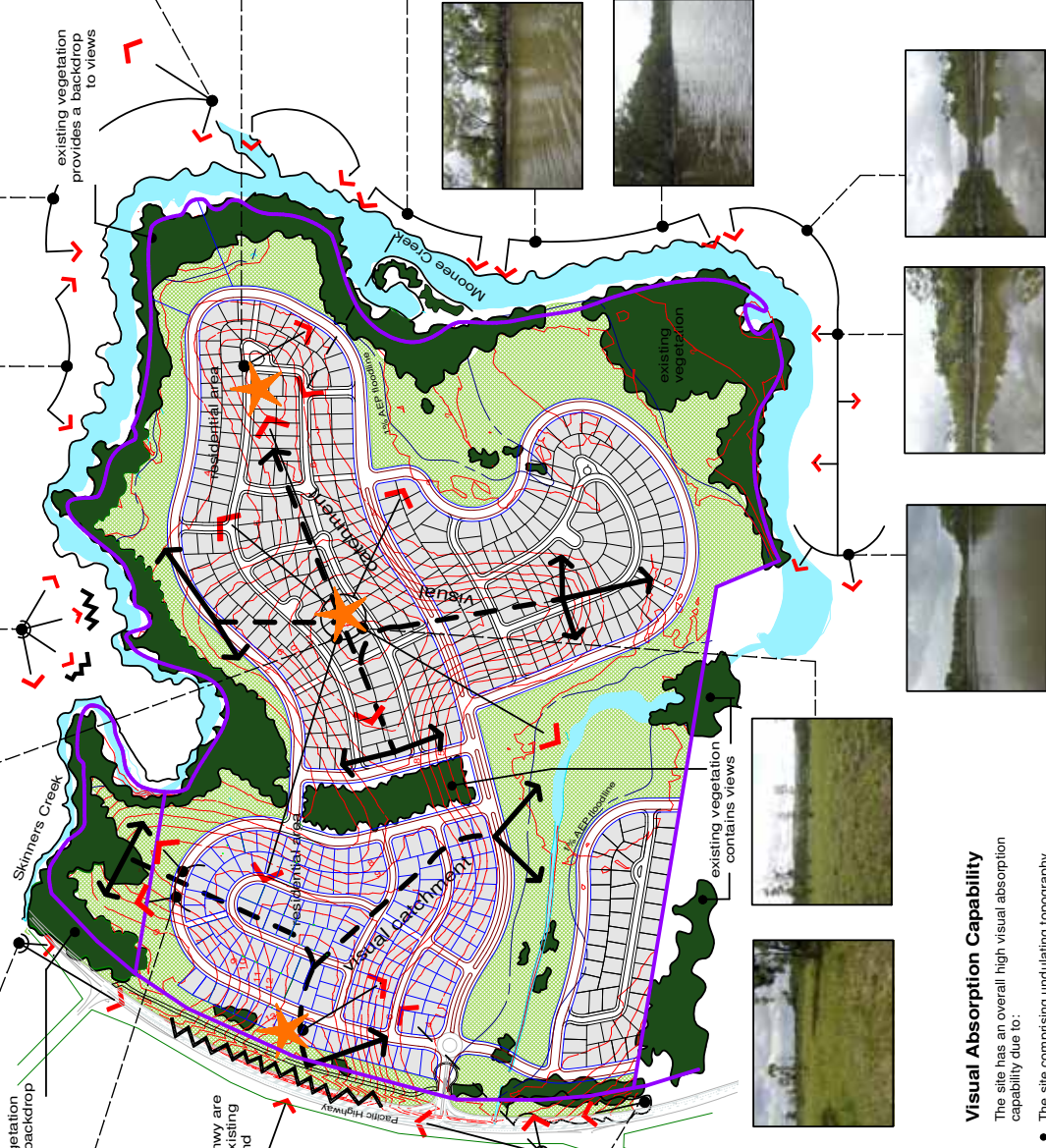
Existing views into and out of the site are over rolling hills backed by vegetation and or surrounding hills

The site is broken into discrete visual catchment areas

Views along the highway into the site are mostly filtered by a combination of existing vegetation and the fact that the hwy is cut into the hill side

Views along Moonee Creek into the site are constrained to the foreground and some mid ground views of creek edge vegetation made up of dense mangrove or eucalypt communities

Views along Skinners Creek into the site are confined solely to the foreground and are intimate in nature. Views of the vegetated bank edge are tunnelled along the creek.



Visual Impact

Overall the natural appeal and experience of Moonee and Skinners Creek will not be significantly affected. Visual impact will be centred at points where recreation nodes are introduced, elsewhere the enhancement of buffer zones should ensure that suburban blocks are not viewed from the creek environment

Due to a combination of topography, existing vegetation cover and proposed vegetation, the development will not have a significant visual impact when viewed from external points such as along creeks and highway.

The development itself will be broken into discreet parcels backed by vegetation and undulating hills. All proposed buildings are restricted to 2 storey, semi detached, low density housing, in line with CHCC's DCP. Small / low building forms combined with streetscape planting will ensure that a low key relaxed coastal living environment will prevail.

Visual Absorption Capability

The site has an overall high visual absorption capability due to:

- The site comprising undulating topography
- Existing vegetation location and density
- The site not readily being seen from any external routes or locations

The Glades

northwest corner has recorded koala, yellow bellied glider and Eucalyptus globosa (White Stringy bark) and will be protected within buffer

vegetation within 20m highway buffer will be retained and enhanced where ever possible

development envelope has minimal impact on existing mature stands of vegetation

central, tall closed forest is preserved to form a green spine and circulation routes. The spine also enhances wildlife movement through the site

Development avoids the 1% AEP floodline in most situations

Area of wallum froglet foraging habitat. Development envelope and main access road successfully avoid impinging into this area

known Osprey nest surrounded by 100 metre buffer. Area also features the Southern myotis, Little bent-wing bat and Common bent-wing bat. Development and main recreation nodes are kept away

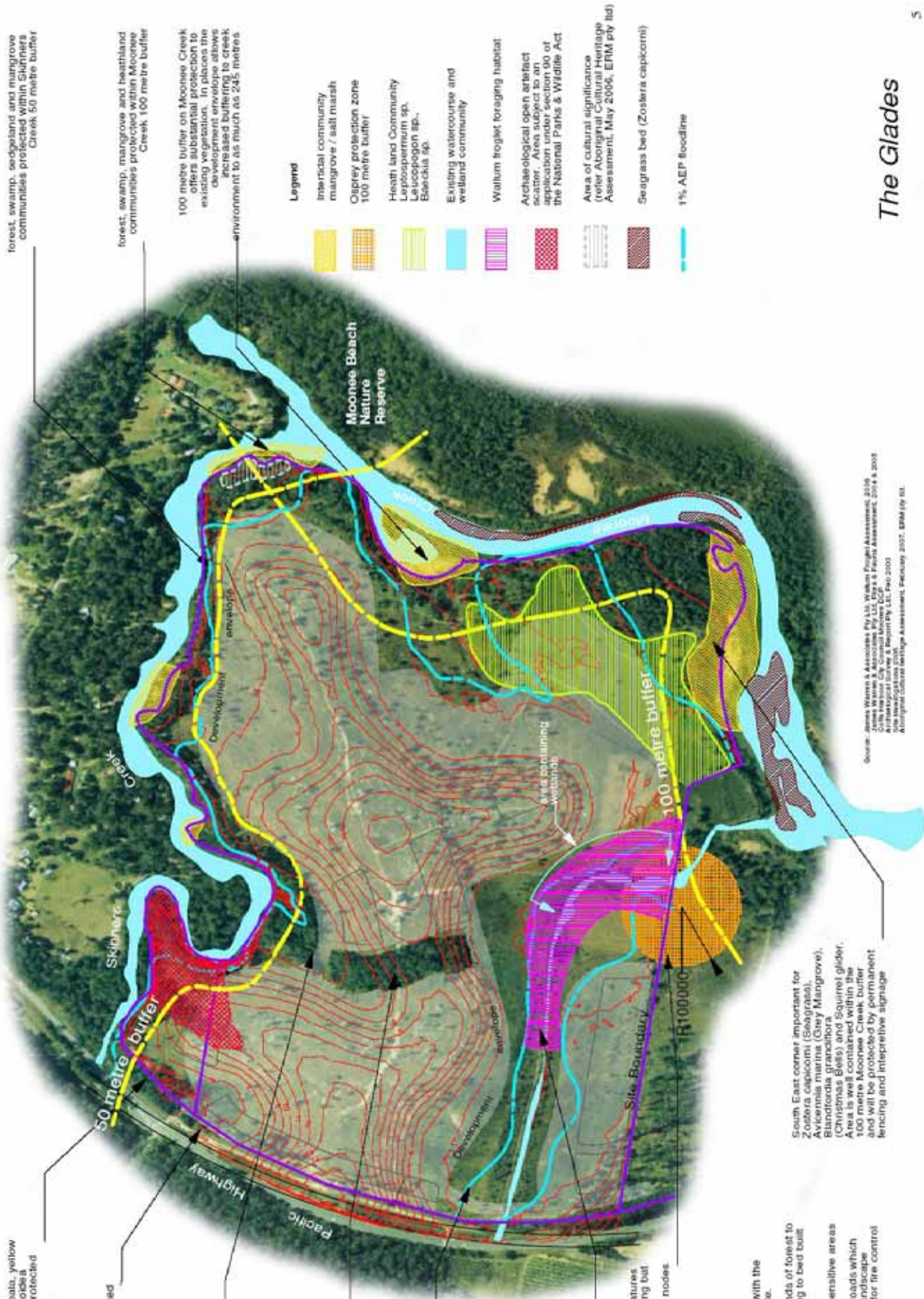
General Features

Development sits sympathetically with the landscape characteristics of the site.

The layout utilises the existing stands of forest to encompass urban dwellings helping to bed built forms into the topography

Development avoids ecologically sensitive areas

All of development has perimeter roads which aim to protect the integrity of the landscape while doubling as a safety feature for fire control



Source: James Warren & Associates Pty Ltd, Wallum Project Assessment, 2006
James Warren & Associates Pty Ltd, ERM & Parks Assessment, 2004 & 2008
James Warren & Associates Pty Ltd, ERM & Parks Assessment, 2004 & 2008
At Macquarie Street, Sydney NSW 2000
Site investigations 2005
Aboriginal Cultural Heritage Assessment, February 2007, BPA 001 001

South East corner important for
Zostera capricorni (Seagrass),
Avicennia marina (Grey Mangrove),
Blandfordia gracilliora
(Christmas Bells) and Squirrel glider.
Area is well contained within the
100 metre Moonee Creek buffer
and will be protected by permanent
fencing and interpretive signage

The Glades

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The Glades – Landscape Character

The character of the proposed open space network draws on the elements commonly associated with the landscape and lifestyle of the Mid North Coast: Beaches, creeks, estuaries, eucalypt and malleeuca forests, relaxed living by the coast. The proposed landscape of The Glades seeks to mesh these themes into its urban fabric to make it one with its setting.

Theme



View over Moonee beach and Moonee Beach Nature Reserve, the theme of bush beside the sea is captured in this scene and will be an attraction to those who reside at The Glades



Relaxed contemplation of life by the creek, and enjoyment of outdoor life will be features of The Glades lifestyle

Materials



All elements will have relevance to location. Materials and furniture will reflect colours and textures in the setting. Environment and enjoyment of outdoor living will form the underlying theme to open space areas and elements found within those areas.

Colour

The major colours used throughout The Glades will be:

Dark brown and or dark timber stain finish
Grey, Cream or stone colour - Rich olive green highlights



Moonee Creek



Eucalypt forest



Skinnners Creek

Colours and materials inspired by site features.

The Glades - Broad scale Open Space Network Vegetation Management Plan

A key to the successful development of the Glades rests with the successful development and management of the Open Space Network. Its value in maintaining a high standard of living in a peaceful coastal environment cannot be undervalued. The Glades recognises this importance and believes its treatment of open space areas will set a new standard on the mid north coast and allow Council's vision for this area to be realised.

The design for the open space system and the location of recreation facilities is a refinement of that put forward in Coffs Harbour City Council's Development Control Plan for Moonee.

Details on vegetation planting and open space management are shown on:

- Plan 3 Broad Scale Open Space Type, p.8
- Plan 4 Vegetation Management, p.9
- Plan 5 Streetscape, p.12 and
- Plan 8 Landscape Staging, p.31

The plans should be read in conjunction with the following text.

The proposed open space network can be divided into three broad types and management tends to reflect this broad scale categorisation

Open Space – Category 1 Natural Areas

Open space that is natural in character and will be maintained chiefly for environmental protection and rehabilitation purposes. These areas comprise buffer zones with the buffer that adjoins Moonee Creek ultimately becoming part of a Council Reserve System that includes the Solitary Islands Coastal Walk. These areas contain low impact recreation facilities such as pathways or no facilities where access is actively discouraged.

View from Moonee Creek to South East corner of The Glades site that will be protected via fencing and controlled access. Mangroves and other sensitive wetland species occur here along with the Osprey nest site.



The existing Wetland will also be surrounded by a minimum 20m rehabilitated buffer. Boardwalks will provide pedestrian access around these important ecological features. Refer Plan 2 Existing Site constraints & Features, page 5 for location of wetlands.



Rehabilitation of these areas will employ a combination of fenced areas either permanently or temporarily to allow the existing seed stock to re-establish and active bush regeneration programs so that these areas are robust prior to occupation of allotments.

Open Space – Category 2 Residential and Recreation Areas

Category 2 includes open space that will be park like in character within developed areas and maintained primarily for recreation use and hazard reduction purposes. Native vegetation within creek buffers will be strengthened and management directed at providing controlled access. Planting within these areas fulfils a variety of roles; shade, colour, screening, accentuating arrival and place, stormwater filtering, aesthetic improvement etc. The majority of planting will utilise plants grown from seed collected on site or source plants that have a local provenance (refer Appendix for species list). Management in these areas is directed at maintaining cared for landscapes i.e. grassed areas are mown, planted areas are watered at the establishment phase and weed presence is monitored.

Specifically these areas include;

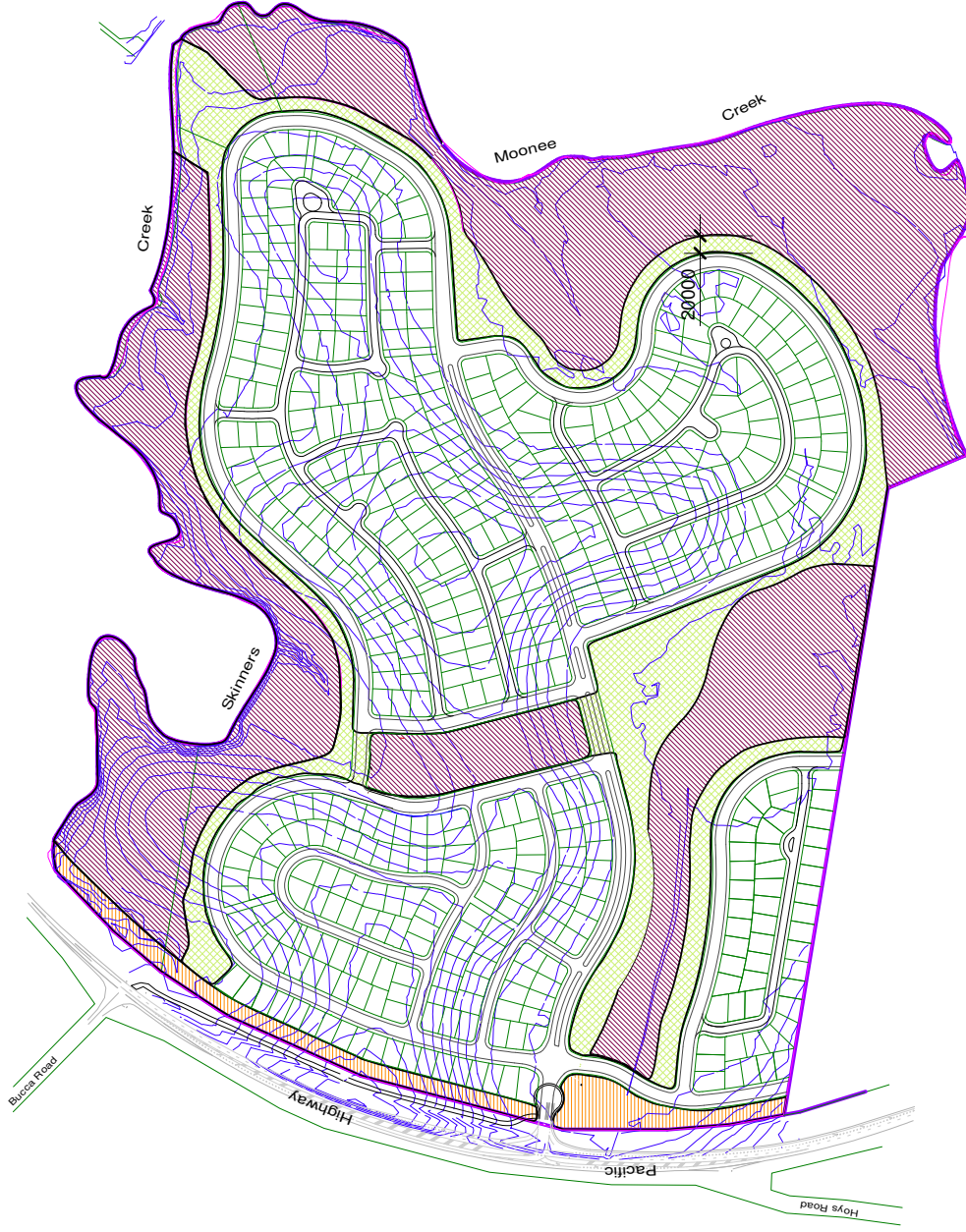
- Streetscape (street trees and grassed road easements)
- Median strip/swales, roundabouts
- The asset protection zone in the form of grouped tree planting within mown grassed areas and stormwater filtering swales. Typically this area is a 20m wide zone extending from the road that surrounds the building envelope.
- Two major recreation nodes
- Bands of rehabilitated native vegetation

Open Space – Category 3 Environmental Scenic Hwy Buffer

The Environmental Scenic Buffer that adjoins the Pacific Highway will be planted and maintained to best provide visual screening from the highway bearing in mind the restrictions that all the services placed within the buffer have on planting. The 20m wide buffer will be planted where possible with mid and over storey native plants (refer Appendix for species list). Noise attenuation barriers that combine earth mounding and fencing will also feature in this zone. Refer page 10 for Plan and sections for Environmental Scenic Hwy Buffer which detail the treatment of the landscape within this category.



Highway corridor showing road pavement cut into hill and remnant vegetation providing a filtered screen into site.



Open Space - Category 1 Natural Areas

Development and management of open space is directed at environmental protection, vegetation rehabilitation and improving habitat ecology

Open Space - Category 2 Residential and Recreation Areas

Development and management of open space is focussed on providing appropriate recreation facilities, asset protection and enhancing existing vegetation

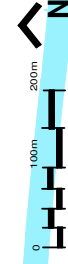
Open Space - Category 3 Environmental Scenic Highway Buffer

Emphasis of development and management of open space is on screening, noise abatement and providing a connecting pedestrian / cycle route to access areas north and south of the site

Note: Open Space makes up approx. 40% of the total site area

The Glades

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Plan 3 Broad Scale Open Space Type

To protect presence of Artefact scatters and creek vegetation this corner of site will be permanently fenced and access controlled via constructed pathways

In sensitive areas buffers to Skinners Creek are increased from the minimum 50 metres

20 metre highway buffer revegetated as thickly as APZ and service constraints will allow

modification of existing vegetation will occur within highway buffer zone New roadside planting will accompany the introduction of roundabout entry

Thinning of trees and understorey to reduce fire hazard

Landscape Features

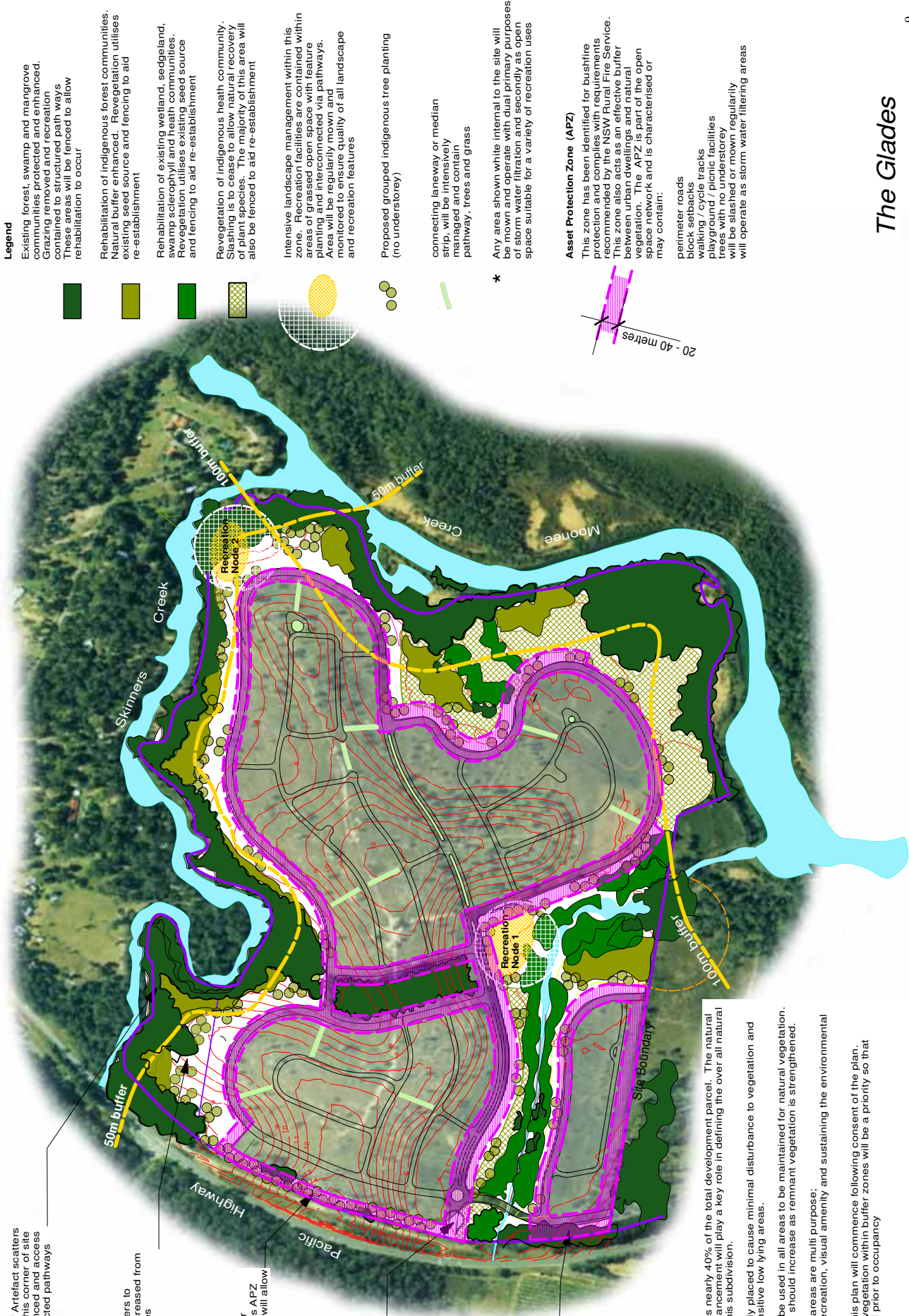
Open space comprises nearly 40% of the total development parcel. The natural landscape and its enhancement will play a key role in defining the over all natural coastal character of this subdivision.

Built areas are logically placed to cause minimal disturbance to vegetation and be well away from sensitive low lying areas.

Native species are to be used in all areas to be maintained for natural vegetation. Biodiversity of the site should increase as remnant vegetation is strengthened.

All green open space areas are multi purpose; filtering stormwater, recreation, visual amenity and sustaining the environmental integrity of the site

All work outlined on this plan will commence following consent of the plan. The strengthening of vegetation within buffer zones will be a priority so that plants are established prior to occupation



Legend

Existing forest, swamp and mangrove communities protected and enhanced. Grazing removed and recreation opportunities secured path ways. These areas will be fenced to allow rehabilitation to occur

Rehabilitation of indigenous forest communities. Natural buffer enhanced. Revegetation utilises existing seed source and fencing to aid re-establishment

Rehabilitation of existing wetland, sedgeland, swamp sclerophyll and heath communities. Revegetation utilises existing seed source and fencing to aid re-establishment

Revegetation of indigenous heath community. Slashing is to cease to allow natural recovery of plant species. The majority of this area will also be fenced to aid re-establishment

Intensive landscape management within this zone. Recreation facilities are contained within areas of grassed open space with feature planting and interconnected via pathways. Area will be regularly mown and monitored to ensure quality of all landscape and recreation features

Proposed grouped indigenous tree planting (no understorey)

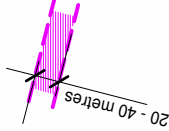
connecting laneway or median strip, will be intensively managed and contain pathway, trees and grass

* Any area shown white internal to the site will be mown and operate with dual primary purposes of storm water filtration and secondly as open space suitable for a variety of recreation uses

Asset Protection Zone (APZ)

This zone has been identified for bushfire protection and complies with requirements recommended by the NSW Rural Fire Service. The zone is located between the natural buffer between urban dwellings and natural vegetation. The APZ is part of the open space network and is characterised or may contain:

- perimeter roads
- block setbacks
- walking / cycle tracks
- playground / picnic facilities
- trees with no understorey
- will be slashed or mown regularly
- will operate as storm water filtering areas



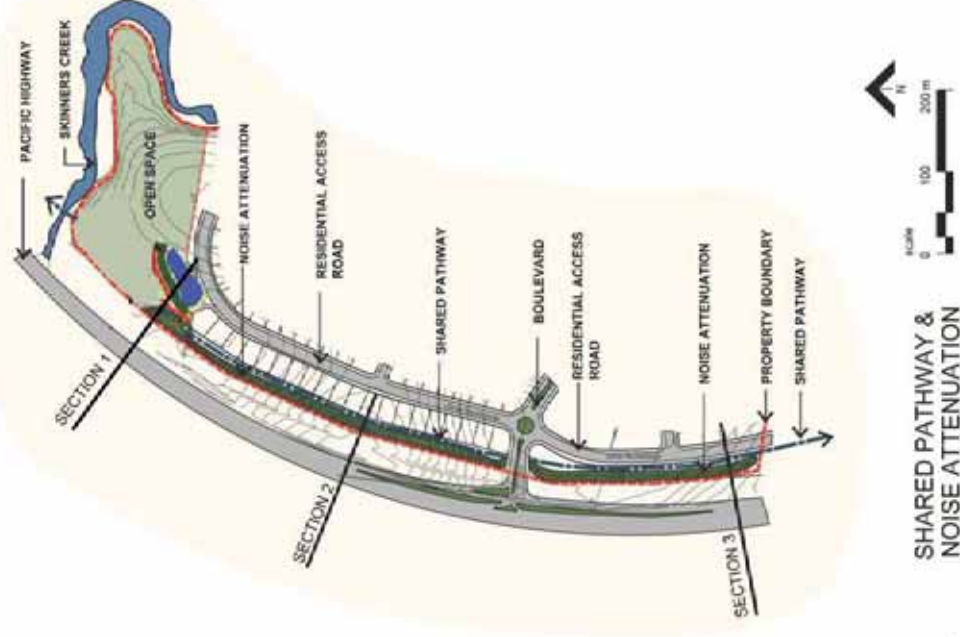
The Glades



Environmental Scenic Highway Buffer

Landscape Treatment

The Glades



The Glades – Detail Landscape Elements of Category 2 & 3

Streetscape

The aim in streetscape design is to develop a comprehensive street planting scheme, which adds colour and softness to the built form and follows Coffs Harbour City Councils Street Tree Masterplan. (Refer Plan 5 Streetscape page 12 and Typical Street Sections on page 13)



Avenue style tree planting along roadways will have a formal layout Foliage will screen and soften built form. Melaleuca leucadendra (Weeping Paperbark) is shown in this photo and will be used as a street tree within The Glades.



Local laneways to provide access through suburban blocks will contain concrete footpaths and hardy plantings

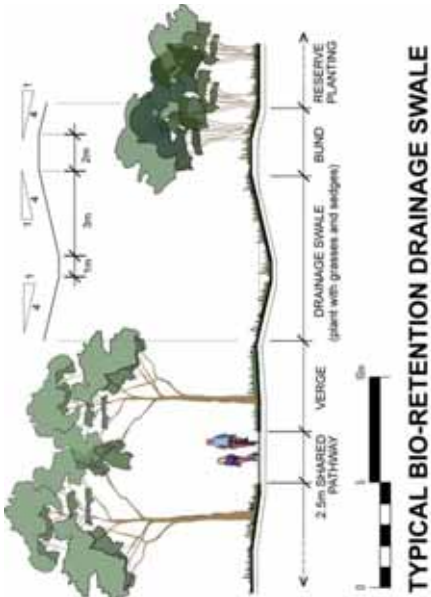
Road medians will contain trees and low foliage plants with places for safe pedestrian crossing



Water Sensitive Urban design



A combination of tree planting with mown grassed verges and bioretention swales will typify the road landscape for those streets that adjoin open space areas. In some places access will be further controlled through the placement of bollards



Drainage overflow area designed to allow water to filter and slow before percolating over grassed bioretention areas



Roundabout planting areas will contain trees with low foliage plants combined with hardwearing landscape material such as concrete pavement.

Legend

Existing Vegetation- comprising
dry sclerophyll forest/woodland communities
swamp sclerophyll communities and
intertidal communities



Boulevard Trees - Indicative species
(refer appendix 2 for full species list)

Lophostemon confertus (Brush Box)
Backhousia citrifolia (Lemon Scented Myrtle)
Findsia australis (Native Teak)



Avenue Trees - Indicative species

Melaleuca quinquenervia (Broad Leaved Paper Bark)
Buckinghamiana celissima (Ivory Curl)
Eucalyptus robusta (Swamp Mahogany)
Eucalyptus microcorys (Tallow Wood)
Acmena smithii (Lilly-pilly)
Lophostemon confertus (Brush Box)



Street and Connecting Pathway Trees

Melaleuca sieberi (Sieber's Paper Bark)
Melaleuca leucodendra (Weeping Paper Bark)
Lophostemon suaveolens (Swamp Turpentine)
Corymbia australis (Brush Cherry)
Syzium australe (Brush Cherry)
Tristanopsis laurina (Kanuka)
Syzgium luehmianii (Riberry)
Callistemon salignus (White Bottlebrush)
Callistemon "Dawson River Weeper"



Plan Theme

Streetscape planting utilises species found on site or found within the local area.
All species are native.

Accent trees are used to visually highlight thoroughfares.

Colour and size of species will vary according to the scale of the street to be landscaped.

The aim of streetscape planting is to provide shade and colour to the development and soften the built form.

In line with Coffs Harbour City Council's Development Control Plan for the Moonsee Release Area all proposed buildings are low density, semi detached and restricted to a maximum of 2 storeys. These building controls combined with streetscape planting will create a low impact, natural coastal living environment.

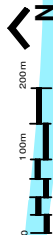
Planting is in keeping with Coffs Harbour City Council's Street Tree Masterplan

Roads adjoining public open space will utilise planting and bollards to control access
Open space that immediately adjoins roadways will be utilised for stormwater run off and consist of mowable grassed swales



The Glades

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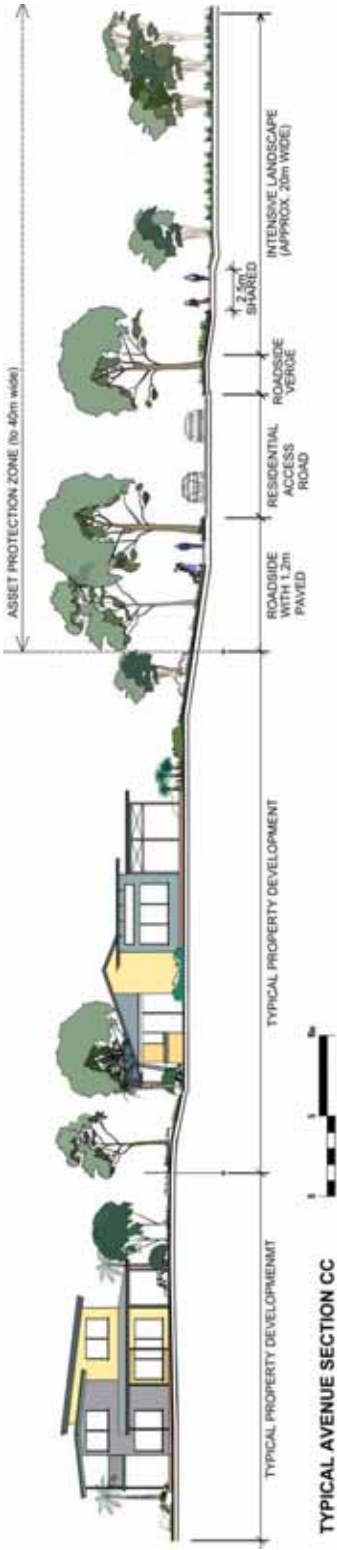
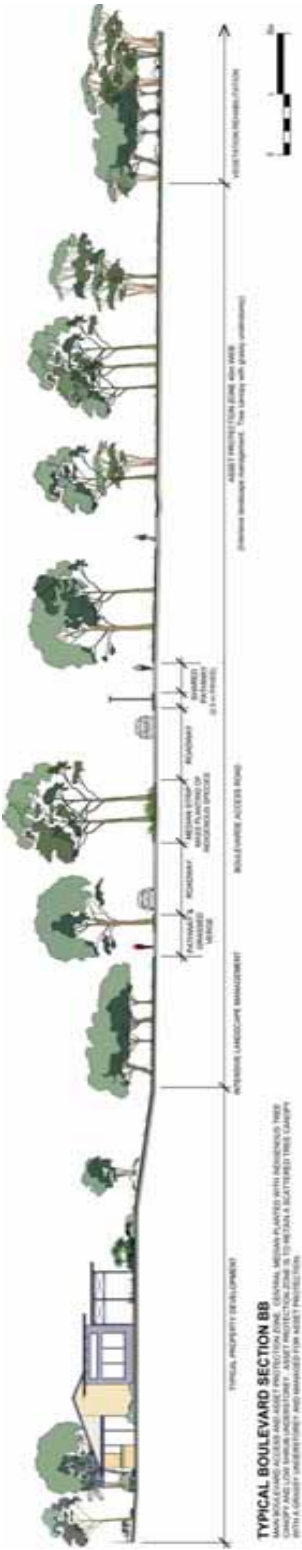
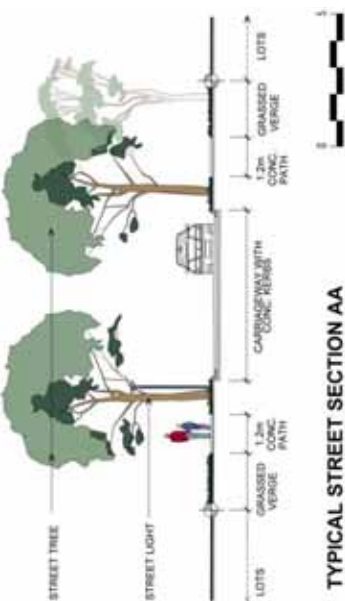
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Plan 5 Streetscape

For location of sections refer Plan 5 Streetscape on page 12.



Asset Protection Zone

An asset protection zone surrounds the Glade's building allotment envelope. The aim of this area is to protect private property and lives. The Glades layout optimises the safety of property by surrounding the development with a road network that will ensure ease of maintenance to all asset protection areas. The asset protection zone includes housing setbacks, roadway, roadway easement and mown grassed areas.



Typical pathway within the asset protection zone with mown grassed understorey and scattered overstorey plants.

Entry Statement

The entry statement will reflect the character and high quality of The Glades development. The statement will utilise low maintenance materials such as concrete pavement, aggregate and stone combined with hardy planting that is in keeping with its setting. Planting through its colour and strength will indicate arrival: refer Entry Statement Plan on page 15 for detail.



A low stonewall or rendered concrete block wall with bold lettering will denote The Glades entry. This will be sited on private land

Hardy native planting used in a strong theme combine with low maintenance hard landscaping elements will be a feature of the entry area.



Pedestrian Crossing

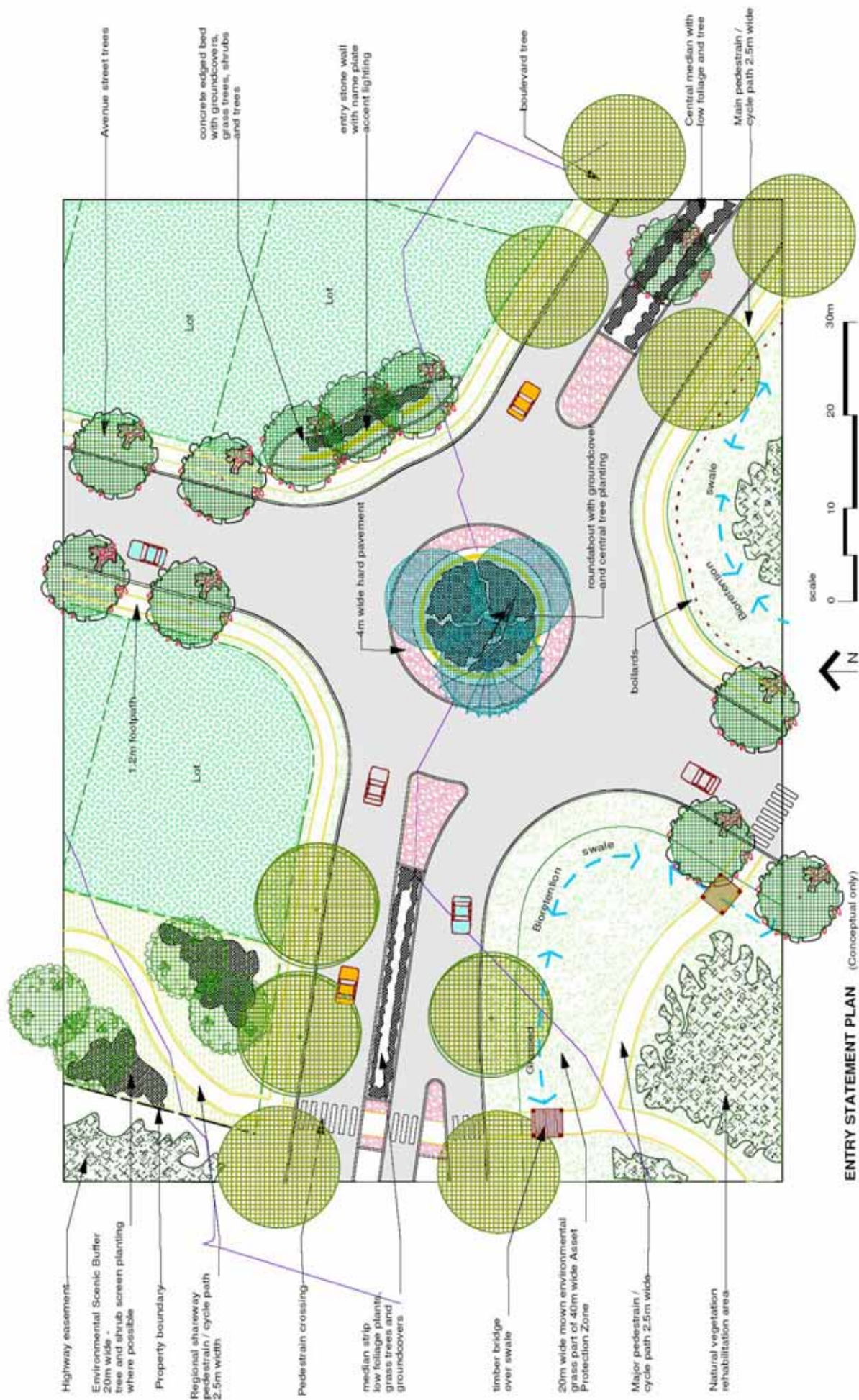
Pedestrian movement will have a visual prominence at road crossings.



Car park

Car parks will have shade trees and screen planting to improve aesthetic appearance and safety





ENTRY STATEMENT PLAN (Conceptual only)

The Glades - Path Network and Recreation Facilities

The location and details about path networks and recreation facilities can be seen on Plan 6 Path Network & Development Facilities, page 17 & Plan 7 Landscape Concept Plan, page 18. The plans should be viewed in combination with the following text. There are 2 major recreation nodes detailed on page 21 and 23.

Paths

A path network that is accompanied by interpretative signage about the environment will surround the development. The path will also have fitness trail equipment installed at recreation node 2 and be interlinked with pathways contained within the urban areas.

The proposed network of paths compliments the Coffs Harbour City Council's Open Space and Circulation Network as part of the Development Control Plan for Moonee.

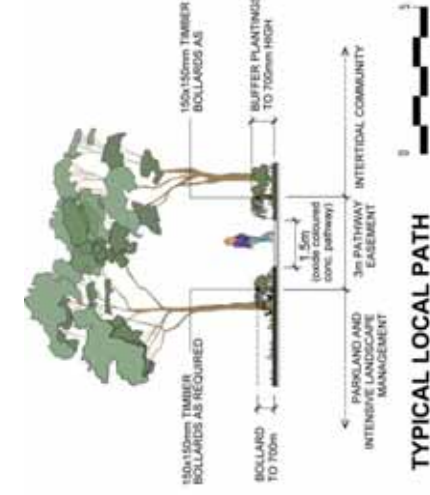
Pathways will reflect in nature their location. In natural settings paths will be a combination of oxide coloured concrete and concrete pavers. Within urban, high use areas paths will be concrete. Boardwalks will be provided over low-lying wet areas. Major shareways will be 2 – 2.5m wide. Local connecting pathways will be between 1.2 – 1.5m wide.



Major pedestrian paths within the urban areas will be concrete, presenting minimal maintenance issues in the future.



Paths will link open space areas, with bollards and fencing used to direct access where desired



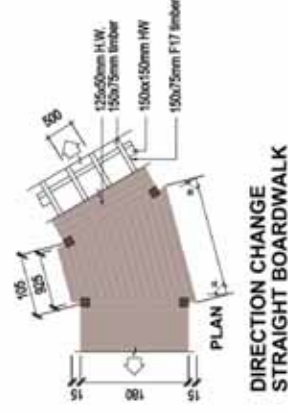
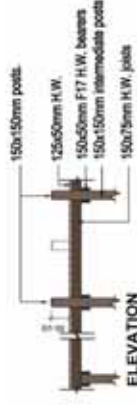
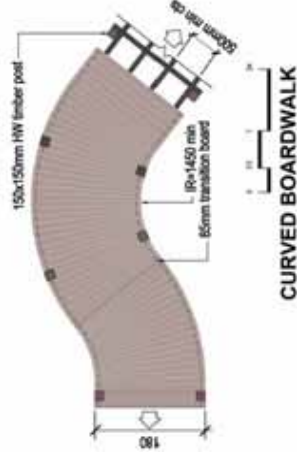
Charcoal concrete pavers
to be used at feature
locations

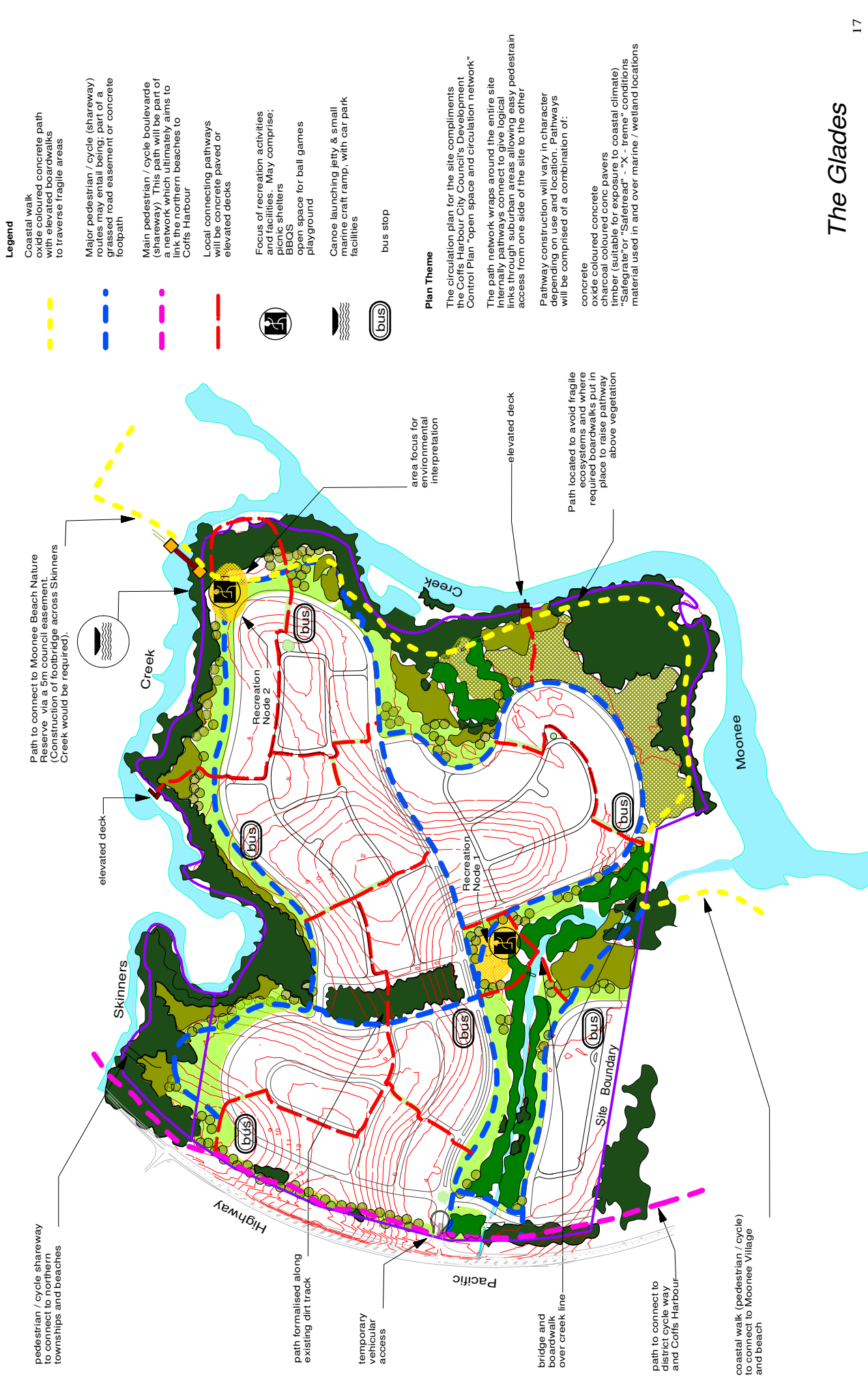
Boardwalks

Boardwalks will be an important feature of the path network at the Glades. They will principally be low and gently curving hard wood structures. Within areas that are directly exposed to the estuarine environment the use of "safegate" (Pultruded fibreglass and resin composite) as a decking material will be employed. Opportunities to interact with birds, animals and plant communities will be maximised yet well controlled along these boardwalks.



Possible platforms placed within wetland to study bird life





The Glades

Plan Theme

The circulation plan for the site complements the Coffs Harbour City Council's Development Control Plan "open space and circulation network"

The path network wraps around the entire site internally pathways connect to give logical links through suburban areas allowing easy pedestrian access from one side of the site to the other

Pathway construction will vary in character depending on use and location. Pathways will be comprised of a combination of:

- concrete
- oxide coloured concrete
- charcoal coloured conc pavers
- timber (suitable for exposure to coastal climate)
- "Safegate" or "Safetread" - "X-treme" conditions material used in and over marine / wetland locations



Bridges



Two low hardwood timber footbridges will transverse the site's internal creek line to give access from the northern part of The Glades to the south and Moonee village



A cable stayed hot dipped galvanised bridge with hard wood or "Safelead" decking may be a suitable option to span Skinners Creek restricting the disturbance of the creek to abutment areas only.

This example shows a footbridge spanning a similar distance to that required to cross Skinners Creek. This bridge will be an important feature of the Coastal Walk as proposed by the Coffs Harbour City Council Development Control Plan. Refer pages 22 & 23 for bridge location.

Permanent Entry Bridge

Permanent entry to the site will in the long term be gained from the south via a bridge (refer Plan 5 Streetscape page 12 for location). This bridge will compliment other built features and give additional pedestrian access to and from the site, whilst avoiding sensitive Wallum Frog let habitat.



Possible bridge format with pedestrian access gained along wide concrete paths. This footpath will be a part of the regional shareway path network.

The Glades - Structures

Recreation Facilities

Recreation facilities are sited in accordance with the Councils Development Control Plan. Facilities are also located to avoid sensitive areas and be logically connected to particular neighbourhoods. All facilities are for public use and will be accessible to all.

Facilities include:

Recreation Node 1 (Refer Recreation Node1 – Facility Plan p21)

- 2 Picnic Shelters
- Amenities block
- Electric BBQs
- Seating
- Lighting
- Water
- Young children's playground
- Older children's facility; e.g basketball hoop and half court or "Balloon Toss Tower"
- Large mown open space area for ball games
- Rubbish bins
- Car park
- Bicycle parking facility

Recreation Node 2 - Conceptual Only (Refer Recreation Node 2 - Facility Plan p22 &23)

Recreation Node 2 is conceptual only and subject to further consultation with the Local Aboriginal Lands Council.

Recreation node 2 focuses most of the structured facilities for aquatic activities at this location, there by limiting disturbance of the natural environment to this one area (sensitive mangrove and salt marsh communities are avoided). The facilities provided will be quality designed, meet Australian standards and suitable for the expected population use.

- Interpretive information shelter
- Amenities block
- Small playground that has environmental theme
- Picnic gazebos
- Electric BBQs
- Car park
- Small craft boat ramp
- Seating area close to creek
- Canoe walk in launch jetty
- Bicycle parking facility
- Fitness equipment
- Water

- Lighting
- Bicycle parking facility
- Rubbish bins

Cantilevered hardwood decks are provided at two other locations (refer Plan 7 Landscape Concept Plan, page 18). This is to give controlled structured access to both Moonee and Skimmers creek at specific points to enable fishing to be undertaken without damage to the bank.

Playgrounds

Playgrounds are aimed at catering for as wide an age group as possible. At Recreation Node 2 the playground will contain play that involves an understanding and interaction with the environment. Interpretative material will also be installed for public awareness of the fragile ecosystems that exist on the coast.



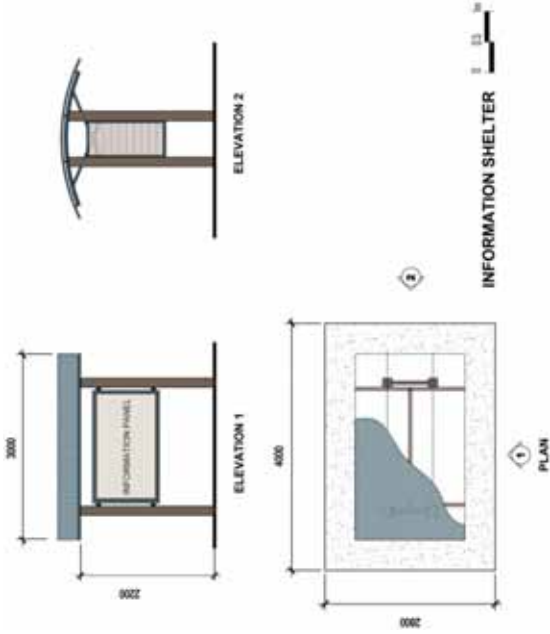
of this playground. All playground equipment and soft-fall areas will conform to Australian standards.



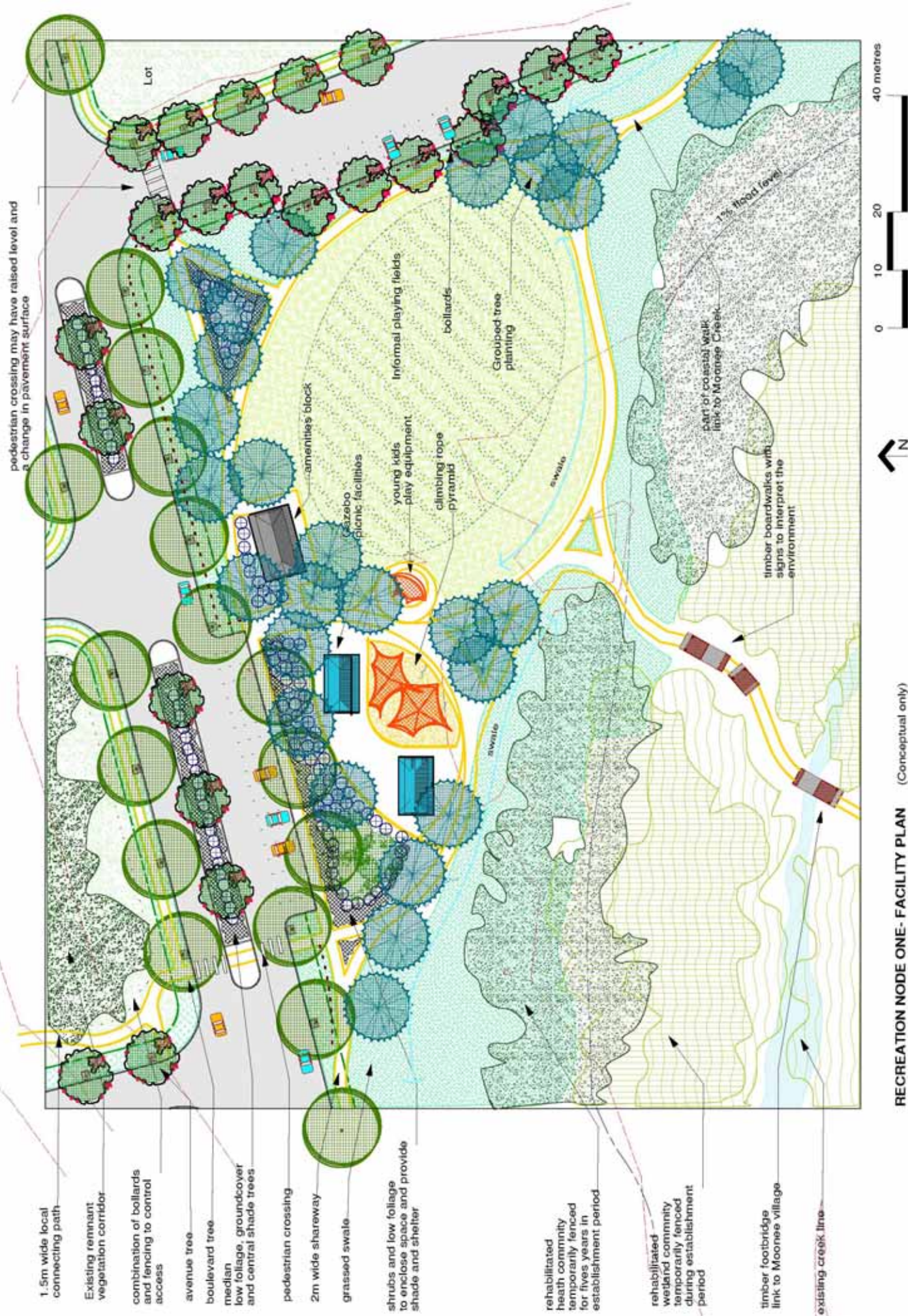
Recreation Node 1 will also have a facility for older children to utilise and be linked closely with the grassed open space area for ball games. A "Toss Ball Tower" or half basketball court will be installed. All facilities installed will conform to Australian standards.



At Recreation Node 2 features of the playground will have an environmental basis and be linked to interpretative information

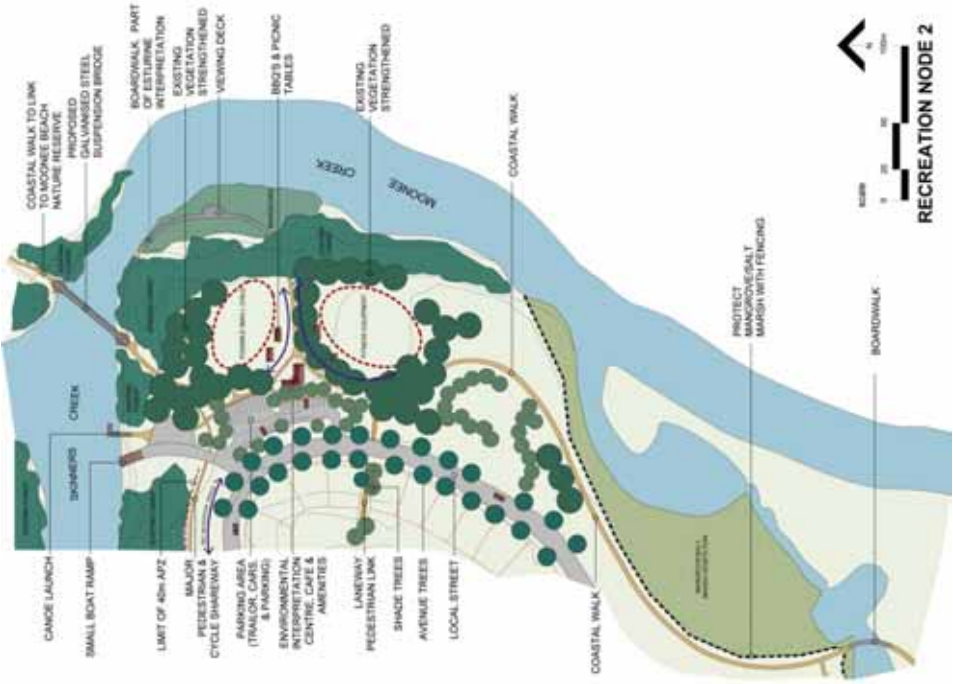


Children's playground in Recreation Node 1 will be fun and aimed at catering for young kids. A pyramid rope structure is likely to form part



RECREATION NODE ONE- FACILITY PLAN (Conceptual only)

(Conceptual only)



View from high point in residential area down to location of Recreation Node 2



Parts of Recreation Node 2 may be developed in a similar nature to above photo



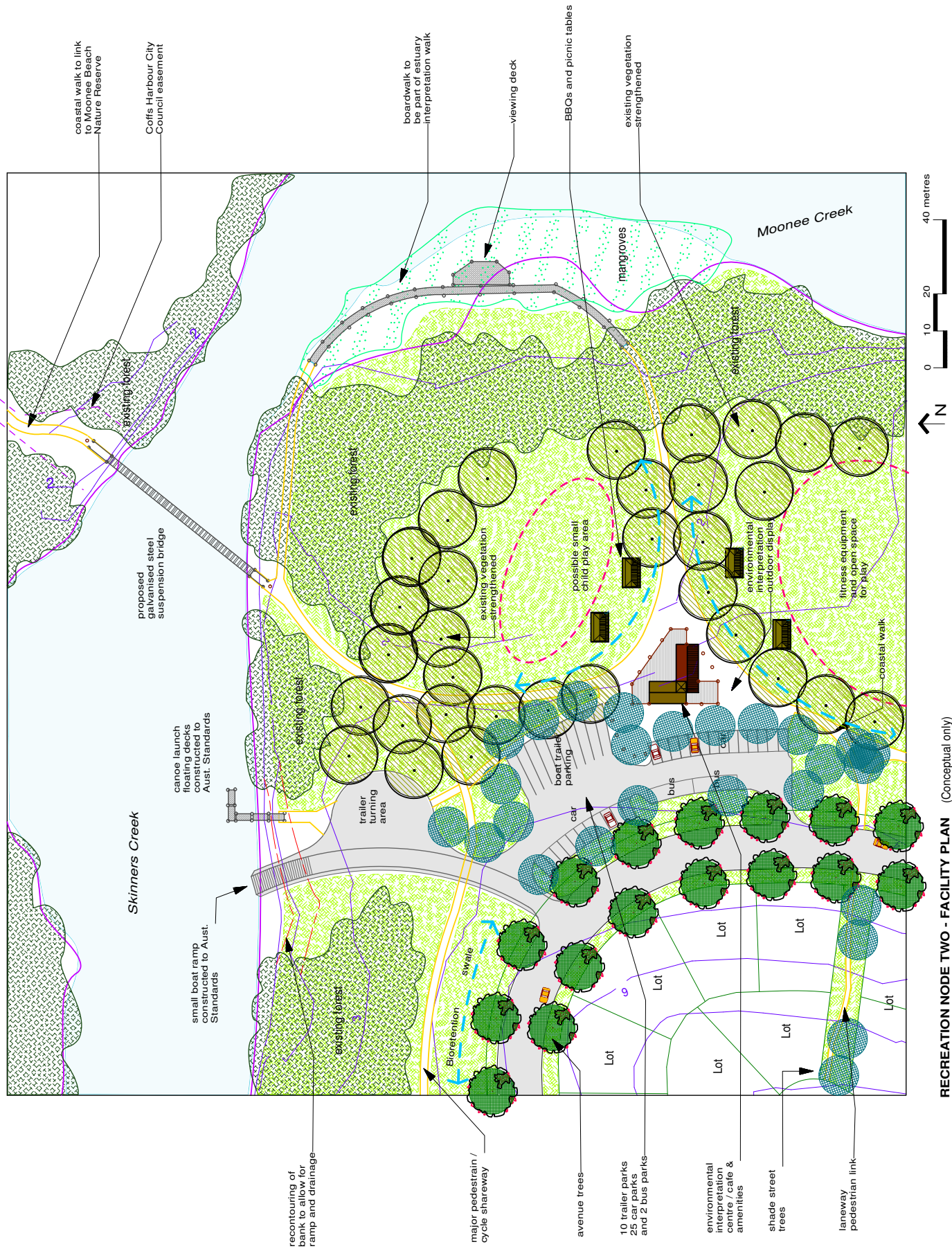
Forest and heath land plants that occur at Recreation Node 2 will be strengthened and utilised in landscaping around car park and playground area



Existing track along Moonee Creek to be formalised with an oxide coloured concrete path



View over Skinners Creek in approximate location where bridge is to cross



RECREATION NODE TWO - FACILITY PLAN (Conceptual only)

Picnic Shelters



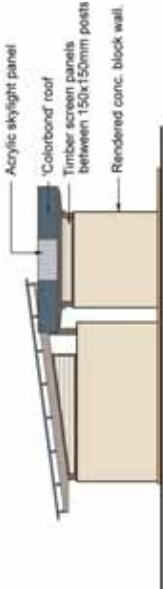
Picnic shelters will include elements of the above structures
Quality materials and finishing will be a feature of all structures placed
within the open space network. All structures will be sat on concrete
pads and be connected to other facilities via constructed pathways.



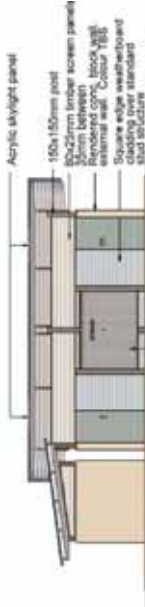
PICNIC/BARBECUE SHELTERS



PUBLIC TOILETS



ELEVATION 1



ELEVATION 2



ELEVATION 3

Public Toilets



Toilet blocks will utilise colours and elements in keeping with picnic
shelters. Toilet blocks will be located at both recreation nodes.

Signage



Flora and Fauna details

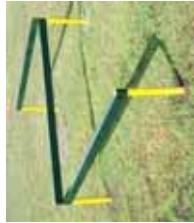
Aluminium and anodised signs will be placed along the pathways that surround The Glades informing people about the environment in which they live. The signs will play an important role in ensuring the future preservation of the Skinners and Moonee Creek environments.



Ecosystems explained

Location and place naming signs within the Open Space Network will use colours and materials that compliment streetscape signage

Fitness trail



Fitness trail equipment will be focused around one location at Recreation Node 2. All equipment will conform to Australian standards and be installed with appropriate soft-fall material.

Fishing platforms

Fishing platforms will be located at sites that are currently a focus for fishing. Two will be installed; one on Moonee Creek and one on Skinners Creek (refer Plan 7 Landscape Concept Plan page 18) Fishing platforms will be cantilevered decks to get people off erosive bank edges; they will also double as secluded seating areas for contemplating the creek atmosphere. Seating, water and a fish-cleaning table will be installed at these locations



Platforms will be a site-specific variation on this model with the aim of providing an area to enjoy the river without damaging banks.

Small Craft Boat Ramp

A boat ramp approximately 3.5 metres wide will be constructed to Australian Standards and placed at recreation node two. It will cater for small craft only (possibly limited to electric motors and/or small horse power). The facility will be a high quality designed and built concrete ramp with bitumen sealed access road and turning area for trailers. Specific parking bays for trailers will be provided and linked to the ramp and other recreation features via a system of concrete paths. Refer Recreation Node 2 – Facility Plan, page 23 for detail.

Canoe Ramp

A canoe ramp is also to be provided at Recreation Node 2. It will be constructed using "Safegate" ("x – trene" materials - moulded fibre glass grating) and be in the form of an elevated ramp sat on pylons. The ramp itself will be approximately 8 metres long x 1.8m wide and will sit above sensitive bank and shallow edge areas. At the start of the ramp a low elevated deck area will be constructed to let ramp users sit canoes down and prepare themselves prior to entering the water. Benches will be provided to rest canoes on which will also double up as seating areas. The canoe launch will double as a fishing deck for anglers and be linked to a car park and picnic area via a concrete path.



Jetty structures showing material to be used for decking on canoe ramp



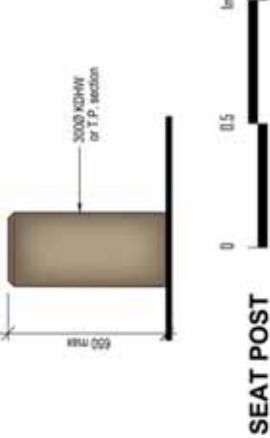
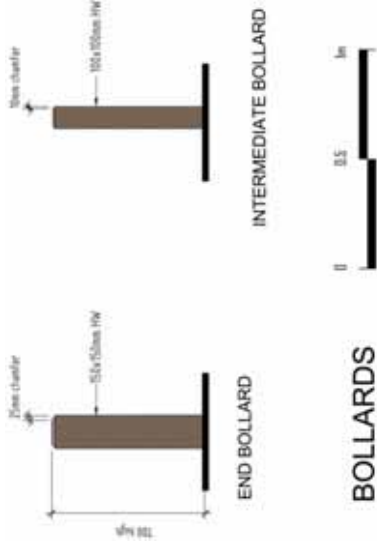
Canoeing at the Glades will become a popular pastime with quality-constructed facilities provided and car parking close by.

Lighting

Solar power for bollards and overhead lighting will be used where feasible in remote locations within the open space network



Bollards



A combination of planting and bollards will direct vehicular and pedestrian movement

Temporary Fencing

Temporary fencing will take the form of farm style fencing utilising predominantly wire and star pickets. This fencing will be installed at the start of stage 1 (refer Plan 8 Landscape Staging, p.31) to facilitate the rehabilitation and growth of existing insitu seed and seedlings. The fencing will be in place for a minimum of five years and only be removed once civil construction infrastructure is in place – such as pathways.



Temporary fencing to protect vegetation from people, machinery and animals

Permanent Fencing

Permanent fencing will be installed around areas of ecological sensitivity (refer Plan 8 Landscape Staging p. 31). Fencing will be placed in combination with structured pathways and interpretative signage to provide the best protection to areas of ecological value. Permanent fencing will utilise wire and picket fencing coupled where appropriate with farm style split post and rail construction. Hardwood bollards will also be used where pedestrian access is desirable.



At feature locations split hwd post and rail fencing will be used in combination with bollards to permanently fence off areas of ecological sensitivity



BBQS



Stainless steel electric bbqs for ease of maintenance and longevity will be installed within picnic shelters at the two main recreation nodes. Where practical energy efficiency in all electric elements such as BBQs and lighting alternatives will be addressed.

Bins

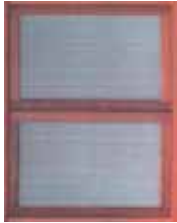
A suite of bins will be provided which compliment Coffs Harbour City Councils bins for use in public recreation areas. Bins will be a combination of plastic or galvanised stainless steel.

Bins used at The Glades will either be the bulk bins or the more refined single bin type pictured below.



This photo depicts current council bins for public use in recreation areas. The Glades may attach a decorative galvanised steel panel or similar to either side of bins to improve appearance without disrupting council disposal requirements.

Possible option for bin screen may be constructed of "miniscreen" fencing product sat within a timber frame and fixed to concrete pad via stirrups.

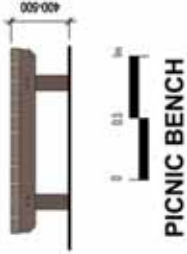
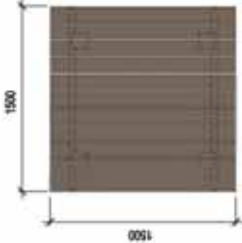


Bin screen may also be a chance to feature a unique design for The Glades utilising galvanised steel decorative panels fixed onto a galvanised steel frame which is then secured to a concrete pad.



Preferred style of single bin to be used at The Glades

Seating



Timber furniture, low maintenance and hardwearing will be set on concrete pads



Chunky timber seats may be used as a feature in bush settings

Bike Racks



Facilities for bicycles will be provided at both recreation nodes

Street Tree Guards



Street trees will be protected during an establishment period of five years through the use of tree guards. A variation on the most successful locally used tree guard by Coffs Harbour City Council (shown in photo) will be installed at The Glades for each street tree planted.

A bond system may also apply to contractors working on The Glades development area to protect trees and ensure the replacement of any damaged individuals.

The Glades - Design Guidelines for Individual Allotments

The Winten Property Group will issue design guidelines at point of sale for each individual block. These guidelines are aimed at ensuring a high standard in development of the built form and associated landscaped areas. The guidelines will cover elements such as

- Building form
- Setbacks
- Conformity to Basic design principles (energy efficiency, solar access, cooling, heating and water storage)
- Levels
- Vehicle accommodation
- External wall finishes & roof scape
- Driveways
- Fencing and retaining walls
- Landscaping to front gardens
- Letterboxes

Within the front yard guidelines will detail

- The minimum amount of area to be garden bed
- The construction materials to be used in garden edging
- Mulching
- Plant species selection (native plants- most local to area)
- Lawn areas to be established turf
- Driveway materials and colours

The Winten Property Group will offer a "Landscaping Bonus" if its guidelines are adhered to in an effort to ensure The Glades is ecologically and visually developed to its best potential.

The Glades - Landscape Staging and Dedication Plan

The Landscape Staging Plan seeks to logically lie out the process of landscape enhancement of The Glades and subsequently apply a management program to ensure the natural assets of the site are successfully established and managed before dedication of open space is made to the Coffs Harbour City Council.

It is a high priority for landscape works to commence early within each identified stage (refer Plan 8 Landscape Staging page 31) so that all issues are resolved before population pressures are placed upon the open space within the Glades site and surrounding natural areas. Location details of specific works within each staging area are shown on Plan 6 Path Network & Development Facilities p. 17 and Plan 7 Landscape Concept Plan p. 18.

Landscape works will be undertaken logically to coincide with the staged release of building lots. This will ensure that both the sensitive buffer areas are protected and that relevant recreation facilities and aesthetic improvements are provided to the residents.

Rothwell Boys Pty Ltd (Winten Property Group) will establish and construct all recreation facilities identified by the plan. Ultimately all recreation amenities will become public facilities once the development stages of the project are complete.

Stage 1: Development and Management of Natural Areas

Statement of Intent

All areas defined as Stage 1 on Plan 8 Landscape Staging will undergo bush regeneration and weed suppression activities. Bush regeneration and vegetation management within these natural areas will have a management regime during civil construction project and for a period of 2 years following dedication of lands to Council.

Stage 1: Management Actions

- Install permanent farm style fencing (split hwd timber post and 4 strand wire) as shown on staging plan.
- Place gates and bollards where access is desired

- Install temporary fencing (combination of timber and star pickets with standard 4 wire strand), this will minimise disturbance to these areas during construction.
- Fencing designated as temporary, will be removed in progressive sections once all civil construction works have ceased within a staging zone.
- Place gates or bollards where access is desired for bush regeneration and other maintenance works.
- Plant rehabilitation and weed suppression activities are to begin in all areas identified in stage 1 as soon as fencing is in place.
- Remove any existing fencing if assessed on site as being unnecessary and hindering plant rehabilitation and future pedestrian movement through site.
- Arrange for interpretive signs to be built which explain the dynamics and importance of the environment to the Moonee Creek catchment system. This will be installed at pedestrian entry points to the creek buffer areas once occupancy occurs.
- * Efficiency of bush regeneration will be monitored and if necessary chicken wire will be placed on fencing to stop grazing by swamp wallabies on young regenerating plants.

Stages 2 – 6: Development and Management of Open Space used for Recreation, Streetscape, Screening, Aesthetic Improvement and Asset Protection

Statement of Intent

It is the intent of this plan that all open space areas are established early to allow the landscape features to be set in place and well established before population pressures are placed within each specific stage. All landscape areas will be well presented and plants watered in and established.

The intent of planting within the development envelope and recreation nodes is to use species that are found or complement plant communities that occur on site. All plants will be native and hardy (Refer plant species list Appendix 1). Grassed areas will utilise a grass seed mix or turf and be mown regularly to attain an efficient ground cover.

The following management actions are to apply to each landscape stage during the course of the civil construction period.

Stage 2: Management Actions

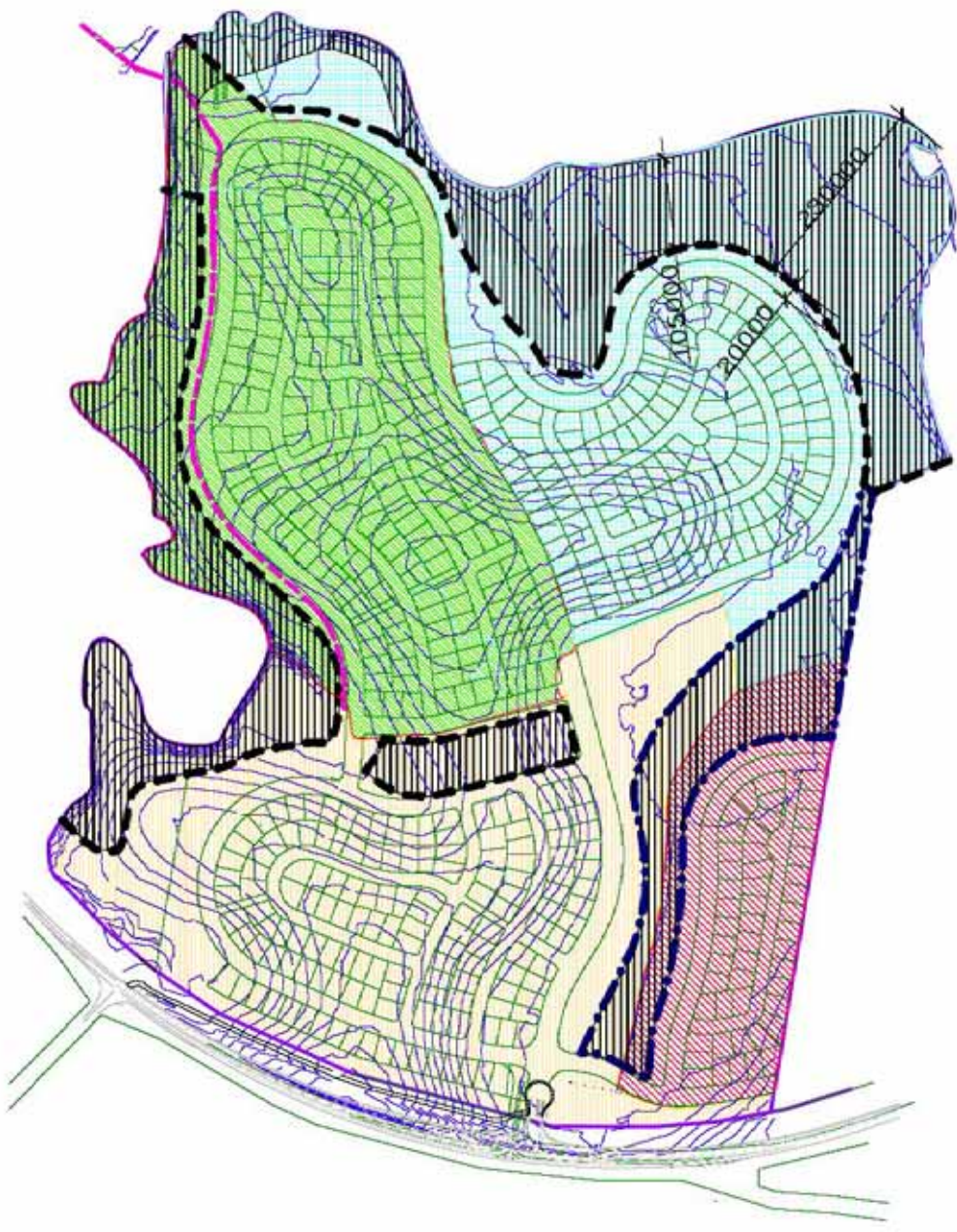
Refer Plan 8 Landscape Staging, page 31 for Location of areas.

- Install entry road statement and planting
- Install boulevard, avenue and street planting
- All street trees will be installed with a guard and replaced within the establishment period if they fail to thrive.
- Install grouped planting of canopy trees in Asset Protection Zone (APZ).
- Some turfing and grass seeding of areas to occur, with follow up maintenance to establish healthy grass covering with particular focus around planted areas, road easements, culvert outlets and drainage swales.
- Install major pedestrian share way 1.1km approx x 2.5m wide path (concrete with oxide colour) and may contain up to 500m of boardwalk.
- Install small footbridge (10m span approx.) over internal creek to link lot development areas with lot 15 and Moonee village to the south.
- Install local connecting pathways (310m x 1.2m wide concrete path)
- Install local connecting pathway (80m x 2m concrete path) through central vegetation corridor.
- Ensure landscape is developed to allow movement and increased protection of wallum frog let.
- Construct noise abatement structures and associated planting within Environmental Scenic Buffer / service corridor adjacent to highway.
- Facilitate the placement of main pedestrian cycleway linking the site to the north and south along service corridor. Environmentally sensitive areas to be avoided.
- Install playground at site denoted on Landscape Concept Plan as Recreation Node 1 – works carried out as part of this facility are to include:
 - Car park
 - Small amenities block
 - Min. of two picnic shelters
 - Small kids playground equipment and associated soft fall area
 - Large grassed area for ball game activity (possibly look at also incorporating facility for older children (e.g half basket ball court)
 - Two double bbqs
 - Bollards, signage, bins, seating
 - Water and lighting

Stage 3:	Management Actions
	• Install galvanised steel suspension footbridge across skimmers creek (50m span approx.) and associated footpaths and fencing to control access • Install 2.5km approx. of major pedestrian shareway concrete path (coloured with oxide x 2.5m). This path helps to connect all other areas within the development to areas north and south of The Glades.
Stage 4:	Management Actions
	• Install boulevard, avenue and street planting • All street trees will be installed with a guard and replaced within the establishment period if they fail to thrive. • Install grouped planting of canopy trees within Asset Protection Zone (APZ). • Turfing and grass seeding of areas to occur, with follow up maintenance to establish healthy grass covering with particular focus around planted areas, road easements and drainage swales. • Install coastal walk (approx. 2.5km x 2.5m combination of oxide coloured concrete and charcoal concrete pavers and may contain up to 500m of boardwalk) • Install 800m of local connecting pathway (1.2m wide concrete or 1.8m wide boardwalk) • Install small footbridge (10m span approx.) over internal creek to link coastal walk within The Glades with Moonee village and beach to the south. • Install elevated timber deck structure (fishing platform) at location identified on Plan 7 Landscape Concept Plan, p 18 • Water and power will need to be supplied to deck location.
Stage 5:	Management Actions
	• Install elevated timber deck structure (fishing platform) at location identified on Plan 7 Landscape Concept Plan, p 18 • Water and power will need to be supplied to deck location • Install 150m of local connecting path (1.2m wide concrete) to give access directly to fishing platform • Install 150m of 1.2m wide concrete path • Install avenue and street tree planting

Maintenance	
	All open space and facilities contained within The Glades development will be maintained by the Rothwell Boys Pty Ltd (Winten Property Group) for a period of 2 years after the dedication of the land to Council, after which time all maintenance will be Council's responsibility. The staged dedication of open space areas to Council will take place upon registration of the linen plan for each stage of the subdivision.
	All street trees will be installed with a guard and replaced within the establishment period if they fail to thrive. • Install grouped tree planting within Asset Protection Zone APZ • Turf and grass seed areas. Turfing to be focused around planting, road easements and drainage swales • Install second major recreation node, this will include: - Walk in canoe ramp - Concrete boat ramp 3.5m x 20m - Car park - Medium size amenities block - Environment interpretation facility (information shelter and or something interactive) - Toilet block 2 picnic shelters (min) 2 double bbq - bollards, signage, bins, seating - water and lighting • Install interpretation boardwalk (approx. 100m x 1.8m, combination of timber and "safetread" or "safegrate") • Install fitness trail equipment in logical locations adjacent to path network.

Stage 6:	Management Actions
	• Install landscape features and planting associated with long-term entry road and bridge. • Install avenue and street planting • All street trees will be installed with a guard and replaced within the establishment period if they fail to thrive. • Install grouped planting of canopy trees within Asset Protection Zone (APZ). • Turfing and grass seeding of areas to occur, with follow up maintenance to establish healthy grass covering with particular focus around planted areas, road easements and drainage swales.



-  Permanent farm style timber post and wire fence pedestrian access through fence gaps and bollards will be installed to control pedestrian movement where desired
-  Temporary timber and steel picket combination fence with 3-4 strand wire. Gates to be installed to correspond where access is required for maintenance. Fencing will be progressively removed as each civil construction stage ceases
-  Stage 1
-  Stage 2
-  Stage 3
-  Stage 4
-  Stage 5
-  Stage 6
-  Rehabilitation and strengthening of existing native vegetation area
-  Construction of connecting pathways & pedestrian bridge across Skinners Creek

The Glades

The Glades - Appendix 1 - Open Space Plant Species Selection

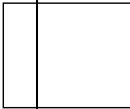
All plants will be native and most are either found on site or in nearby locations. Planting will serve various roles including strengthening the existing plant communities or adding colour and accent to the streetscape. Planting within the Environmental Scenic Buffer will aim to provide screening from the highway. Planting within recreation nodes will provide colour, shade and help define spaces. Planting along streets will be single trees planted in turfed easements to screen and shade, filter urban runoff or simply provide a welcoming sense of arrival to The Glades.

Plant species will include:

Tree	Botanical Name	Common Name	Type	Location	Tree	Botanical Name	Common Name	Type	Location
				street, pathway, Env buffer, rec node		Lophostemon suaveolens	Swamp turpentine	tree < 15m	Street & APZ
	Acacia binervata		Tree < 15m	Avenue, street, Env buffer & APZ		Melaleuca linariifolia	Snow-in-summer	Tree < 15m	Pathway & rec node
	Eucalyptus siderophloia	Northern Grey Ironbark	Tree > 15m			Melaleuca quinquenervia	Broad-leaved paperbark	Tree > 15m (20m)	Avenue & APZ
	Eucalyptus tereticornus	Forest Redgum	Tree > 15m (30m)	Env buffer & APZ		Melaleuca sieberi	Sieber's paperbark	Tree, 15m (10m)	APZ
	Syncarpia glomulifera	Turpentine	Tree > 15m (30m)	Env buffer & APZ		Callistemon salignus	White bottlebrush	Tree < 15m (9m)	Pathway, Env buffer & APZ
	Angophora costata	Smooth-barked Apple	Tree > 15m (30m)	Env buffer & APZ		Banksia integrifolia	Coast banksia	Tree, 15m	Pathway, rec node
	Eucalyptus microcorys	Tallowwood	Tree > 15m (40m)	Avenue, Env buffer & APZ		Elaeocarpus reticulatus	Blueberry ash	Tree < 15m	Pathway & Street
	Eucalyptus robusta	Swamp mahogany	Tree > 15m (25m)	Avenue, Env buffer & APZ		Acmena smithii	Lilly Pilly	Tree > 15m (20m)	Pathway, street or Avenue
	Eucalyptus resinifera	Red mahogany	Tree > 15m (35m)	Avenue, Env buffer & APZ		Tristaniaopsis laurina	Water gum	Tree < 15m (15m)	Street & Pathway
	Eucalyptus tindaliae	Grafton Stringybark	Tree > 15m (35m)	Env buffer & APZ		Cupaniopsis anacardiodes	Tuckeroo	Tree < 15m (13m)	Street, Pathway & rec node
	Endiandra sieberi	Hard corkwood	Tree > 15m (20m)	Env buffer & APZ		Syzygium australe	Brush cherry	Tree > 15m (18m)	street, pathway, Env buffer
	Corymbia intermedia	Pink bloodwood	Tree > 15m (35m)	Avenue, Env buffer & APZ		Alphitonia excelsa	Red ash	Tree > 15m (22m)	Boulevard & Avenue
	Allocasuarina torulosa	Forest oak	Tree < 15m	Env buffer & APZ		Callistemon "Dawson River Weeper"	Weeping Bottlebrush	Tree < 15m	pathway, street, rec node
	Syzygium luehmannii	Riberry	Tree > 15m (25m)	street, avenue, rec node		Melaleuca leucadendra		Tree > 15m (22m)	Avenue, street, rec node
	Acacia frimbriata	Fringed wattle	Tree < 15m (6m)	Env buffer, rec node					
	Harpulia pendula	Tulipwood	Tree > 15m (17m)	street, avenue, rec node					

Plant list is derived from a species list collated by James Warren & Associates as part of their Flora and Fauna Assessment of The Glades site. Also utilised was the National Parks & Wildlife Service's, Flora species list of the Moonee Beach Nature Reserve (Atlas of NSW Wildlife website - <http://wildlifeatlas.nationalparks.nsw.gov.au/wildlifeatlas/watlasspecies.jsp>)

Tony Sullivan, Parks Supervisor - Nursery Operations from Coffs Harbour City Council was also helpful in compiling a suitable list of species that would grow successfully on site.

Tree	Botanical Name	Common Name	Type	Location	Tree	Botanical Name	Common Name	Type	Location
									
	Casuarina glauca	Swamp sheoak	Tree > 15m (20m)	Street, rec node & APZ		Backhousia citriodora	Lemon scented myrtle	Tree < 15m (15m)	Street, Avenue, Rec node
	Glochidion ferdinandii	Cheese tree	Tree > 15m (25m)	APZ		Flindersia australis	Native teak	Tree > 15m (35m)	Boulevard
	Lophostemon confertus	Brush box	Tree > 15m (30m)	Avenue or street		Buckinghamia celissima	Ivory curl	Tree > 15m (17m)	Avenue, street, rec node
Shrub	Botanical Name	Common Name	Type	Location	Shrub & Groundcover	Botanical Name	Common Name	Type	Location
	Comesperma ericinum	Matchheads	shrub < 1m	rec node		Kunzea capitata	Pink Kunzea	shrub 1-3m (1.2m)	Rec node, entry
	Lomatia silaifolia	Wild parsley	shrub 1-3m	rec node, Env buffer		Hibbertia linearis	Narrowed leaved guinea flower	shrub < 1m	Rec node
	Acacia aulacocarpa	Hickory wattle	shrub > 3m (6m)	re node		Philotheca difformis var. smithianus	Small-leaf waxflower	shrub < 1m	Rec node, entry, roundabout
	Acacia brownii	Heath wattle	shrub < 1m	rec node, entry, roundabout		Philotheca salsolifolia	Native philotheca	shrub < 1m	Rec node, entry, roundabout
	Acacia falcata		shrub > 3m (4m)	Env buffer		Leptospermum liversidgei	Lemon scented swamp teatree	shrub 2m	Rec node
	Acacia floribunda	Gossamer wattle	Shrub > 3m (6m) g	rec node, Env buffer		Melaleuca nodosa	Yellow paperbark	shrub 1-5m	Rec node
	Acacia longifolia subsp sophorae	Coast golden wattle	shrub 1-3m g	rec node, Env buffer		Callistemon pachyphyllus	Wallum bottlebrush	shrub 1-3m	Rec node, Env buffer, entry
	Acacia suaveolens	Sweet-scented wattle	shrub 1-3m	rec node		Leptospermum polygalifolium	Yellow teatree	shrub 5m	Rec node, Env buffer
	Acacia ulicifolia	Prickly moses	shrub 1-3m	Env buffer, rec node		Hibbertia vestita	Hairy guinea flower	shrub < 1m	Rec node, median, entry, roundabout
	Austromyrtus dulcis	Midgenberry	shrub < 1m	rec node, median, entry, roundabout		Notelaea ovata	Mock olive	shrub > 3m	Rec node
	Banksia oblongifolia	Swamp banksia	shrub 1-3m	rec node, entry, roundabout		Dodonaea triquetra	Large-leaf hop bush	shrub 1-3m	Env buffer, rec node entry
	Banksia spinulosa subsp collina	Hairpin banksia	shrub 1-3m	rec node, Env buffer, entry		Jacksonia scoparia	Dogwood	shrub > 3m (4m)	Env buffer
	Melaleuca thymifolia	Purple paperbark	shrub < 1m	rec node, median, entry, roundabout		Leucopogon parviflorus	Coastal beard heath	shrub < 1m	Rec node 2 only
	Dillwynia glaberrima		shrub 1 - 3m	rec node		Hibbertia scandens	Climbing guinea flower	vine, climber	Rec node, entry, median, roundabout

Shrub & Groundcover	Botanical Name	Common Name	Type	Location	Shrub & Groundcover	Botanical Name	Common Name	Type	Location
									
	Billardiera scandens	Common appleberry	climber	Rec node, entry, median, roundabout		Epacris obtusifolia	Blunt-leaf heath	shrub < 1m	Rec node
	Hardenbergia violacea	False sarsparilla	scrambling vine	Rec node, entry, roundabout		Baeckia frutescens	Bundled baeckia	shrub 1-3m	Rec node, env buffer
	Viola hederacea	Native violet	ground cover	Rec node, roundabout		Poa sieberiana	Snow grass	tussock grass	rec node, entry
	Scaevola calendulacea	Dune fanflower	ground cover	Rec node, median, roundabout entry		Lomandra longifolia var "Tanika"		tufted plant	rec node, swales, street
	Lomandra filiformis	Wattle mat-rush	tufted plant	entry, rec node, median, swales, roundabout		Kennedia rubicunda	Dusky coral-pea	scrambling vine	rec node
	Lomandra longifolia	Spiny-headed mat-rush	tufted plant	entry, rec node, median, roundabout, swales					
				entry, rec node, median, roundabout, swales					
	Dianella caerulea	Flax lily	lily	entry, rec node, median, roundabout, swales					
	Xanthorrhoea fulva	Swamp grass tree	grass	median, entry					
	Themeda triandra	Kangaroo grass	tussock grass	entry, median, rec node, roundabout					
	Grevillea poorinda "Royal Mantle"		ground cover	entry, median, rec node, roundabout					

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