PRECINCT LANDSCAPE AND REVEGETATION PLAN (COMMONWEALTH)

PREPARED FOR PRECINCT 1 TO 4 AT ALKIMOS BEACH AS REQUIRED BY CONDITION 12 OF THE APPROVAL (EPBC 2011/5902)

PRECINCT LANDSCAPE AND REVEGETATION PLAN (COMMONWEALTH)

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1. Introduction

1.1 Background

The development of Alkimos Beach (previously known as South Alkimos) received approval from the Minister for Environment on the 30th June 2012 for the clearing of approximately 97 ha of native vegetation for urban development at Lot 1004, 80L Romeo Road and 2611 Marmion Avenue, Alkimos, WA (EPBC 2011/5902).

Alkimos Beach comprises four precincts, within a 224 ha development area, consisting of residential housing, mixed use development, public open space (POS), schools and conservation reserves, including a revegetation area of approximately 29 ha. Construction of roads commenced in early 2013 with built form construction and landscaping well underway.

1.2 Purpose and Scope

In accordance with Condition 12 of EPBC 2011/5902, Lendlease prepared a Precinct Landscape and Revegetation Plan (PLRP). The purpose of the PLRP is to provide protection of habitat for listed threatened species in the project area, comprising the entire 224 ha project site, as defined in EPBC 2011/5902.

Version 1 of the PLRP was approved by the Minister for the Environment on 8 April 2014. The most recent version approved (Version 4) in April 2016 was in accordance with Condition 4(a) of the approval.

The PLRP (Version 5) has now been updated to clarify the requirements and implementation of Conditon 12(a) and 12(b) of EPBC 2011/5902 approval.

Table 1 includes each requirement of Condition 12 and the section of the PLRP where the Condition has been addressed.

Table 1: EPBC 2011/5902 Conditions

Condition	Requirement	Document section
12	To protect habitat for listed threatened species the person taking the action must prepare and submit a Precinct Landscape and Revegetation Plan (PLRP) for the project area, for approval by the Minister. The PLRP must include:	Section 1.2
	a) Measures to establish the equivalent of at least 5 ha of Carnaby's Black-Cockatoo habitat on the project area, through streetscape and landscape planting;	Section 3
	b) At least 50% of plantings of trees and shrubs in streetscape and landscape planting must consist of plant species known to be primary feeding plants for Carnaby's Black-Cockatoo;	Section 3
	c) Timeframes and survival targets proposed for plantings;	Section 3, 4.1; 4.2
	d) Contingency measures if survival targets are not achieved;	Section 4
	e) Monitoring and reporting measures;	Section 4
	f) Roles and responsibilities of contractors, staff and the person taking the action; and	Section 5
	g) Timeframes for the implementation and the management of the above measures.	Section 4.2
	The PLRP must be submitted to the Department within 12 months of the date of approval. If the Minister approves the PLRP, the approved plans	Section 1.2

Condition	Requirement	Document section
	must be implemented. No construction can commence in the area shown as the No Clearing area on Attachment C until the PLRP is approved by the Minister.	

1.3 Relationship to other Conditions

The PLRP also relates to the following Conditions of EPBC 2011/5902:

Condition 8, which addresses clearing of habitat within the project area:

> ***'The person taking the action must not clear more than 21.1 ha of Carnaby's Black Cockatoo foraging habitat from Lot 1004, 80L Romero Road and 2611 Marmion Avenue, Alkimos, Western Australia.'***

Condition 10, which addresses management of retained habitat within the Conservation POS:

> ***'To protect habitat for listed threatened species, the person taking the action must prepare and submit a Conservation Area Management Plan (CAMP) detailing management of POS (designated Conservation POS at Attachment A), for the approval by the Minister...'***

Condition 11, which addresses management of retained habitat within the Regional Open Space (ROS):

> ***'To protect habitat for listed threatened species, the person taking the action must prepare and submit a Foreshore Management Plan (FMP) detailing management of ROS on the project area (designated Regional Parks and Recreation at Attachment A), for approval by the Minister...'***

The Annual Compliance Report required under Condition 3 of EPBC 2011/5902 records progress against the targets set in this report.

Revegetation with the Conservation POS (Park H1 and H2) and the Regional Open Space is managed through the implementation of the Conservation Area Management Plan and Foreshore Management Plan required by Condition 10 and 11 of EPBC 2011/5902 respectively.

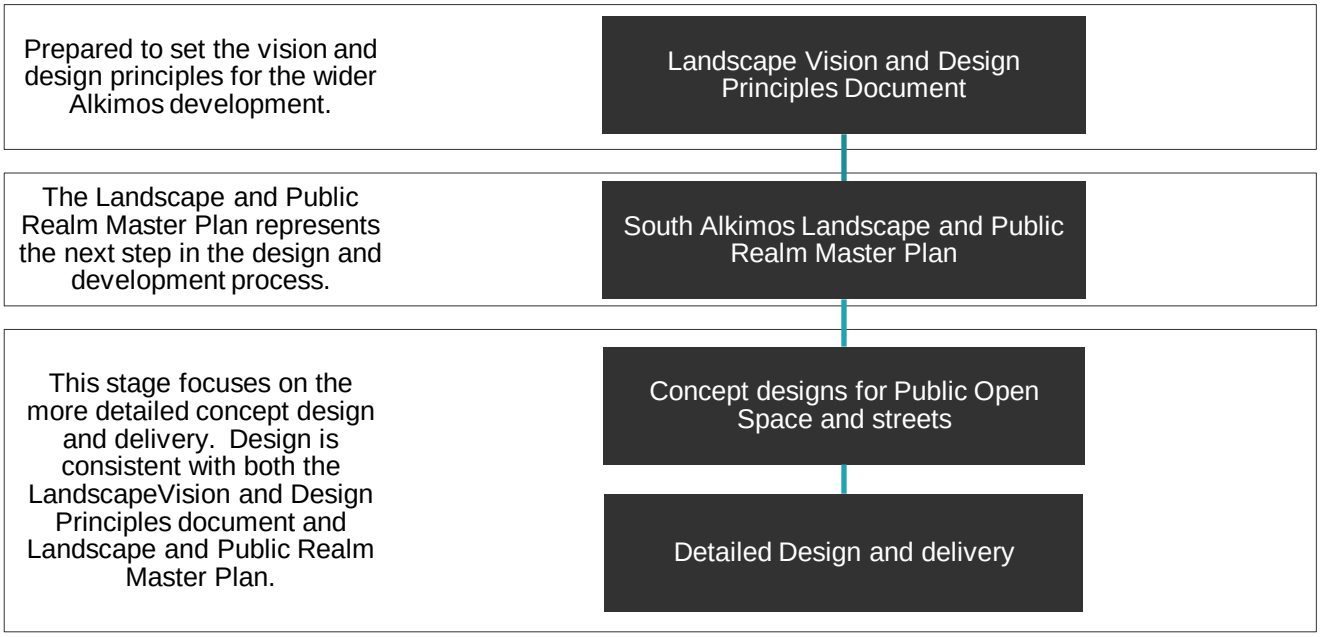
Condition 10, 11 and 12 of the approval do not permit construction to commence within the foreshore zone ("No Clearing" area of EPBC 2011/5902 Attachment C) until all three Management Plans are approved by the Minister. Approval of the PLRP, CAMP and FMP (required by Condition 10, 11 and 12 respectively) occurred on 8 April 2014.

2. Supporting documents

The PLRP aligns with State and local structure planning documents, as detailed in the following section.

Several landscape documents have been prepared in accordance with the State Local Structure Plan for South Alkimos and ongoing detailed subdivision plans as presented in Figure 1 and described in further detail in sections 2.1 to 2.3. These documents are included in **Appendices A, B** and **C** of this report and provide background information about landscaping across the site.

Figure 1: Hierarchy of Landscape Reports



2.1 Landscape Vision and Design Principles Document

The Landscape Vision and Design Principles document (AECOM 2012a) (**Appendix A**) was prepared to guide the vision and design for landscape across (Lendlease development partner) DevelopmentWA's landholdings (including Alkimos City Centre, Central Alkimos and South Alkimos). To deliver a responsive and appropriate design, six key objectives have been defined to guide the landscape design process for the Alkimos Beach project. These are:

- Liveability and Community Wellbeing
- Connectivity and Linkages
- Environmental Sensibility
- Climate Adaptation and Water
- Culture, Recreation and Open Space
- Character and Identity.

Elements of these objectives relevant to the PLRP are listed in Table 2 below.

Table 2: PLRP links to Landscape Vision and Design Principles Document

Objective	Page #	Element relevant to the PLRP
Liveability and Community Wellbeing	17	Foster a sense of responsibility to and respect for nature and conservation work to help protect native plants and animals that inhabit the site, in particular Carnaby's Black Cockatoo.
Climate Adaptation and Water	18	Improve the water holding capacity of sandy soils (by the use of soil amendments). This will reduce the requirement for irrigation.

Objective	Page #	Element relevant to the PLRP
		Ensure at least 85% of new plant material in the public realm is a local species and ensure that 50% or greater of street trees are native species suited to their intended location.
		Orientate planting around the wetter months of the year to ensure seedling survival and minimise irrigation requirements.
Character and Identity	20	Planting at Alkimos will be comprised of predominately indigenous vegetation – native and local

2.2 Landscape Public Realm Master Plan

The Landscape Public Realm Master Plan (LMP) (**Appendix B**) represents the initial step in the design process, discussing park typologies and streetscape design. The Alkimos Beach Street Planting Strategy included in the LMP indicates species which are:

1. Native
2. Carnaby's Black-Cockatoo (CBC) species and / or species listed on the Department of Parks and Wildlife - DPAW (now Department of Biodiversity, Conservation and Attractions – DBCA) *Plants Used by Carnaby's Black Cockatoo*[1] list (Groom 2011) (CBC plant list)
3. Collected as part of the seed collection undertaken across Alkimos Beach.

The streetscape planting palette is broken down across three broad areas: Coastal, Neighbourhood and Urban. The delineation of these areas is included on Page 36 of the LMP. In response to this, some of the parks reflect upon the natural amenity and space while others replicate a more urban context.

The initial planting strategy for Alkimos Beach intended on establishing the majority of CBC plants in the conservation spaces and the parabolic dune linkage across the site. This strategy has been adjusted to include species in other areas of the project site as well i.e. a number of identified POS areas across the project site.

2.3 Concept design, detailed design and delivery

Alkimos Beach comprises four precincts, including several landscaping stages within each precinct. Precinct and staging plans may be subject to review and update over the life of the project in response to various planning factors resulting during project implementation. The most current precinct plan is provided in **Appendix C**, which also details the locations of parks across the project area. Amendments to the precinct plan will be reported in the Annual Compliance Report required by Condition 3 of EPBC 2011/5902.

A concept design process is undertaken for each individual park and streetscape that draws on the Vision and Principles document and the LMP. The concept design is then converted into a detailed design including detailed specifications on the location of plants and precise species types. With the City of Wanneroo's (the City) endorsement, the construction and delivery of a park or streetscape can commence. Overall planting targets for parks and streetscape within the project area are discussed in detail in Section 3.

An update on the status of delivery will be provided in the Annual Compliance Report.

[1] Only species on the DPAW CBC plant list have been included that are suitable to the local conditons like climate and soil type. The selection of species may be updated from time to time as new information becomes available and other species may be considered for inclusion to meet both cockatoo foraging and landscape/streetscape objectives (i.e. some exotic species are recognised as valuable cockatoo plants and may be valuable additions to the project area).

3. Planting Schedule

For the purposes of this PLRP, the planting schedule presented demonstrates compliance with Condition 12(a) and 12(b) of EPBC 2011/5902 which require:

- establishment of an equivalent ≥ 5 ha of CBC habitat through streetscapes and landscaping planting (across the development)
- ≥ 50% of plantings of trees and shrubs in streetscape and landscape must consist of plant species known to be primary feeding plants for CBCs

In Consultation with the Department of the Environment – DOTE (now Department of Agriculture, Water and Environment - DAWE), Lendlease determined the approach to meet this requirement during the finalisation of the approval for the project in May / June 2012. It was agreed at the time that this requirement specifically relates to established trees on DPAW's CBC plant list using the following ratio: *500 CBC trees equal 1 ha of CBC habitat.* Therefore, a minimum of 2,500 CBC trees would require planting to replicate *greater than 5 ha of Carnaby's Black-Cockatoo habitat*.

During further consultation with DAWE in 2017 and early 2018, it was acknowledged by DAWE that Condition 12(a) and 12(b) directly correlate. As such, to meet Condition 12(a) and 12(b) of EPBC 2011/5902, at least 50% of trees and shrubs planted in the equivalent ≥ 5 ha of CBC habitat must consist of plant species known to be primary feeding plants for CBCs.

Table 3 describes the objective, target and indicators to meet the above requirements. Table 4 provides an actual (for species planted to date in P1 & P2) and indicative (for future plantigns in P3 & P4) precinct breakdown of the Carnaby's Black-Cockatoo trees and shrubs (refer to **Appendix C** for a map) to track progress against the ultimate target described in Table 3, across all precincts.

The inidcative targets are interim targets for monitoring purposes only and will be verified via the annual compliance audit.

Table 3 Objectives, targets and indicators

PRLP outcomes	Performance indicators
Establish the equivalent of at least 5 ha of Carnaby's Black-Cockatoo habitat within the project area, through landscape planting.	1) Establish at least 2,500 CBC habitat trees within the project area across a selected number of public open space (POS) areas (refer to Appendix E of the PLRP for details). 2) Within the POS areas delineated by (1) above, at least 50% of plantings of trees and shrubs consist of plant species known to be primary feeding plants for Carnaby's Black Cockatoos. The establishment and survival of tree and shrub plantings is to the satisfaction of the City of Wanneroo. 3) The City of Wanneroo accepts handover of landscape plantings of trees and shrubs established in the selected POS areas in accordance with (1) and (2) above.

Table 4: Actual and indicative precinct breakdown of CBC trees and and shrubs

Precinct	Area (ha)	Cond 12(a) and 12(b) Target: ≥5 ha CBC habitat (ha)	Cond 12(a) CBC habitat trees Target ≥:2,500 CBCs	Cond 12(b) Target = ≥ 50% CBC primary feeding plants (trees & shrubs) across 5 ha CBC habitat	
				CBCs	Non CBCs
1	50.30	1.483	1,594	10,840	40,911
2	47.87	0.911	1,968	3,810	14,072
3	32.51	1.124*	1,846*	36,159*	9,040*
4	43.89	1,532*	1,580*	41,011*	10,253*
Total		5.051*	6,988*	91,820*	74,276*
Percentage				= 55%*	= 45%*

*indicative targets

Appendix D provides a record of the actual number and species of CBC trees and shrubs planted in the completed CBC specified areas for the project to date. Further progress on future parks will be provided as part of the annual compliance audit and included in the annual compliance report.

Appendix E provides a record of the total number of CBC and non-CBC trees and shrubs planted in the completed CBC specified areas of the project and sets indicative planting targets for the CBC parks across the remaining project area. As per the above, planting targets included are indicative only, to guide tracking of progress against the overall objective and targets in Table 3. For each landscaping stage of the development an indicative plant schedule is prepared, which then forms part of the construction package prepared by the Landscape Architects. As planting of the species depends on the availability of the plants at the time of ordering, the planting schedule is updated as required and used as a guide to check that planting numbers are trending toward compliance with the overall tree and shrub targets. Final numbers are then reflected in the planting tracking sheet (Example as per Appendix D).

All future planting schedules and landscape designs will be in accordance with the targets in the PLRP.

In accordance with the principles set under the LMP (**Appendix B**), some parks are classified for more active or passive use while others will be for conservation and restoration of habitat. Existing CBC habitat exhibits a diversity of species including shrubs and trees not considered foraging habitat and not included on DPAW's CBC plant list. The landscape strategy for the project acknowledges that revegetated areas must provide a diversity of species, including both CBC and other species which occur naturally in the area. If during revegetation activities the CBC plant list does not provide a great enough diversity of species that are suitable to a coastal environment and are endorsed by the City of Wanneroo, Lendlease will investigate opportunities to include a greater diversity species on that list in consultation with DBCA.

4. Monitoring, Reporting and Review

In accordance with Condition 12 of EPBC 2011/5902, this section addresses the following:

c) Timeframes and survival targets proposed for plantings
d) Contingency measures if survival targets are not achieved
g) Monitoring and reporting measures
h) Timeframes for the implementation and management of the above measures.

Monitoring, reporting and review of targets will be undertaken in accordance with parameters described in Table 5.

Table 5: Monitoring actions

Performance indicators	Monitoring action	Type of monitoring action	Timing
Establish at least 2,500 CBC habitat trees within landscape plantings in the project area across a selected number of public open space (POS) areas.	Review landscape plans, plant orders and planting schedules to determine number and type of species planted (i.e. CBC species)	Desktop review	Annually
	Record the species, location and number of CBC plants installed during the planting phase.	Within each precinct where planting has been undertaken	During planting
	Monitor success of species planted and determine whether infill planting is required.		Annually until handover of each planting stage to City of Wanneroo
Within the plantings delineated above, at least 50% of plantings of trees and shrubs consist of plant species known to be primary feeding plants for Carnaby's Black Cockatoos.	Review landscape plans, plant orders and planting schedules to determine number and type of species planted (i.e. CBC species).	Desktop review	Annually
	Record the species, location and number of CBC plants installed during the planting phase.	Within each precinct where planting has been undertaken	During planting
	Monitor success of species planted and determine whether infill planting is required.		Annually until handover of each planting stage to City of Wanneroo

4.1 Survival targets

As planting is primarily within the residential zone, the survival targets may vary from revegetation works undertaken in the conservation areas. Both the streetscape and POS planting areas have a higher frequency of maintenance and better access by maintenance staff and facilities. Following the completion of a landscaping stage (POS or streetscape), the landscape architects will visit the revegetation areas on behalf of Lendlease to ensure the specifications have been met by the contractor (including the planting of specified CBC species as documented within the approved design drawings). Prior to handover to the City, Lendlease will ensure the 90% plant survival target is met to enable the handover to the City to be finalised.

4.2 Timeframes for the implementation

It should be noted that high level maintenance of streetscape and public open space is undertaken during the establishment period, generally the first year (52 weeks after practical completion). Handover to the City will be undertaken a minimum of 2 years after practical completion. Following handover, maintenance of streetscape and POS will be managed by the City. Handover of

planting across the site will be staged in accordance with the park and street delivery. All parks and streets are expected to be handed over by the completion of the project. Refer to the indicative precinct plan in **Appendix C** for the breakdown of park and street delivery across the development and to **Section 6** for further details on the handover process and long term management of POS that is subject to the PLRP commitments in particular.

4.3 Restriction on Clearing

Clearing within the 'no clearing area' on Attachment C of EPBC 2011/5902 is not permitted to commence until the Management Plans required under Condition 10-12 are approved. As discussed in Section 1.2, the PLRP, CAMP and FMP have been previously approved.

4.4 Annual reporting requirements

Lendlease is required to submit an ACR in accordance with Condition 3 of EPBC 2011/5902, as detailed below:

> ***'Within three months of every 12 month anniversary of the commencement of the action, the person taking the action must publish a report on their website addressing compliance with each of the conditions of this approval, including implementation of any management plans as specified in the conditions. Documentary evidence providing proof of the date of publication and non-compliance with any of the conditions of this approval must be provided to the Department at the same time as the compliance report is published. Each management plan must be published on the website for the length of the approval.'***

In accordance with the PLRP the following details are required to be included in the ACR:

1. An update of any completed stages or tendered landscape for future stages.
2. Report against planting targets and landscape survival targets.
3. Update of completed tree planting for each stage.
4. Amendments to precinct and staging plans
5. Updated plant schedules for each stage of the development.

5. Responsibilities and Accountabilities

Condition 12(f) relates to the roles and responsibilities of contracts, staff and the person taking the action (being DevelopmentWA (former LandCorp) and Lendlease). The following table delineates the roles and accountabilities of the stakeholders involved in the design, delivery and maintenance of the streetscape and landscape.

Table 6: Stakeholder roles and accountabilities

Stakeholder	Responsibility	Timeframe
DevelopmentWA and Lendlease	Oversee the implementation of the landscaping in accordance with the targets of the approval.	Applicable to the whole Estate
	Report annually against the performance of landscaping against the targets of the approval.	Annual reporting – Condition 3
	Ensure that adequate maintenance is undertaken until handover of each planting stage to City of Wanneroo.	Stage by stage, as required
	Coordinate the handover of parks and streets with the City.	Stage by stage, as required
	Inform DAWE when the final POS area has been handed over to the City and DevelopmentWA and Lendlease have relinquished maintenance responsibility to the City.	Final POS and /or streetscape handover to the City
Landscape Architect	Ensure the designs of streetscapes and POS is in accordance with the requirements of the approval.	Applicable to the whole Estate
	Ensure the tender documentation commits to the plants for CBC targets in the design.	Applicable to all tender documentation
	Keep record of the specific numbers detailed in each tender documentation.	Applicable to all tender documentation
	Advise DevelopmentWA and Lendlease of any modifications to the design or delivery of landscape.	If required
	Ensure the execution of streetscapes and POS is in accordance with the requirements of the approval and specifications are met.	Applicable to the whole developable area
Landscape Contractor	Plant in accordance with landscape specifications.	Applicable to all landscaping
	Ensure that adequate maintenance is undertaken until handover of each planting stage to City of Wanneroo.	Applicable to all landscaping
City of Wanneroo	The requirements of Condition 12 are met at the handover to the City. Management of the parks and streetscapes in the long term is undertaken by the City.	Stage by stage, as required

6. City of Wanneroo handover and long-term management

6.1 EPBC Act 2011/5902 approval context

Lendlease is responsible for the management measures defined in this PLRP and the overall implementation of the PLRP under their EPBC Act approval 2011/5902 inclusive of the approved variations (November 2018).

As outlined in the November 2018 approved variation for Condition 12A[2], Lendlease (the person taking the action) may, with written agreement of the Commonwealth Minister, cease to implement the PLRP. If Lendlease wishes to cease implementing this PLRP, they must submit a request to the Minister which:

1. Includes a report demonstrating that the outcomes and performance indicators of the approved PLRP have been achieved
2. Specifies the entity that will implement the PLRP in the future
3. Includes written agreement from the entity to implementing the approved PLRP
4. Sets out the entity's capacity to implement the PLRP.

Once Lendlease submits the required information and the Minister agrees to the request, the person taking the action (Lendlease) may cease to implement the PLRP, to maintain associated records (Condition 2) and/or report on implementation of the PLRP (Condition 3).

6.2 Post-handover implementation

Key management actions defined in this PLRP are the responsibility of Lendlease for a period of two years or until the Public Open Space area(s) or parts thereof are handed over to the City of Wanneroo.

For each stage of landscaping (streetscape or POS), a detailed design is submitted to the City for their review and approval. The City assesses each design to ensure it complies with their standards and confirms that ultimately the City will be able to manage the area following the required two year maintenance period. As the management of the park in the long term is undertaken by the City, a City officer visits the area prior to handover of a stage to the City to ensure it meets the required specifications (and therefore planting of specified CBC species as documented within the approved design drawings) and survival targets.

Once a stage of landscaping is handed over to the City, the requirements of the Condition for that park and streetscape are considered complete. The City accepts no liability for the requirements of the conditions of the EPBC Act approval and will not report on the ongoing management of the CBC species or audit actions.

Due to the City's requirements, streetscape works in residential streets will be completed at the time of the front yard landscaping by the landscape contractor. In this instance is incumbent on the landscape contractor to ensure that planting schedules meet the PLRP requirements.

Post the second year and after Lendlease is in a position to hand over the POS area(s) to the City of Wanneroo, a letter demonstrating compliance with the PLRP management actions for those areas will be provided to both the Commonwealth Department of Environment and Energy and the City of Wanneroo.

The Commonwealth and the Alkimos Beach community hold an expectation that the management actions implemented through this PLRP will be maintained in the long term. As the long-term land managers, the City of Wanneroo plays an important role in the protection and conservation of biodiversity and in engaging and educating the community in the value of local biodiversity assets.

[2] It is noted that Condition 12A refers to all three management plans, the CAMP, the FMP and the PLRP. In the context of this document, reference has been made to the PLRP only.

Specifically, regarding this PLRP the key management actions outlined in this plan and below would have been implemented to the satisfaction of both the Commonwealth and the City:

- ≥ 5ha Carnaby's Black Cockatoo habitat established across parks

The long-term management objective (post Lendlease handover to the City of Wanneroo) for the key MNES (Carnaby's Black Cockatoo), is therefore focused on managing the revegetated CBC habitat areas.

The City has staff engaged dedicated to the management of parks, natural bushland and foreshore reserve areas.

The City of Wanneroo is strongly committed to maintaining and improving the conservation of the local biodiversity and has matched this commitment through the City's endorsed Local Biodiversity Plan 2018/19 – 2023/24 (City of Wanneroo 2018).

The City's Local Biodiversity Plan identified the Alkimos Beach POS areas as areas that would meet or partially meet the following Local Natural Area criteria. Local Natural Areas are defined as unprotected natural areas over which the City can exercise the most control through its decision-making powers, policies and reserve management.

Local Natural Areas include:

- Natural areas located on private property, which the City has some control over through Policy and decision making (such as planning approvals) – this is not applicable to the PLRP areas
- Natural areas located in public or regional open space, managed by the City of Wanneroo but not fully recognised as being managed for the purpose of conservation – applicable to the PLRP areas
- State Government freehold land not zoned Parks and Recreation under the Metropolitan Region Scheme (MRS) – this is not applicable to the PLRP areas.

In adopting the Local Biodiversity Plan 2018/19 – 2023/24 the City has agreed to the following strategy for biodiversity protection applicable to the long-term management of the PLRP areas. The implementation of this strategy is focused on the protection, retention and management of biodiversity values within the City of Wanneroo.

The City is committed to developing and implementing a Natural Areas Asset Class Plan (NAACP). The NAACP would provide context, technical and policy framework for the management of all natural areas reserves within the City of Wanneroo (City of Wanneroo 2018), including the Alkimos Beach POS area.

The NAACP would establish a consistent, holistic planning methodology to achieve and maintain a cohesive approach to the management of all natural areas across the City of Wanneroo. It would act as an overarching management document to individual management plans that relate to specific site conditions of reserves.

Based on the City's long-term natural area strategy, the Alkimos Beach POS would be subject to a specific NAACP.

The implementation of the City of Wanneroo's Local Biodiversity Plan is supported by the municipal rates. The City in 2018/19 has allocated $24 million towards parks and conservation area management and $6.7 million for beach management.

6.3 City of Wanneroo proposed management

The City's long-term management action is focused on maintaining the Alkimos Beach POS including the approximate 5 ha of revegetated Carnaby's Black-Cockatoo foraging habitat (within areas of the POS) at handover from Lendlease.

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The core management focus to prevent impacts to the revegetated Carnaby's Black Cockatoo foraging areas is on the following:

- Managing rubbish and weeds
- Maintaining plantings
- Managing bushfire risk

The City will undertake the ongoing management measures following handover as detailed below in line with its adopted maintenance standards and practises for passive and active open space areas.

6.3.1 Key Long-Term Management Action

Table 7 summarises the general long term (post-handover) management actions for the relevant PLRP areas. The management actions represent the general standard actions undertaken by the City in managing passive and active open space areas and are consistent with the local community's expectations.

As noted above following post-handover to the City, the City will not be responsible for any further reporting or audit actions.

Table 7: Summary of management actions[3]

Classification	Issue	Aim	Long term management	Applies to
Active Park	Rubbish removal	To monitor and limit the amount of rubbish in the park areas to prevent water contamination	Remove any rubbish on an as needed basis and keep in tidy condition.	Park P & U
	Reticulation	To maintain the existing vegetation planted in the PLRP areas	Summer - maintained in an operable condition to meet turf and recreational requirements. Inspection requirement once every five working days. Winter – test run to keep vlaves operational.	
	General maintenance – playing surface	To maintain the health of the playing surface in the PLRP areas	Grass to be maintained/mown weekly. Areas to be kept weed free. Spraying of weeds to be carried out in accordance with identified optimal control periods and industry best practice twice per year.	
	General maintenance – surrounds	To maintain the existing vegetation planted in the PLRP areas	Grass to be maintained/mown 17 times per annum between 30mm and 50mm. 90% of the areas to be kept weed free. Spraying of weeds to be carried out in accordance with identified optimal control periods and industry best practice.	
Passive Open Space – Irrigated	Rubbish removal	To monitor and limit the amount of rubbish in the park areas to prevent water contamination	Remove any rubbish on an as needed basis and keep in tidy condition.	Park A, D, F, F1, F2 PAW, O

[3] Only includes areas that relate to Condition 12

Classification	Issue	Aim	Long term management	Applies to
	Reticulation	To maintain the existing vegetation planted in the PLRP areas	Summer - maintained in an operable condition to meet turf and recreational requirements. Inspection requirement once every five working days. Winter – test run to keep vlaves operational.	
	General maintenance – playing surface	To maintain the health of the playing surface in the PLRP areas	Grass to be maintained/mown 17 times per annum between 20mm and 50mm. 90% of the areas to be kept weed free. Spraying of weeds to be carried out in accordance with identified optimal control periods and industry best practice twice per year.	
	General maintenance – surrounds	To maintain the existing vegetation planted in the PLRP areas	All plants shall be pruned, fertilised, mulched and an effective disease control regime implemented to ensure healthy vigorous growth as required. Dead, vandalised, diseased and missing plants to be replaced as soon as practical with same or similar species. Areas to be kept weed free when and where required. Spraying of weeds to be carried out in accordance with identified optimal control periods and industry best practice.	
Passive Open Space - Unirrigated	Rubbish removal	To monitor and limit the amount of rubbish in the park areas to prevent water contamination	Remove any rubbish on an as needed basis and keep in tidy condition.	Park G, J, R, S
	Reticulation	N/A	N/A	
	General maintenance – playing surface	To maintain the health of the playing surface in the PLRP areas	Grass to be maintained/mown 17 times per annum between 30mm and 50mm. 90% of the areas to be kept weed free. Spraying of weeds to be carried out in accordance with identified optimal control periods and industry best practice.	

Classification	Issue	Aim	Long term management	Applies to
	General maintenance – surrounds	To maintain the existing vegetation planted in the PLRP areas	Any plants present will be maintained in accordance with established horticultural practice. Areas to be kept weed free when and where required. Spraying of weeds to be carried out in accordance with identified optimal control periods and industry best practice.	
	Bushfire Management	To protect the PLRP areas and surrounds from bushfire	Install and maintain firebreaks where required.	

6.3.2 Monitoring

Table 8 summarises the long-term monitoring actions to be undertaken to monitor the management of the PLRP areas. There is no reporting or compliance requirements on the City of Wanneroo.

Issue	Type of monitoring	Frequency
Rubbish removal	Inspection of the PLRP areas	A minimum service is provided twice per week – Monday to Friday. In addition every time an employee attends the site, debris is to be removed.
Reticulation	Irrigation inspection and repairs	Summer - Standard inspections 3 x per week Winter –Standard inspections monthly Repairs as required
General maintenance – playing surface	Weed control	Twice per year
General maintenance – surrounds	Weed control Tree inspection / works	Every 21 days Biannually
Bushfire Management	Driving inspection around the PLRP areas and along firebreaks	Annually or as required.

PRECINCT LANDSCAPE AND REVEGETATION PLAN (COMMONWEALTH)

Appendix A:

Landscape Vision and Design Principles Document (AECOM 2012a)

Appendix B:

Landscape and Public Realm Master Plan (AECOM 2012b)

Appendix C:

Current precinct plan

Appendix D:

Stage Planting Record for Carnaby's Black-Cockatoo Species

Appendix E:

Actual and proposed planting targets – May 2018

LANDSCAPE VISION
& DESIGN PRINCIPLES

REV D- 28TH SEPTEMBER 2012

Project	Alkimos
Document No.	60238806 -Landscape Vision + Design Principles - PD-AU-GL-PER
Report Title	Landscape Vision & Design Principles
Author(s)	Shohan Kain + Joshua Hinwood
Reviewed by	Damien Pericles
Approved by	Faron Mengler
Date	28/09/2012
File Location	P:\60238806 - Alkimos Landscape\6 Draft Docs\6.1 Reports\Phase 1C - Design Vision & Principles - REV D

REPORT NAME	ISSUE FOR	REVISION	DATE
Landscape Vision & Design Principles	Prelim Issue	0	03/02/2012
Landscape Vision & Design Principles	Final Issue	A	19/03/2012
Landscape Vision & Design Principles	Requests to revise	B	22/05/2012
Landscape Vision & Design Principles	Final Revision	C	04/09/2012
Landscape Vision & Design Principles	Final Revision	D	2/09/2012

Contents

01

PURPOSE

The purpose of this document is to define a clear vision and set of over arching landscape principles for the site. This document is intended as the first step in the establishment of a comprehensive and consistent framework for the design and implementation of landscape works across Alkimos South, Central and City Centre Precincts.

As the design process progresses towards more detailed master planning and documentation, this document should be regularly consulted to ensure increasingly detailed design decisions remain in alignment with the original landscape vision and design principles for the development.

The high level principles established in this document will be developed in more detail during the master planning phase of each precinct within Alkimos.

Objective

In order to achieve Lend Lease's key objectives for Alkimos Beach a site based vision and inspiration approach has been taken. This draws upon the unique qualities of the coastal location as the basis for the set of guiding principles that will result in the creation of a true sense of place. This approach aims to ensure that the landscape response at Alkimos Beach is embedded within the foundation of the site and creates a place of substance.

"Making Alkimos Different"...

Alkimos is a place where the new community will be able to put down roots and establish a foothold along this special stretch of coastline. Over time both the landscape and community will evolve in a balanced manner that will evoke a shared understanding between the values of the sites preserved natural assets and the needs of a growing community. The objective is to establish a careful balance between the retention and appreciation of nature including the realisation of a vibrant urban area. The key to this balance will be through a transition between urban and natural environments that ensures the uniqueness and character of Alkimos is evident throughout.

Performance

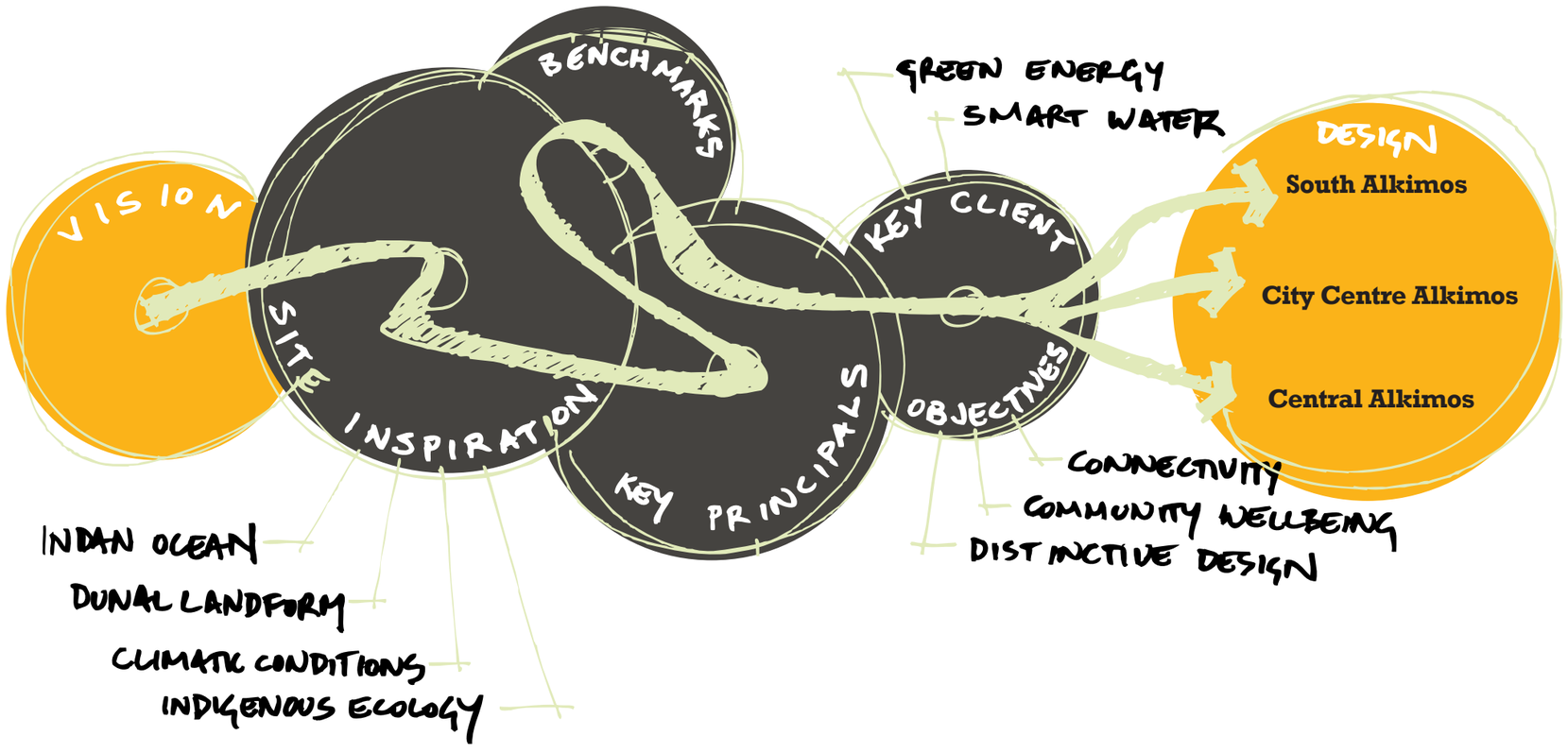
Key Performance Indicators (KPI) have been established for the Alkimos Beach project in order to measure its success against key project objectives relating to community, access, diversity, affordability, environment, sustainability and economic drivers.

In creating this document the KPI's relating to landscape design have been cross checked so the vision and principles established are addressing these and will be measured against the South Alkimos Beach development.

The SOD

The Alkimos Strategic Overview document (SOD) written by Lend Lease has been a high level influence to the following design objectives and principles outlined as it provides a solid foundation and shared vision of Alkimos Beach.

Process

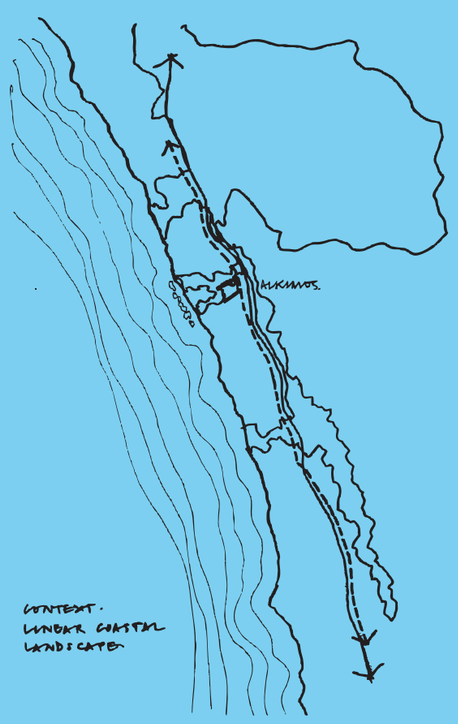

VISION
BENCHMARKS
SITE INSPIRATION
KEY PRINCIPALS
KEY CLIENT OBJECTIVES
DESIGN
South Alkimos
City Centre Alkimos
Central Alkimos
GREEN ENERGY
SMART WATER
CONNECTIVITY
COMMUNITY WELLBEING
DISTINCTIVE DESIGN
INDIAN OCEAN
DUNAL LANDFORM
CLIMATIC CONDITIONS
INDIGENOUS ECOLOGY

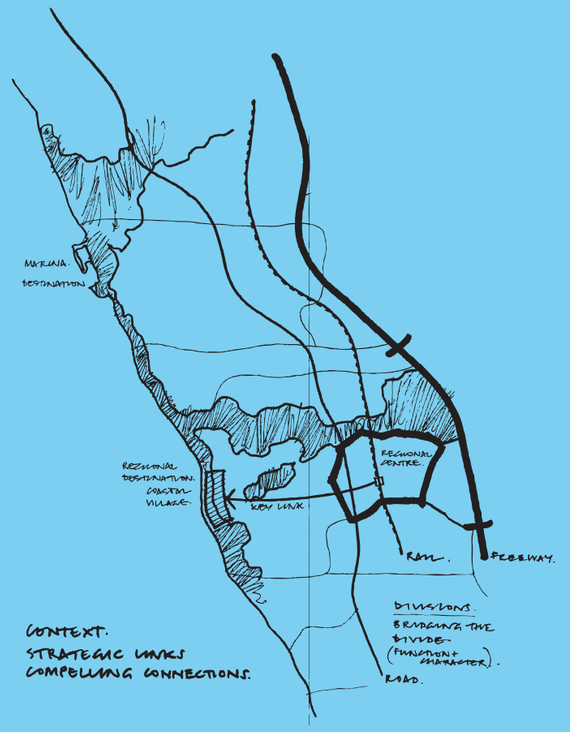
02

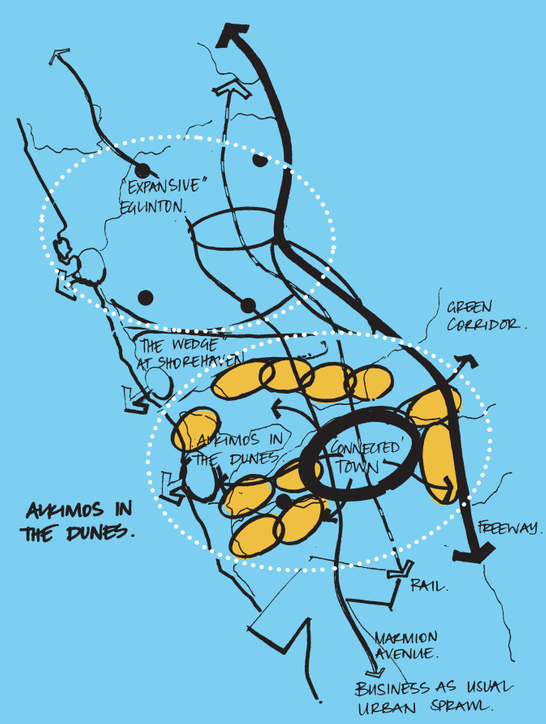
REGIONAL CONTEXT

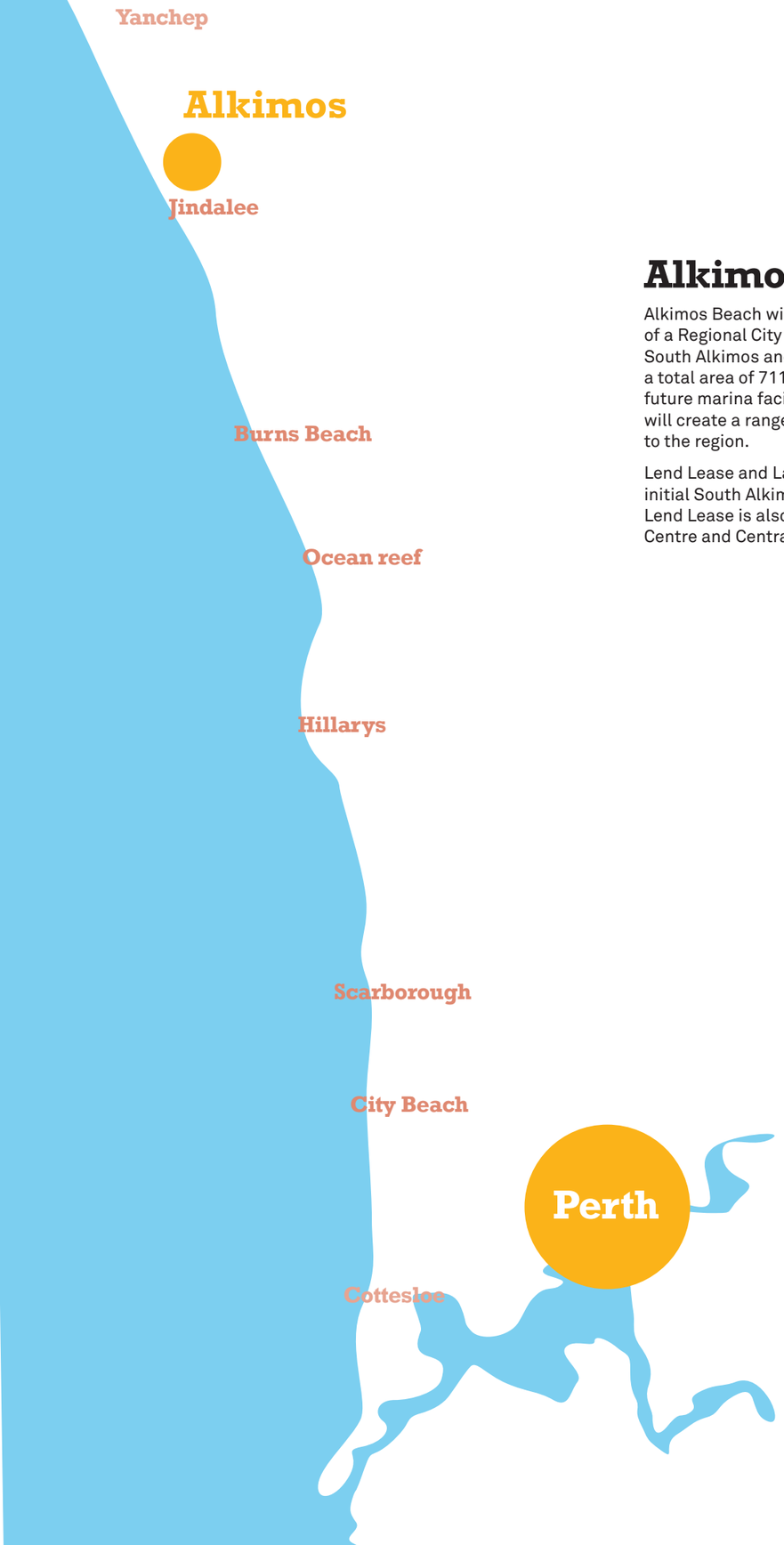
Alkimos is a new master planned community located approximately 40km north (30mins drive) from Perth's CBD area. Alkimos with the planned extension of the Clarkson rail link, Mitchell Freeway and new City Centre will become a major urban development within the main northern growth corridor of Western Australia.

Regional Context









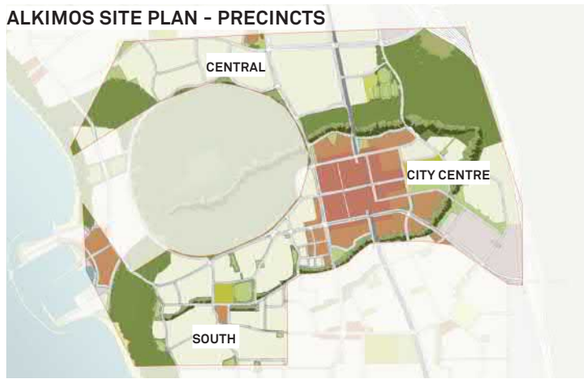
Alkimos Beach

Alkimos Beach will be a new strategic development composed of a Regional City Centre and two Residential Precincts being South Alkimos and Central Alkimos (Northern area) spread over a total area of 711 hectares. This development has potential future marina facilities and significant public open space that will create a range of new social and community infrastructure to the region.

Lend Lease and LandCorp are joint venture partners for the initial South Alkimos coastal residential development of 224ha. Lend Lease is also developing Local Structure Plans for the City Centre and Central Alkimos.

ALKIMOS AERIAL + SITE PLAN

ALKIMOS SITE PLAN - PRECINCTS



SOUTH

CENTRAL

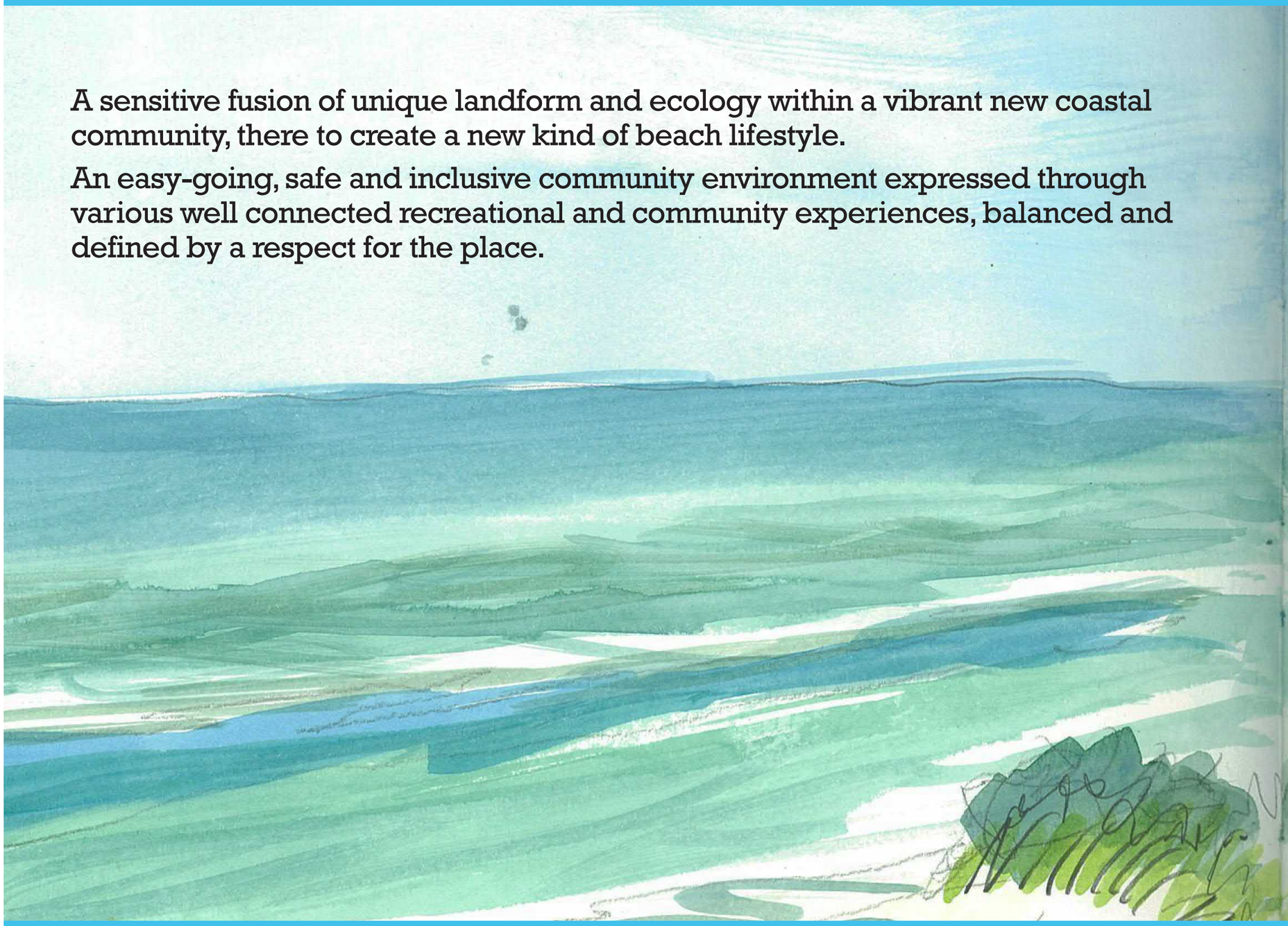
CITY CENTRE

03

LANDSCAPE VISION STATEMENT

A sensitive fusion of unique landform and ecology within a vibrant new coastal community, there to create a new kind of beach lifestyle.

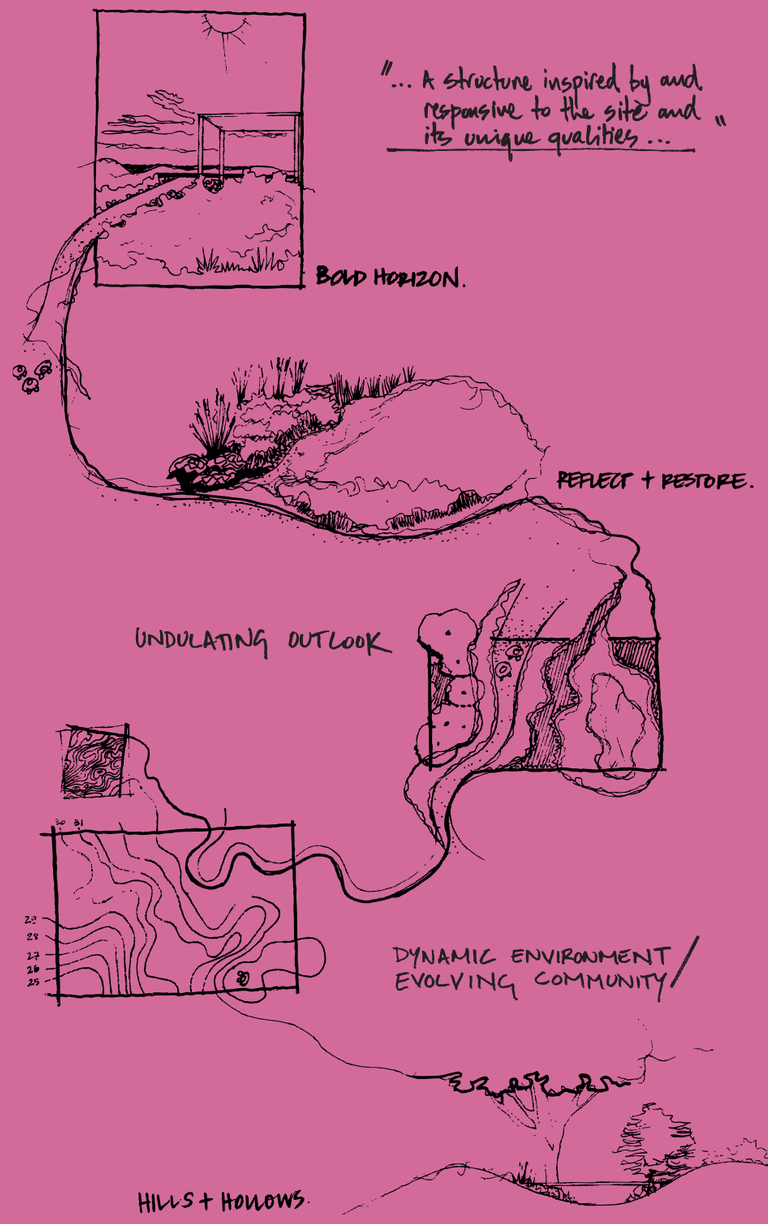
An easy-going, safe and inclusive community environment expressed through various well connected recreational and community experiences, balanced and defined by a respect for the place.



04

SITE VISION + INSPIRATION

The site exhibits a number of unique qualities that can be drawn out and aligned with Lend Lease's defining 'Place Essence' document. These unique qualities have been shaped by water, wind and nature's responses to these climatic conditions. From these qualities drawn from and inspired by the site, we have established a responsive landscape vision and design framework that aims to desliver landscapes imbued with the following themes: "Bold Horizon" ; "Reflect & Restore"; "Undulating Outlook"; "Dynamic environment/Evolving Community"; and "Hills and Hollows."



Bold Horizon

INSPIRATION:

/ The horizontal incision of the majestic Indian Ocean separates the dunes from the 'big sky'.

POTENTIAL RESPONSE:

/ Inspiration reflected in the bold horizontality and contrasting interventions of built form, for instance cantilevered lookout and viewing shelters.

Reflect and Restore

INSPIRATION:

/ Naturally occurring indigenous planting, colour and patterning shaped by landform, orientation and seasons.

POTENTIAL RESPONSE:

/ Restore areas of natural vegetation and disturbed edges of existing dunes to integrate viable and unique local character.

/ Reflect natural vegetation and landform in a stylised manner through the design of cleared landscapes.

Undulating Outlook

INSPIRATION:

/ Rolling dunal landform traversed by a myriad of pathways that reflect desire lines and offer a sense of discovery.

POTENTIAL RESPONSE:

/ Recognise the unique value of rolling landform in creating areas of exposure to wind / views and areas of protection for habitat / comfort.

/ Circulation systems that recognise major desire lines as well as more intimate 'short cuts' through the landscape, creating areas for activity, quiet contemplation and exploration.

Dynamic Environment / Evolving Community

INSPIRATION:

/ Landform and connections shaped by the wind / sun / rain and peoples desired path of travel.

POTENTIAL RESPONSE:

/ Provide choices in everyday life, choice of route and experience.

/ Provide opportunities for community education and engagement through collaborative management processes.

/ Create robust, flexible open spaces, streets and urban plazas that are capable of evolving with the needs of the community as it grows.

Hills and Hollows

INSPIRATION:

/ Lush planting that suggests proximity to the water table and the enclosed feeling of protection provided in the hollows between sand dunes.

POTENTIAL RESPONSE:

/ Plant species selected in response to elevation and proximity to the water table.

/ Dense shade in hollows supporting children's nature based play experience.

/ Localised stormwater catchment and 'natural' treatment devices such as bio-retention located in protected low points.

/ Preserve contrasting skylines to sheltered and intimate residential areas.

Identity + Character Transition

The Lend Lease 'Place Essence' document is a descriptive vision that describes the desired sense of place for Alkimos. This essence draws heavily upon the sites natural assets and is therefore closely aligned with the site responsive design process that is being undertaken by AECOM.

Alkimos will be a place of;

/ Discovery
/ Substance
/ Escape from work
/ Learning opportunities
/ Balance
/ Sensitivity

It will feel;

/ Connected to the majestic Indian Ocean
/ Invigorating
/ Hand picked
/ Soothing
/ Calming
/ Interconnected
/ Shady
/ Easy going
/ Playful
/ Cosmopolitan

The desired sense of place for Alkimos is closely aligned with the inspirational aspects of the site. This synthesis provides opportunity to establish a relaxed, playful landscape response that promotes exploration, provides numerous opportunities for discovery, experiences and reveals broad vistas and elements of surprise and delight encouraging a journey through the landscape.

EXISTING CHARACTER

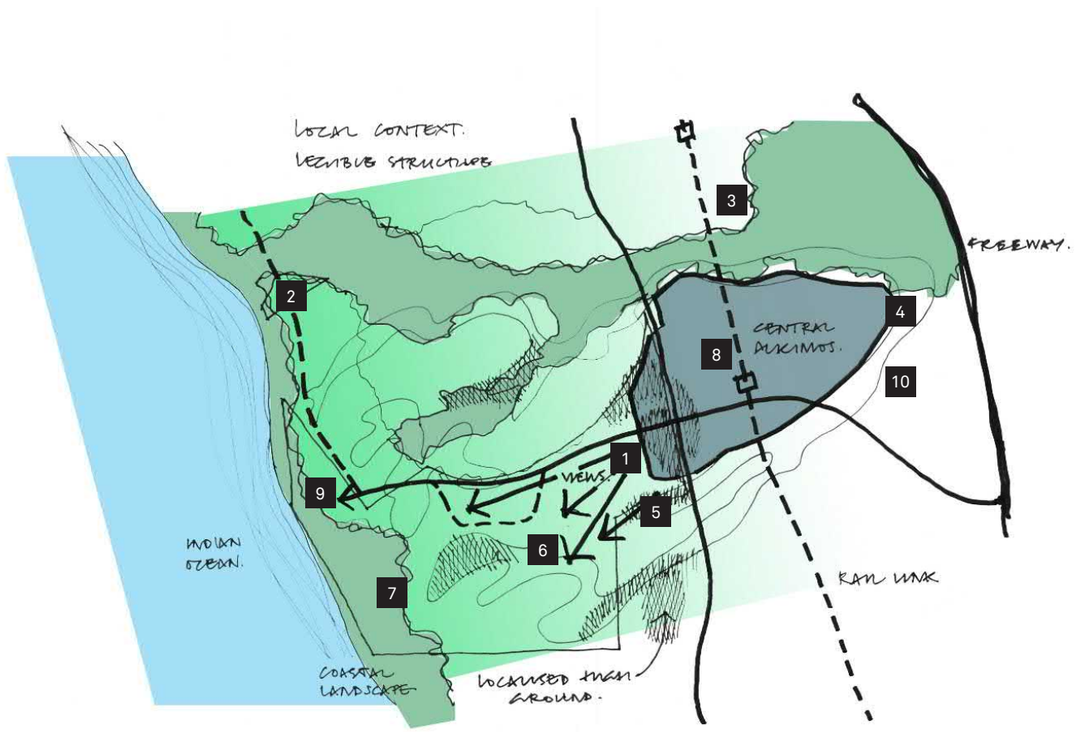
1 SITE PHOTO - SOUTH ALKIMOS PRECINCT 1 NEIGHBOURHOOD PARK

2 SITE PHOTO - ALKIMOS BEACH

3 SITE PHOTO - CITY CENTRE + CENTRAL ALKIMOS VEGETATION (EAST OF MARMIAN AVENUE)

4 SITE PHOTO - CITY CENTRE ALKIMOS PARABOLIC DUNES

5 SITE PHOTO - SOUTH ALKIMOS NATURAL DUNE + HIGH POINT TO BE RETAINED



POTENTIAL DESIGN OUTCOME

Local Character

The overall landscape design will link the Alkimos Beach City Centre to the beach physically, visually and emotionally through the creation of a strong local character that influences the design language inspired by the local Alkimos Beach.

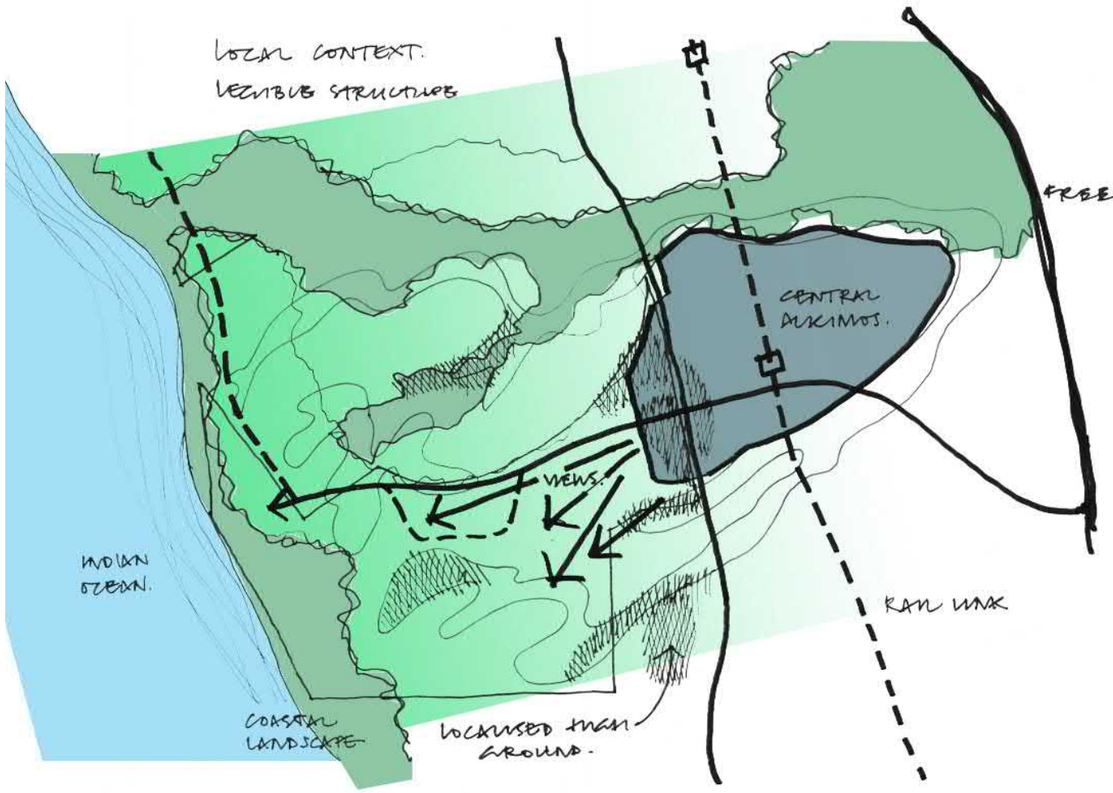
The existing landscape characters of Alkimos Beach are;

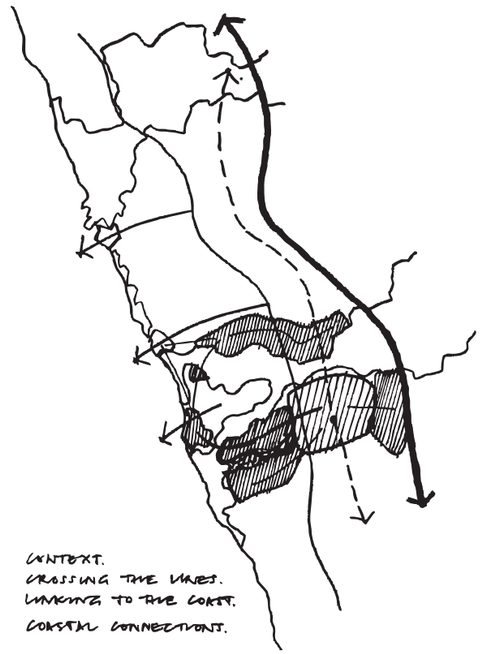
/ Indian Ocean
/ Coastal
/ Dunal
/ Urban Central Alkimos

Through the natural variations of vegetation, textures, patterns and colours in the local context and character, a transition of spaces and context of place shall be strengthened by the designed landscape. The landscape designs of the various open spaces and streetscapes will each reflect local character but will be designed to be experienced as a continuum as one journeys from the urban areas, through the neighbourhoods and on to the coastal areas at Alkimos Beach.

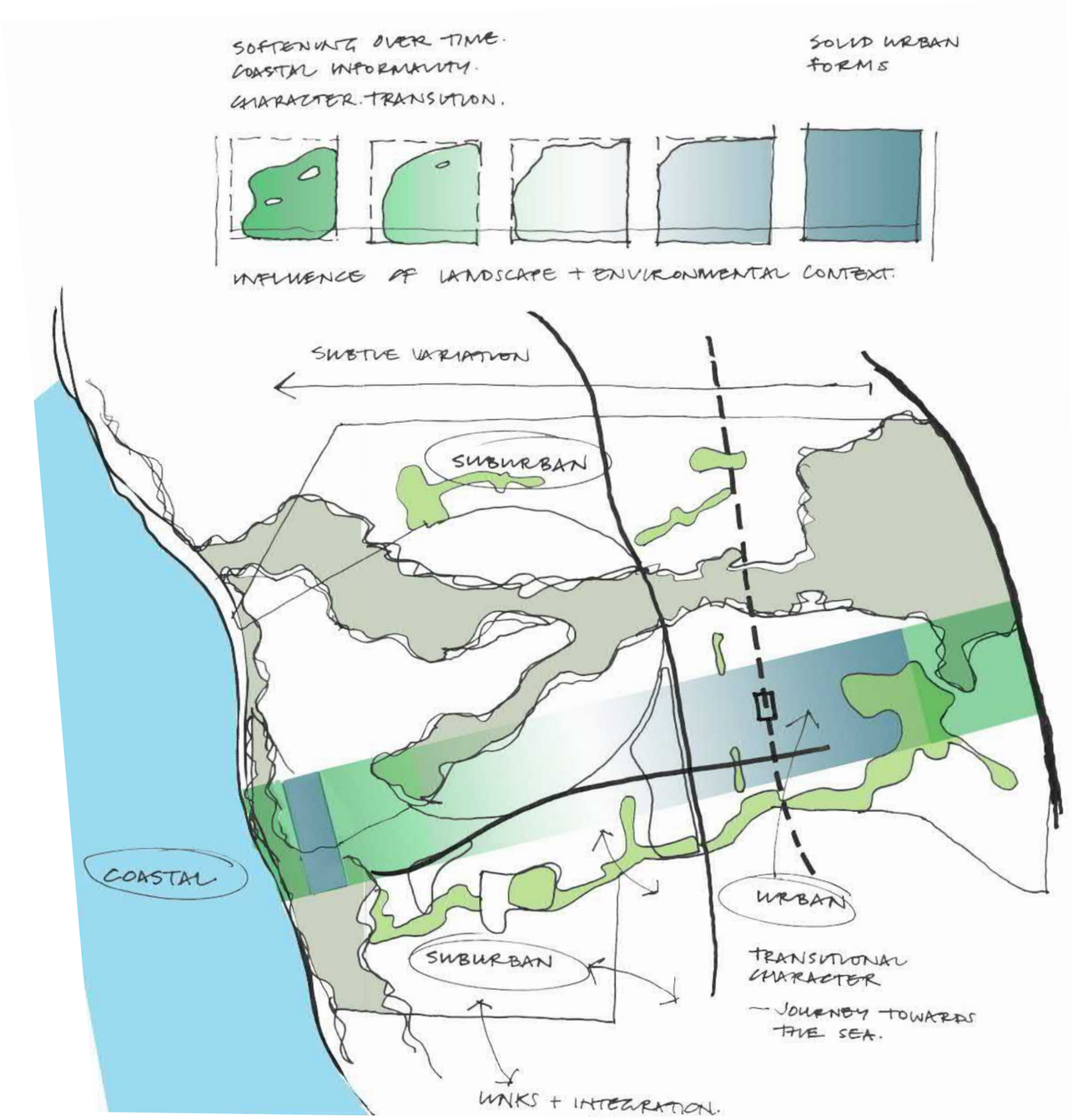
Alkimos will have an overarching look and feel that makes the landscape feel familiar but with many subtle differences and points of interest expressed at the local scale to enable a fine grained experience of the place, location and landscape

Alkimos Beach - Context





Alkimos Beach - Character Transition



05

LANDSCAPE OBJECTIVES & PRINCIPLES

Well developed project objectives and principles can become very strong project drivers and guide the Alkimos Beach project delivery and outcome.

The development of landscape objectives and principals requires an innate understanding of the vision, site, and context. Input of the broader project team and stakeholders is also essential. We understand Lend Lease and LandCorp have established objectives for Alkimos Beach and share a goal to create a community with a point of difference.

In turn we have considered how these relate specifically to our sphere of influence, understanding of site and the land development process. The following are our objectives and principles related to the landscape architectural design. Over the next two pages we have elaborated on potential actions under the categories that are relevant to Alkimos Beach.

We would look to refine these objectives following a growing of our team's understanding and input by others during the design process.

In order to deliver a responsive and appropriate design six key objectives have been defined to guide the landscape design process for the Alkimos Beach project. These are;

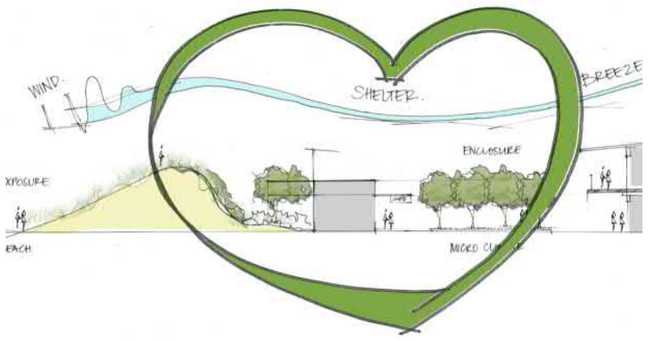
/ Livability and Community Wellbeing
/ Connectivity and Linkages
/ Environmental Sensibility
/ Climate Adaptation and Water
/ Culture, Recreation and Open Space
/ Character and Identity

The landscape principles respond to the above broad objectives through detailed site analysis, an understanding of local ecological processes, interrogation of the brief and the proposed urban form.

Livability and Community Wellbeing

- A key factor for the success of Alkimos will be its ability to foster a sense of community engagement and stewardship over both the sites natural and built landscapes.
- Provide abundant shade to pathways and cycleways by using landscape/landform to shelter planting and pedestrians to increase comfort of walkability.
- Provide a variety of landscape experiences that reveal the retained and new ecologies of Alkimos Beach.
- Create robust spaces that can cater for an array of active and passive uses.
- Community market place.
- Amenity that facilitates outdoor events such as community performances and cinema.
- Learning and nature based education opportunities such as interpretive trails and signage that provide opportunities for discovery.
- Art elements embedded in the landscape that prompt discussion and interpretation.
- Use landscape elements to establish 'green hearts' for each precinct – places for people to meet and engage with the community.
- Foster a sense of responsibility to, and respect for nature through providing livable community and culture that care / embrace the Alkimos Beach site.
- Bring like minded members of the community together.
- Foster a sense of responsibility to and respect for nature and conservation work to help protect native plants and animals that inhabit the site, in particular Carnaby's Black Cockatoo and the Graceful Sun Moth.

GRACEFUL SUN MOTH



PROVIDE GREEN HEART OR OASIS FOR EACH ALKIMOS BEACH PRECINCT.

CARNABY'S BLACK COCKATOO

Connectivity and Linkages

- Create diverse 'moods' within the Public Open Space (POS) network that provides varying degrees of exposure versus intimacy, to cater for both passive and active recreation needs.
- Create a sense of movement and journey through open spaces through the expanding and contracting nature of the experience i.e. attractive enclosed nodes interspersed between broader open spaces.
- Celebrate community transport hubs.
- Provide landscapes that encourage ease of movement and connectivity through the precincts e.g. along bicycle transport and pedestrian routes.
- Provide multiple pedestrian and cycle options through POS where possible.
- Provide varying levels of accessibility; wide, hard footpaths, elevated boardwalks and informal sandy tracks to suit the landscape functions and environment.
- Create a sense of movement and journey through open spaces through the expanding and contracting nature of the experience (i.e. attractive enclosed nodes interspersed between broader open spaces.
- Provide for ease of movement and connectivity through creating streetscapes as places for people to enjoy.
- Provide braided, interlinking options that diverge and converge; direct commuter routes and meandering recreational routes.
- Provide varying levels of accessibility; wide, hard footpaths, elevated boardwalks and informal sandy tracks.
- Learning and nature based education opportunities such as interpretive trails and signage that provide opportunities for discovery.

SENSITIVE PEDESTRIAN AND CYCLE ACCESS THROUGH DUNAL GREEN LINKS

FICINIA NODOSA - LOCAL COAST SPECIES

Environmental Sensibility

/ Use the character of Alkimos's varied ecosystems to inform design response.

/ Design tree plantings and garden beds in public open space (POS)and street species to help address air cooling/ heat island and carbon sequestration benefits.

/ Where dunes form significant part of the open space system there will be 3 key design responses:

  / Retain – high value undisturbed dunes are to remain in their existing condition;

  / Restore – disturbed parts of retained dunes to be restored and revegetated in keeping with their natural character; and

  / Reflect – parts of linear dunes to be removed are designed in a more stylized manner that introduces amenity such as pockets of turf, furniture and shelter whilst reflecting prior existing character.

/ Create ecological linkage between POS, streetscapes and surrounding areas by establishing appropriate and connected street tree networks.

/ Follow Xeriscaping and Hydrozoning principles for POS to reduce water use.

/ Retain existing mature trees where possible.

/ Design structured landscapes into POS to include canopy, and balanced understory/groundcover species capable of supporting wildlife.

/ Use planted embankments in preference to terraced landscapes or retaining structural walls.

/ Design landscape paths and walls to blend in with the local topography, native plant palette and use of vernacular materials.

/ Make use of climate responsive landscape design – address local wind conditions and average annual rainfall.

/ Ensure that weed management is undertaken with minimal use of chemical pesticides or herbicides.

EXCITING PARKLAND EXPERIENCE WITH NATURE OR THEMED PLAY

/ Prevent the planting of weed species as detailed on the WONS (Weeds of National Significance), weeds on the National Environmental Heritage List (DSEWPaC), State declared species and those incorporated in the City of Wanneroo TPS.

/ Minimise the use of chemical fertilisers for plant establishment.

/ Action during earthworks and construction is to clear and stockpile green waste. Where possible, incorporate re-use of on-site materials such as limestone within the development and provide re-use of green waste for mulch.

CAPTURE WATER RUN-OFF INTO STREETSCAPES SWALES WITH INVENTIVE KERB DESIGN

Climate Adaptation and Water

/ Design landscapes that minimise impacts on the natural water cycle and protect health of ecosystems through Water Sensitive Urban Design (WSUD).

/ Integrate WSUD devices into the landscape e.g. tree pits, swales, kerb design etc by collaborating at the planning stage with the project hydrologists. Incorporating WSUD will reduce the water required for irrigation.

/ Improve the water holding capacity of sandy soils (by the use of soil amendments). This will reduce the requirement for irrigation.

/ Ensure at least 85% of new plant material in the public realm is an local species and ensure that 50% or greater of street trees are native species suited to their intended location.

/ Use energy efficient lighting within POS and main commuting connections.

/ Ensure that irrigation methods aim to minimise water use through methods such as sub-surface irrigation and design of irrigation to respond to landscape hydrozoning/micro climates.

/ Orientate planting around the wetter months of the year to ensure seedling survival and minimise irrigation requirements.

/ Local species will be drought tolerant species to reduce the requirement for irrigation. Landscaping should require no extra water than supplied by typical local rainfall patterns (other than to assist in the initial establishment of landscaping).

BIO-RETENTION AS GREEN LINKS

NATURE-BASED PLAY

INTRODUCE ART AND LANDSCAPE TO PROVIDE SHADE TO ALKIMOS BEACH

Culture, Recreation and Open Space

/ Design to achieve nature-based play environments embedded within the community open spaces that provide opportunities for unstructured play.

/ Design landscapes to maximise community engagement, education and learning opportunities such as interpretive trails and signage to provide intermittent or regular discovery.

/ Incorporate art elements embedded in the landscape that prompt discussion, interpretation and delight.

/ Where appropriate invest in vertical landscape elements; they are appreciated more and provide greater impact than ground plane finishes.

/ Locate intimate areas including play and picnic / barbeque zones in sheltered areas behind dunes.

/ Reflect the natural response to hills and hollows by positioning copses of trees and denser planting behind dunes as opposed to on high points.

/ The overall landscape design shall link the Alkimos City Centre to the beach with pedestrian and bicycle paths creating a variety of activity zones and allow creation of intimate places or retreat during the warm seasonal climate.

/ Ensure that landscaping follows CPTED safety guides and allows ease of movement throughout Alkimos Beach.

/ Provide lighting along main pedestrian or bicycle routes to ensure safe, well-lit paths and open space areas.

/ Ensure low shrub and groundcover species to allow clear sight lines over and through planting areas.

/ Use semi-permeable fences or interrupted walls to ensure gains to safety but minimum loss of privacy.

Character and Identity

Alkimos Beach will be developed with its own unique identity and character. A 'different' place within the Northwest corridor will be created through application of the following key points.

MATERIALITY & GRAIN

- Crafted and fine grain built landscape elements are preferred over catalogue items.
- Make allowances for the weathering of materials and the development of 'patterns' as a reflection of place. Maximise the use of recycled materials and reclaimed site materials.
- Utilise durable materials for hard landscapes - robust hardwoods, concrete, steel and stone.
- Ensure consideration of holistic and sustainable materials use at the earliest stage of design.
- Design and construct well detailed shelters to increase amenity in preference to highly detailed paving finishes.

COLOUR

- Avoid use of blue tones in landscape materials to avoid competition with the expansive backdrop of sky and ocean.
- Planting palettes and layouts will be inspired by natural site vegetation patterns.
- Structural landscape elements such as pathway, and walls will reflect the neutral sandy tones to create a sense of belonging and timelessness.
- Small highlights of bold colour will be used sparingly in discreet locations applied to art, furniture and structures to be 'discovered' and create surprise and delight

PLANTING

- Where possible, existing valuable landscape elements are to be retained and enhanced to create a higher sense of permanence and sense of belonging within the landscape.
- Where development infrastructure and/or level differences preclude retention, planting will be re-established to reflect the character of the naturally occurring species or alternative planting structures that ensure natural mimicry.
- Planting at Alkimos will be comprised of predominately indigenous vegetation – native and local.
- Maximise and encourage the use of local species in private gardens.
- Plant garden areas using matrices as opposed to mass planting or banded patterning. Planting matrices are to be derived from site surveys approximately three by three square meters (3m x 3m) to reflect the natural micro climatic preferences of species and naturally occurring groupings of species.
- Within public open spaces, Alkimos will feature a high proportion of planted areas in response to a strong desire to reflect the character of surrounding dunal landscapes and minimise water use and maintenance requirements.
- Turf areas will provide amenity for structured sporting, informal kick about areas and recreational activities.
- Utilise smaller tree stock, densely planted as early as possible in the coastal areas.
- Use of larger/advance trees stock can be planted in the more urban built up areas as they provide protection from wind and coastal conditions.

POSSIBLE VIBRANT CUSTOM FURNITURE CREATES A DISTINCT CHARACTER

POSSIBLE VIBRANT CUSTOM FURNITURE CREATES A DISTINCT CHARACTER

COASTAL BEACH EXPERIENCE

06

LANDSCAPE CHARACTER TYPES

The landscape character is what makes an area unique. It helps us identify the features that give a locality its ‘sense of place’ and pinpoints what makes it different from neighbouring areas.

In order to deliver a responsive and appropriate design three key landscape types have been defined to guide the design process of the Alkimos Beach project. These are;

/ Coastal
/ Urban
/ Neighbourhood

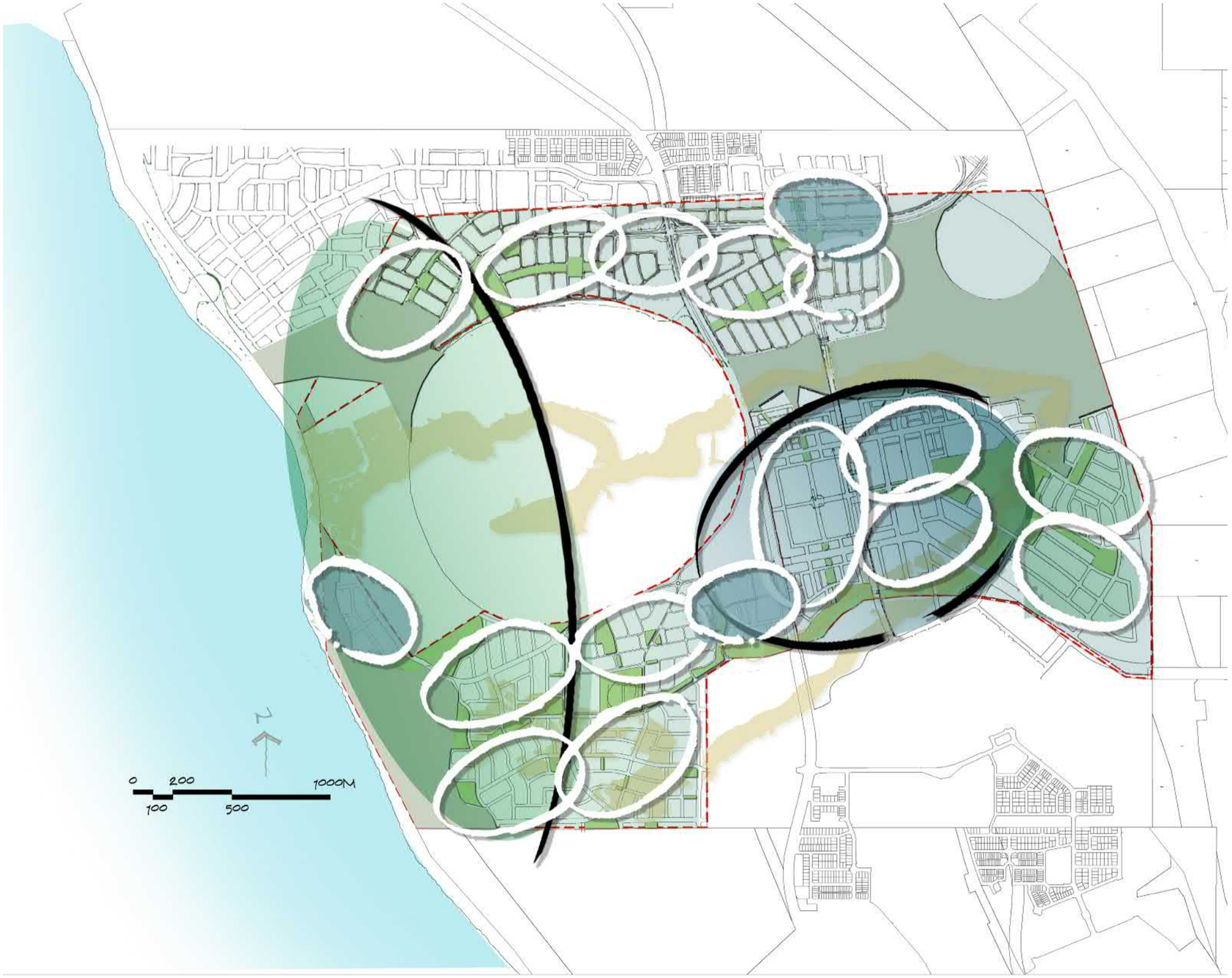
These three character types have been defined through the location, planning and urban form, environment and future functions of place. Within the site two other character types have been noted as having distinct and unique qualities that will be celebrated;

/ Parabolic Dune
/ Precincts (each to have a identity)

The diagram opposite depicts these landscape types and following chapters will develop the look, feel and touch of these “characters”.

Alkimos Character Types

- COASTAL CHARACTER
- NEIGHBOURHOOD CHARACTER
- URBAN CHARACTER
- PARABOLIC DUNE
- PRECINCT CHARACTER



07

LANDSCAPE DESIGN PALETTES

Four main landscape design palettes will be used to help us deliver the objectives, principles and landscape strategy during the design process.

These palettes are applied to help reinforce the landscape character of Alkimos Beach from the macro scale down to the micro scale. The four main palettes are;

/ Colour
/ Material + grain
/ Planting
/ Form

The landscape palettes matrix opposite shows the hierarchy and consistency of palette application within each landscape character type.

The application of these palettes will be vary subtly in Alkimos Beach depending on which character type they fall into e.g. a small detail of the landscape component - paving, seat bench, shelter, lookout, bin etc may change in colour, treatment and texture.

A balance of overall consistency with local differentiation will be reinforced by varying the design language and built elements within the public realm.

COLOUR

MATERIAL + GRAIN

PLANTING

FORM

Landscape Palettes Matrix - Level of Consistency

ALKIMOS BEACH PROJECT

LANDSCAPE PALETTES	SITE WIDE	PARABOLIC DUNE	LANDSCAPE CHARACTER TYPES	PRECINCT WIDE
Colour palette	■	■	■	■
Materials palette	■	■	■	■
Planting palette	■	■	■	■
Form language/ palette	■		■	

■ Primary definition (overarching style)

■ Secondary definition (local influences on overarching style)

Colour Palettes

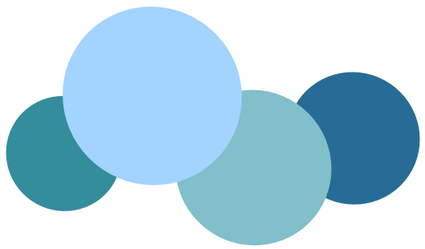
To ensure the landscape design response is in keeping with the site, it is important that colour and materiality respect and align with the colours or textures of the natural environment.

The Alkimos Beach sites colour palette is dominated by the blue – green - grey spectrum;

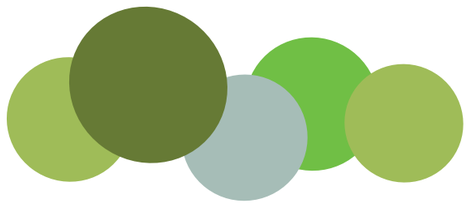
- The big blue sky and expansive horizon of the Indian Ocean form a constant backdrop to Alkimos Beach.
- The existing natural vegetation palette exhibits a wide spectrum of green through to grey that is eclectic, textured and fine grain.
- Between the dominance of blue and green colours the site holds coastal sandy beaches, pathways and unique limestone forms creating linear incisions of soft tones. To the east inland soft yellow white tuart flowers and grey browns of canopy trees become the neutral tones.
- At certain times of the year, small scale, vibrant highlights of colour create bold 'pops' of yellow and orange, purple and red, with individual flowering trees drawing attention from a distance and small flowering groundcovers providing a sense of discovery and radiance to the landscape.

The natural Alkimos Beach site wide provides inspiration to the landscape colour palette and the application to the design components.

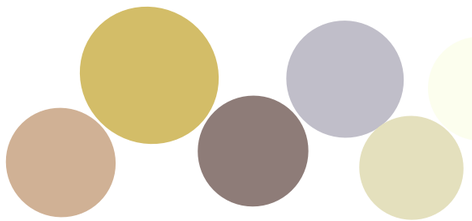
Backdrop



Nature & Softscape



Base



Highlights

DESIGN APPLICATION

/ Blue will not be used in the landscape as we do not wish to compete with the expansive backdrop of the sky and ocean.

DESIGN APPLICATION

/ The planting palette will not only be comprised of predominately indigenous vegetation, but will also be applied in a way that reflects the uncontrolled, organic texture and variety of nature.

DESIGN APPLICATION

/ Base structural elements such as pathways, and walls will reflect the neutral sandy tones to create a sense of belonging and timelessness.

DESIGN APPLICATION

/ Small highlights of bold colour will be used sparingly in discreet locations applied to art, furniture and structural elements that will be able to be discovered along ones journey through the site.

Colour Strategy

The colour palette strategy involves combination of natural colours identified in the existing site with complimentary brand based colours identified in the Place Proposition document by Lend Lease.

The diagram shown captures the formula for allocating colours to each percent across the project within each landscape character zone.

The principles implicit in the strategy are:

- Site colour palettes and mixes reflect the existing vegetation and materials in the landscape character zone of that area (or percent)
- Brand colours are selected as a 'cultural' layer and are chosen to compliment the natural site colours and mixes of that area
- To determine a Precinct colour palette a small selection of key colours from the existing site colour palette are chosen together with complimentary brand colour(s)

Note: Colours are place holders at this stage in the planning process. It is anticipated that final colour palettes will be established in coordination with built form guidelines.

Formula:

A selection of colours from the landscape character zone site colour palette

+

A selection of complimentary colour or colours from the feature colour palette

=

Precinct Colour Palette

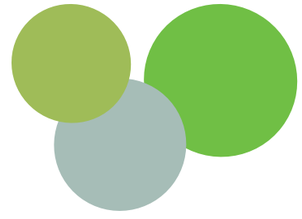
PLACE PROPOSITION FEATURE AND BRAND COLOUR PALETTE

Primary

Secondary

Coastal Character

COASTAL SITE COLOUR PALETTE



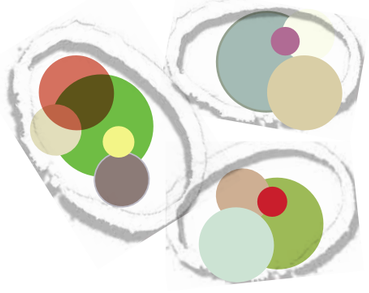
NATURE & SOFTSCAPE 60%
BASE 30%
HIGHLIGHTS 10%

+

ALKIMOS BEACH FEATURE COLOURS

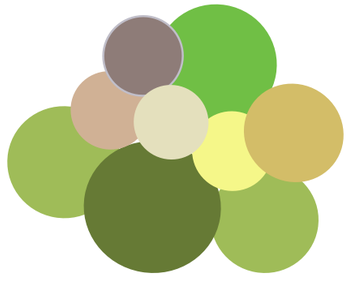
=

PRECINCT COLOUR PALETTES



Neighbourhood Character

NEIGHBOURHOOD SITE
COLOUR PALETTE



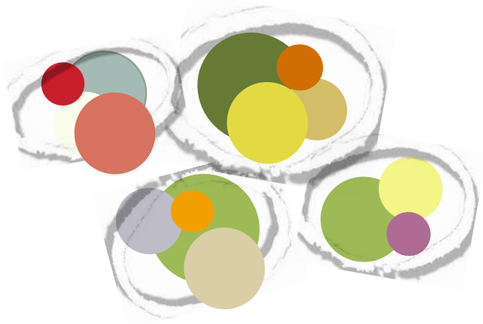
NATURE & SOFTSCAPE 50%
BASE 30%
HIGHLIGHTS 20%

+

ALKIMOS BEACH FEATURE COLOURS

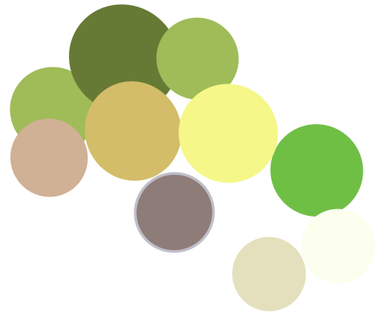
=

PRECINCT COLOUR PALETTES



Urban Character

URBAN SITE
COLOUR PALETTE



NATURE & SOFTSCAPE 35%
BASE 25%
HIGHLIGHTS 40%

+

ALKIMOS BEACH FEATURE COLOURS

=

PRECINCT COLOUR PALETTES

Materiality & Grain Palette

To reflect the everlasting and unique nature of the Alkimos Beach landscape, the workmanship and grain of built elements within the landscape should replicate a level of quality and amenity within the development including;

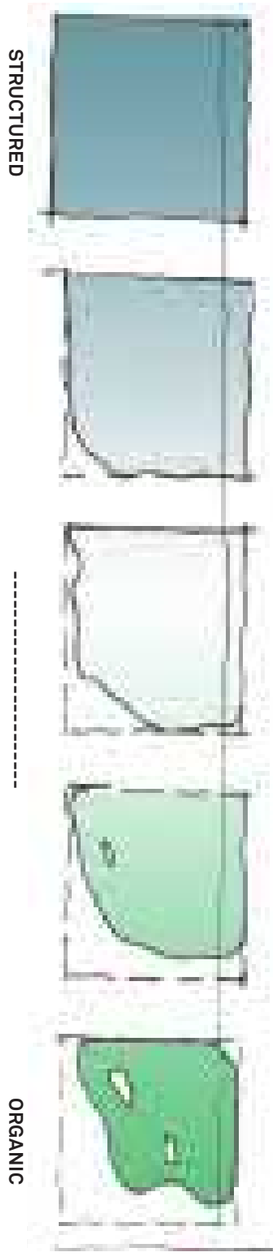
/ A level of customisation
/ Bespoke elements
/ Include weathered recycled materials
/ Reclaimed materials from site; limestone, weathered fallen trunks and vegetation debris (mulch).
/ Robust hardwoods, concrete, steel and stone
/ Predominantly finishes that are textured, juxtaposed with selective use of smooth contemporary detailing

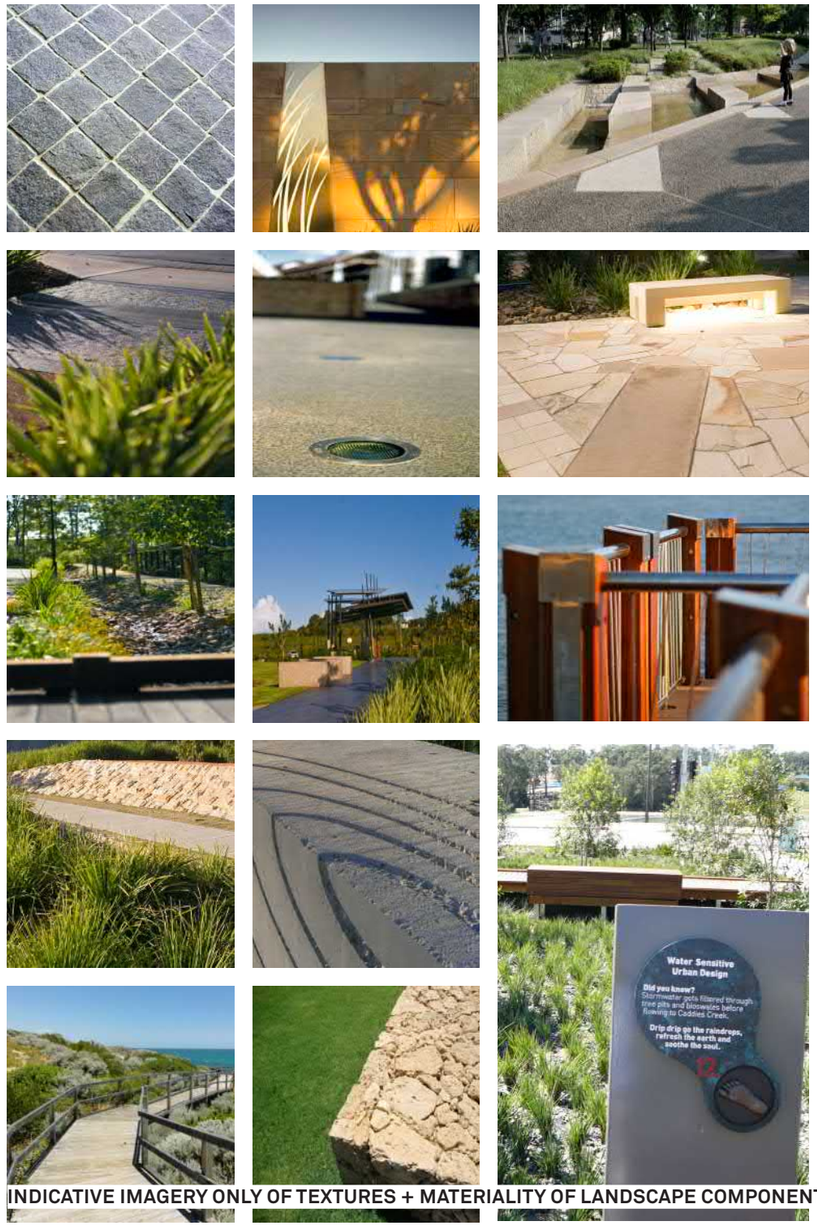
Material selection will be influenced by four criteria;

/ Sustainability
/ Cost
/ Longevity and
/ ‘Fit’

As part of a holistic and sustainable approach to site, the design materials should be subjected to a sustainability review to lower the project’s environmental impact. This review should consider;

/ Embodied energy
/ Energy consumption (lighting)
/ Durability
/ Reusability and
/ Local sourcing





INDICATIVE IMAGERY ONLY OF TEXTURES + MATERIALITY OF LANDSCAPE COMPONENTS

Planting Palette

Where possible, existing valuable landscape elements are to be retained and enhanced to create a higher sense of permanence and sense of belonging within the landscape. Where development infrastructure and/or level differences preclude retention, planting will be re-established to reflect the character and species of the naturally occurring environment.

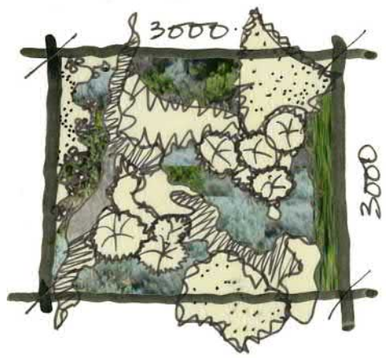
Planting at Alkimos will be comprised of predominantly local native vegetation. A transition approach is proposed that will evolve from 85% native tree and understorey species applied in organic, uncontrolled patterning within the western beach, through to a maximum 15% introduced understorey and 50% introduced tree species within the City Centre precinct to the east. These ratios will be fine turned to meet EPBC approval conditions and other directives.

PLANTING MATRICES

To achieve an authentic interpretation of the planting mixes that exist on site it is proposed that garden areas are predominantly planted using matrices as opposed to mass planting or banded patterning. Refer diagram opposite depicting a suggested 3m x 3m area mapping the species on-site that will influence the planting list and grouping of species.

Alkimos Beach will exhibit a higher proportion of planted areas compared to surrounding residential developments as a response to a strong desire to reflect the character of the surrounding dunal landscape. Turf areas will still be required, however to provide amenity for both structured sporting and informal recreational activities.

This turf will require irrigation to sustain its growth, however a blanket manicured lawn approach to Alkimos Beach is not in keeping with the proposed character of the development or its 'smart water' objectives. In order to achieve a balance between lowering water consumption and maintaining an acceptable level of visual amenity, a hydrozoning approach will be proposed. This approach applies a diminishing level of water to turf and garden areas relative to their prominence and intensity of use.



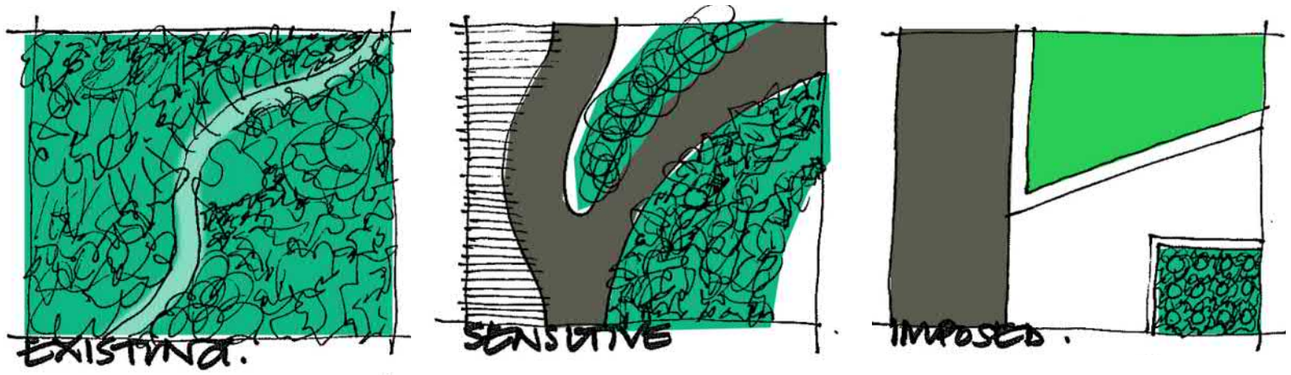
This 3m x 3m area is a sketch example of planting matrices that are to be derived from site surveys to reflect the natural micro climatic preferences of species and naturally occurring in groupings existing in Alkimos Beach.

IMAGERY OF LOCAL PLANTING SPECIES + EXITING CONDITION ON SITE

Form Palette

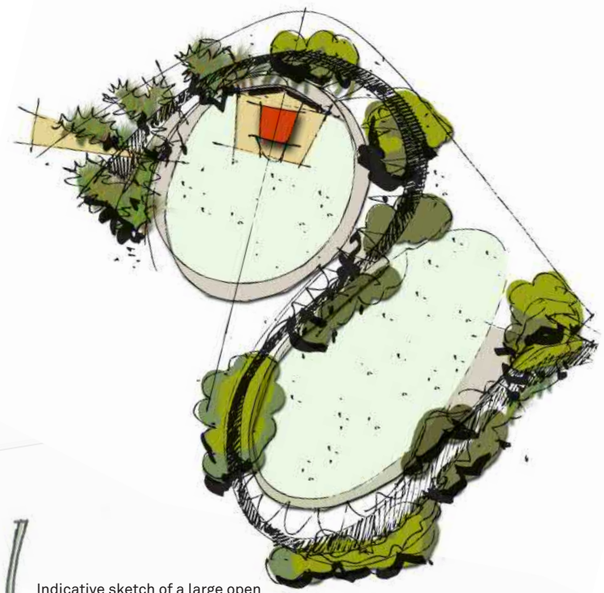
The form palette has been inspired by the existing site and Alkimos Beach the landform, layout of open spaces and connections will draw from the sites dunal forms. Through studying how the site has been shaped by the wind, environment and movement trails established the design forms will follow this curvilinear from the coastal environment to the more direct or structured nature of the City Centre to suit the established landscape character.

The sketches opposite are suggestive of how the landscape form creates a design language to suit the characters of site.



Form / Fit:

- / Organic shapes work with the natural landforms and parklands to neighborhood and coastal landscapes
- / Sinuous lines inspired by windblown sand and existing forms in nature
- / A transitional approach that responds to movement ‘on’ the landscape in urban areas, ‘within’ the landscape in open spaces and ‘above’ the landscape in retained natural areas.



Indicative sketch of a large open parkland with organic forms.

Verticality:

- / Invest in vertical elements; they are appreciated more and provide greater impact than ground plane finishes.
- / Larger tree stock, well detailed shelters and focal artwork/ landmarks increase amenity more than highly detailed paving finishes.
- / Way-finding artwork.

Example of a vertical element in the landscape providing a strong visual impact and functions as shade for the users.

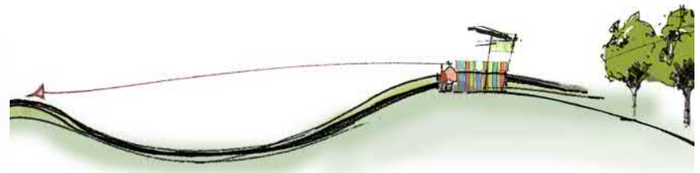
Location - Exposure / Protection

- / Site landscape elements and activity areas relative to the required level of exposure or protection required.
- / Locate intimate areas including play and picnic / barbeque zones in sheltered areas behind dunes.
- / Reflect the natures response to hills and hollows by positioning copses of trees and denser planting behind dunes as opposed to on high points.
- / CPTED objectives to be observed.

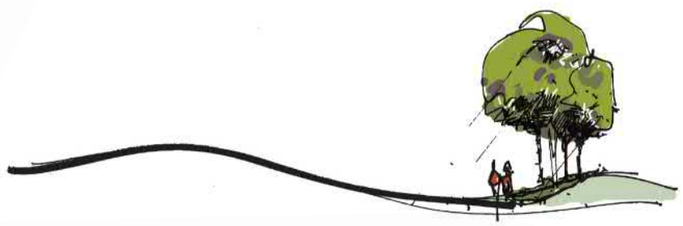
Create a landscape that responds with climate and location with forms.

Scale / Proportion:

- / Creation of shady, human scale landscapes and places.
- / The overall relationship between landscape and use relate to unity and variety, rhythm and balance, accent and contrast, scale and proportion.
- / The design shall organize an element or structure to create or minimize points of emphasis in, on and through the landscape.
- / Respect bold horizon with creating sunken lookout points in the dunes and providing built structures and shelter huts in hollows.



Bunkered or sunken lookout form to respect the ‘bold horizon’ and allowing dunescape to be the feature emphasising the bold horizon. High points or hills to have lighter shade structures.



Provide a landform and micro-climates to suit the function of spaces and scale of use.

08

LANDSCAPE TYPOLOGIES

Alkimos Beach will have a variety of typologies relating to landscape, this allows a systematic classification to types of landscape that have characteristics or traits in common. We have identified 4 landscape types;

/ Built form interface
/ Public open space
/ Streetscape
/ Natural environment

The following chapter explains these landscape typologies at a high level and touch on how the landscape character will create a unique look and feel of open spaces.







Built Form Interface

Redefining the boundaries for responsibility and management of precinct streets and open spaces will be important in creating the landscape character and sense of place through, respecting and reflecting the natural environment, working with the Local authority and engaging with the local community at Alkimos Beach.

Understanding and respecting the quality and character of the built and natural environment shall be reflected in the landscape design and treatment of each of the precinct spaces to create unique Alkimos Beach character from the City Centre to the Coastal development.

Alkimos Beach shall deliver a range of built form, public realm and landscape guildlines and strategies for the stakeholders and community members to address issues of respecting the following key points;

/ create a structured and controlled urban edge of future development sites in key retail streets
/ contained planting to front of retail strip
/ front yard landscaping types and characters
/ retaining treatments
/ fencing
/ paving + paths
/ native planting designs
/ letter boxes
/ maintenance
/ edge treatments to the Alkimos Beach project and adjoining land developments

Mixed Use + Retail

INDICATIVE IMAGERY FOR URBAN AREAS WITHIN CITY CENTRE + CHARACTER OF LANDSCAPE

CREATE COASTAL CHARACTER - SUGGESTIVE LOOK + STYLE

Detached Housing

CHARACTER IMAGERY OF TREATMENT TO FRONT YARDS

EXISTING BEACH COMMUNITY IN CITY BEACH - COASTAL PLANTING SOFTENS THE BUILT FORM

Terrace Housing

GIVE PARKLAND FRONTAGE TO TERRACES HOUSING

INDICATIVE NATURAL TREATMENT OF PLANTING TO FRONT OF TERRACE HOUSING

Public Open Space

The natural beauty and leisurely coast lifestyle of Alkimos shall be reinforced through the hierarchy and location of the public open space framework. The overall landscape design shall link the City Centre to the beach with pedestrian and bicycle paths creating a variety uses to the outdoor spaces and allow creation of intimate places or retreats during the warm seasonal climate.

The public open space includes urban markets or gathering spaces, local and linear parks, active playing fields and nodal points will offer a wide variety of recreational choices. These include picnicking and barbecues, nature play landscape, learning and discovery, open lawns for group activity, exercise stations, lookout points, shelters and play equipment, extensive streetscapes with pedestrian links, and bio-retention basins throughout the Alkimos Beach development.

Parklands will vary within each precinct and from Precinct to Precinct with creative use of organic colours, forms, materials and planting to reflect the coastal location.

The dominant use of approximately 85% native species will be used within these green spaces and where possible shall incorporate increased protection of the area's natural attributes and provide better connections between the City Centre and Alkimos Coast.

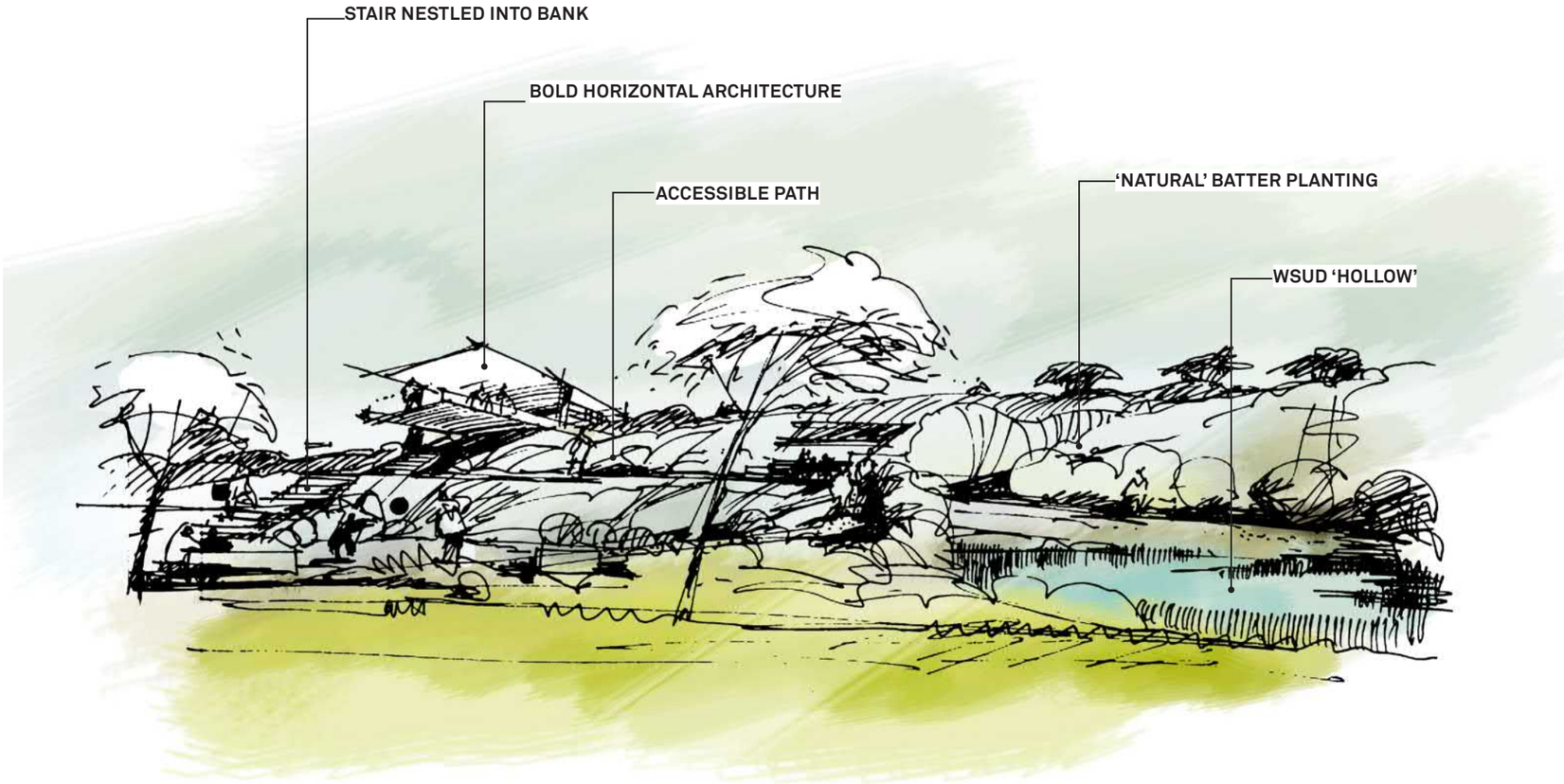
Having green and naturalistic parklands in the heart of each precinct in Alkimos will help make it a great place to work, live and visit.

Both CPTED safety guides and ease of movement throughout Alkimos will be key to the open space framework with providing;

- / lighting along main pedestrian or bicycle routes being well-lit and in the open areas.
- / low shrub and groundcover species to allow clear sight lines over and through planting areas.
- / semi-permeable fences or interrupted walls with gains to safety but minimum loss of privacy.
- / minimise design of enclosed spaces where possible along main connection routes such as designing overpasses rather than underpasses to minimise places of tunnelled access.

Suburban Coastal

Typical local park nestled into a hollow with organic planting and nature based play



Urban Park/Plaza

Coastal Park

Local/Linear Park

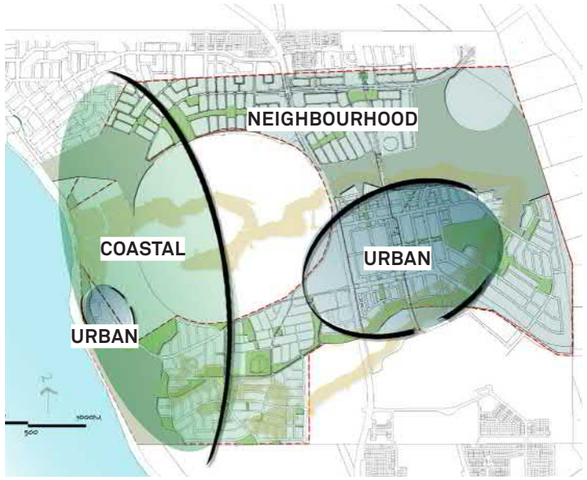
Active District Park

INDICATIVE CHARACTER IMAGERY OF OPEN SPACES

Public Open Space Matrix

The open spaces within Alkimos Beach have been broken into ten landscape typologies. The following descriptions presents a matrix of information showing each of these types against key points outlining common features. The three overarching character types then define open space in terms of experience, function, form and landscape qualities – look, feel and touch.

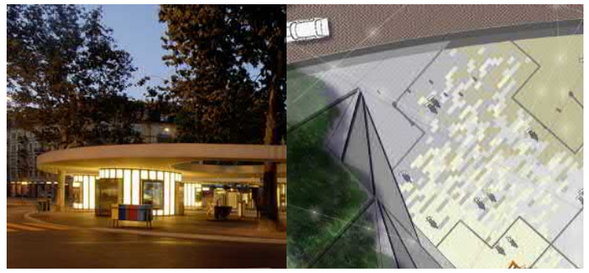
All open space typologies have typical traits as outlined, however differ in sense of place through subtle changes and variations of landscape palettes and components.



Open Space Typology

The open space typologies reflect the broad objectives for the project. Each of the spaces will specifically deliver a type of landscape that is intensively informed by market research into the community's needs, aspirations and values. This will result in fine tuning of the designs to suit the specific user groups and provide cultural diversity.

The community will be directly involved in the design of the spaces through focus groups and visioning. Over time the open spaces will evolve by community driven art programs, community embellishments and adaptation.



TOD PLAZA

KEY POINTS

/ First and last impression of Alkimos Beach for commuters at a daily or near daily basis
/ Located with transit station offering clear signage to direct busy people
/ Integrated art and water elements as potential features
/ Provides safe protected place for crowds as well as informal shaded seating areas for meeting / gathering – large scale canopy trees with minimal ground level planting
/ Large shade structures may be a feature along with distinct pavement design and furniture detailing

COASTAL

/ N/A

NEIGHBOURHOOD

/ N/A

URBAN

/ A level of customisation with high quality craftsmanship - robust materials selection like hardwood, steel and stone and minimal ground level planting
/ Some finishes to be textured, juxtaposed with selective use of smooth contemporary detailing. Working with urban colour palette materials, plantings and form urban language
/ Spectacle opportunities: water, lighting, views up to framed sky, colour, movement and vibrancy
/ Microclimate enhancements using plant and water

PLAZA / MARKET SQUARE

KEY POINTS

/ A large and formal open space available for civic/community and commercial activities with integrated art and water features as potential features

/ Well defined space with active building frontages - managed micro climates using canopy trees

/ Flexible use of space for civic function eg. markets and festivals

COASTAL

/ N/A

NEIGHBOURHOOD

/ Shade structures, trees, raised garden beds and water elements to reduce heat gain

/ Local sourcing material to create sense of place, celebrate precinct identity through colour, detail and artwork

/ Work with neighbourhood colour, material and planting palettes to form neighbourhood language

URBAN

/ Evocative lighting to encourage night use

/ Maximum 15% introduced understorey and 50% introduced tree species

/ Spectacle opportunities: shade structures, colour, water, lighting, shade, play and sound scapes

/ Work with urban colour, material and planting palettes to form urban language

MALL

KEY POINTS

/ Well defined space with active building frontages - managed micro climates using canopy trees

/ Flexible use of space for civic function eg. markets and festivals

COASTAL

/ N/A

NEIGHBOURHOOD

/ N/A

URBAN

/ Continuous or sectional shade structure in contemporary form with vertical planting opportunities

/ Multiple lighting dimension to emphasise spatial scale, eg. lighting strip in paving, catenary lighting across nodes and feature lighting on landscape objects

/ Work with urban colour, material and planting palettes to form urban language

ENTRY PARK

KEY POINTS

/ A presentation landscape, designed to address vehicular views at entries to site off Marmion Ave, the freeway or other major Alkimos Beach gateways are usually 500m2 - 1000m2.

/ It can also be a threshold between two precincts to build a sense of arrival / departure, can reveal site narratives and precincts identity

/ Can be merged with local park to become a destination space or landmark

COASTAL

/ Informal and relaxed gateway strategy - played down and mostly soft materials.

/ Predominant landform creation and planting arrangement to express coastal identity

/ Interactive artwork placement using natural or recycled materials and visual.

/ Work with coastal colour, material and planting palettes to form coastal language.

NEIGHBOURHOOD

/ Semi-informal gateway strategy - celebrated but not over-done with too much structure

/ Can be used to create subtle distinctions between precincts expressed through colour / form / species and form language

/ Work with neighbourhood colour, material and planting palettes to form neighbourhood language

URBAN

/ Formal and larger scale strategy - more impact and memorable transition space

/ Combination of hard landscape features and planting arrangement to celebrate arrival within a large scale and formal language

/ Featuring integrated artworks in a contemporary colourful style whilst expressing urban ridge-line locations

/ Work with urban colour, material and planting palettes to form urban language

Open Space Typology contd.

LOCAL PARK

KEY POINTS

/ A medium sized intimate park ideally located central to precincts providing immediate open space within 400m. Can be associated with a 'hill or hollow' or be urbanised if in town centre. May have private or public built form directly addressing the park. The local parks can range in size from small usually around 1000m2 - 5000m2 and larger from 1 hectare to 2 hectares

/ Comprised of native vegetation beds, lawn and tree zones to enhance views in and out and often incorporating stormwater retention requirements - includes amenities such as shelters, play spaces, small kick-about area, paths and sometimes barbeques

COASTAL

/ 100% indigenous tree and understorey species applied in organic, informal patterns; minimized use of lawn area

/ Natural edges to blend into surrounding regional reserves

/ Pathways arranged to emphasize 'hill' or 'hollow' experiences and playgrounds to be sensitively incorporated and encourage nature based play

/ With coastal colour, material and planting palettes to form coastal language

NEIGHBOURHOOD

/ Park spatially defined by tree belts, lawn and tree zones

/ Balanced lawn areas to be provided where appropriate to provide gathering places or to maintain view-lines and ocean vistas

/ Spatial and planting arrangement should maintain or enhance the experience of the dune landform with 'hill' or 'hollow' landscape zones.

/ Work with neighbourhood colour, material and planting palettes to form neighbourhood language

URBAN

/ Importance to include dense planting area to provide urban oasis, shade canopy and contemplation spaces

/ Functional area to accommodate multiple and flexible uses

/ Play spaces to utilise more exotic and refined materials

/ Work with urban colour, material and planting palettes to form urban language

LINEAR PARK

KEY POINTS

/ A medium sized intimate park ideally located central to precincts providing immediate open space within 400m. Can be associated with a 'hill or hollow' or be urbanised if in town centre. May have private or public built form directly addressing the park

/ Comprised of native vegetation beds, lawn and tree zones to enhance views in and out and often incorporating stormwater retention requirements - includes amenities such as shelters, play spaces, exercise station areas, rest points, paths and sometimes barbeques

COASTAL

/ Path networks to meander through dunal topographic forms

/ Identify appropriate species to use to maintain ecological value as links between dunal reserves

/ Natural and informal pattern of planting

/ Work with coastal colour, material and planting palettes to form coastal language

NEIGHBOURHOOD

/ Sections of straight paths used in combination with curved to form a hybrid form language

/ Well-lit route to encourage night use

/ Low understorey planting to allow view-lines and complied with CPTED

/ Work with neighbourhood colour, material and planting palettes to form neighbourhood language

URBAN

/ Path networks to be predominantly geometric with occasional organic forms

/ Avenue tree planting with formal understorey to emphasize the linear spatial arrangement

/ Arrange street furniture in a similar manner to strengthen the urban character and feel

/ Work with urban colour, material and planting palettes to form urban language

DISTRICT PARK

KEY POINTS

/ A large and natural-looking green open space with high proportion of lawn to meet active and passive recreation needs

/ Often incorporating stormwater retention requirements

/ The size varies from 2 hectares to 5 hectares and usually associated with a school sites and can include ovals, paths, playgrounds, kick-about spaces, conservation areas, hydro zoned planting areas, shelter belts and community facilities (toilets, change room, shelters and barbeques etc).

/ May be located in on a hill or in a hollow or combination of both

COASTAL

/ N/A

NEIGHBOURHOOD

/ Important to create open park edges to encourage use and increase passive surveillance

/ Certain area where accommodating urban stormwater drainage should integrate with best WSUD principle to satisfy other uses beyond drainage

/ Work with neighbourhood colour, material and planting palettes to form neighbourhood language

URBAN

/ Formal and geometric terrace seating to oval at certain sections with possible flood lights to accommodate more intensive night use of facilities

/ Potential incorporation of urban uses including skate facilities, tennis courts etc

/ Formal entrance to park to address access from City Centre. Linear park to combine with the approaching landscape

/ Work with urban colour, material and planting palettes to form urban language

BUFFER LANDSCAPE

KEY POINTS

/ Landscape area along infrastructure such as North Rail Corridor, Mitchell freeway extension and Marmion Avenue. In some cases steeply battered and stabilised embankments

/ Lineal pedestrian connections provided where possible amongst screening vegetation

/ Sound walls, or earth mounding/change of grade may be incorporated where necessary.

COASTAL

/ N/A

NEIGHBOURHOOD

/ Mass planting to soften amenity wall / batter structures

/ Local and hardy screening species preferred

URBAN

/ Mass planting to soften amenity wall / batter structures

/ Local and hardy screening species preferred

DUNE CONSERVATION PARK

(Green frame indicates an in-principle consistent treatment along entire parabolic dune)

KEY POINTS

/ Landscape space located along parabolic dune system with conservation and recreation connectivity as its primary purpose - minimal tree planting and no turf

/ Landscape areas within the site to celebrate dune formation, vegetation and habitat

/ Path network to run along contours to establish link from City Centre to beach – boardwalks, art and interpretive signage positioned in key locations

/ Lookouts and shelters at specific high points to reveal breath-taking ocean and surrounding views

COASTAL

/ Informal and relaxed entry designs to path network through dunal reserve

/ Elevated pathway / boardwalk where needed to best preserve dunal system

/ Work with coastal colour, materials and planting palettes to form coastal language

/ Fencing and controlled access for sensitive areas

/ Forward works stabilisation + restoration

NEIGHBOURHOOD

/ Semi-formal entrances into dunal reserve

/ Elevated pathway / boardwalk where needed to best preserve dunal system

/ Work with coastal colour, material and planting palettes to form coastal language

/ Fencing and controlled access for sensitive areas

/ Forward works stabilisation + restoration

URBAN

/ Urbanised entrance into dunal park

/ Elevated pathway / boardwalk where needed to best preserve dunal system

/ Work with coastal colour, material and planting palettes to form coastal language

/ Fencing and controlled access for sensitive areas

/ Forward works stabilisation + restoration

/ Stylised and resilient rehabilitation + management

Streetscapes & Entries

The mix of streetscape typologies throughout Alkimos will range between main streets, integrator roads, neighbourhood connectors, local access streets, laneways and cul-de-sacs.

All landscape elements shall be considered to create a streetscape strategy;

/ street tree species shall be at least 50% native
/ varied paving colours, textures and treatments
/ foster “walkablility”
/ signage, landmarks and wayfinding (artwork)
/ precint thresholds
/ shade structures and furniture (artwork)
/ variety of artistic and cultural amenity (artwork)
/ car parking
/ kerbs (simple and varied options)
/ safe crossings
/ drainage (innovative and varied options)

As much as possible, landscape design in every street shall strive to be a linear park, with wide footpaths and other pedestrian amenities, including landscaping, shade trees, street furniture, bike lanes, well-planned connections, attractive buildings, and leading to other destinations.

Where possible allow planting strips, located between the kerb and sidewalk, help create shaded streets, promote walking and slow traffic down.

It is intended that Alkimos Beach will build on the principles of “place-making” to make precincts and precints more distinctive and recognisable . Through introducing elements of intrigue and interest it will alert drivers to the specific environment of their surroundings.

Main Street

Indicative urban streetscape - main street



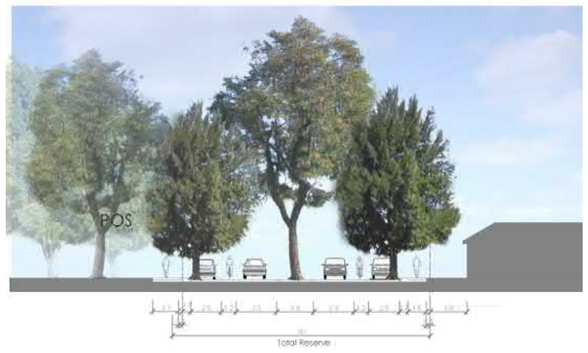

INTEGRATOR ROAD

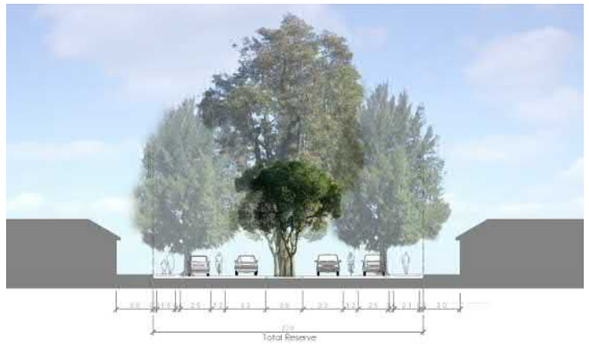
NEIGHBOURHOOD CONNECTOR A

NEIGHBOURHOOD CONNECTOR B

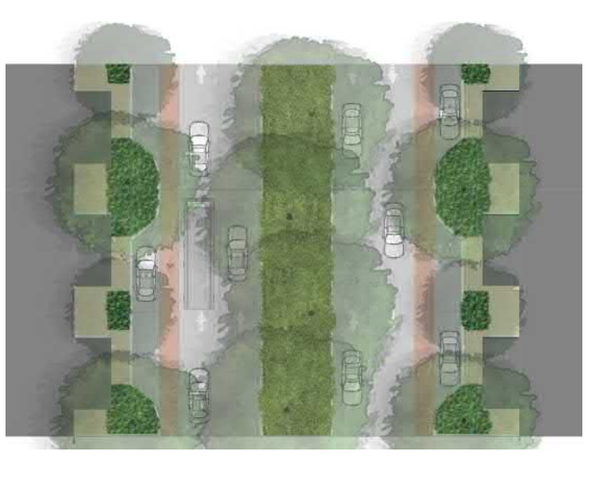
LOCAL ACCESS STREET

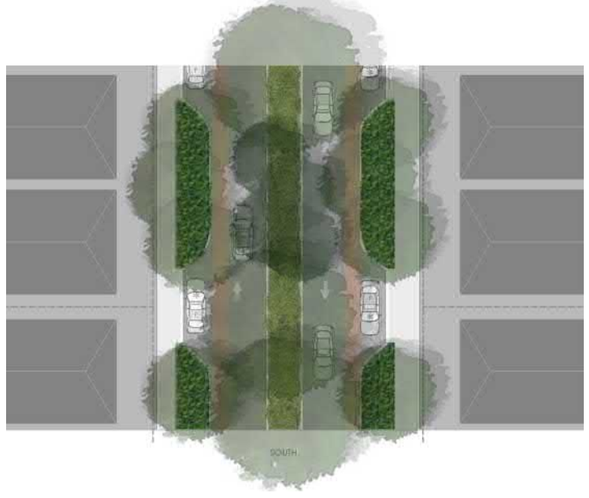
Indicative landscape plans

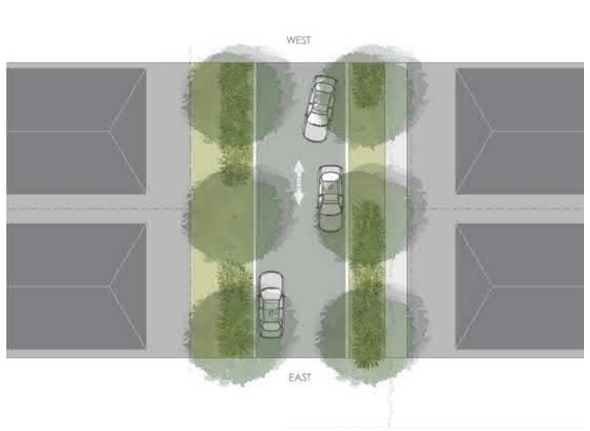




Cross -sections from Alkimos Team - Thoroughfare plan








INDICATIVE MAIN STREET IN MORE URBAN AREAS


LANDSCAPE PLANTING + TREATMENT TO BE A WAY FINDING TOOL ALONG INTEGRATORS AND NEIGHBOURHOOD CONNECTORS


LOCAL ACCESS STREETS VARIED IN WIDTH + LANEWAY TREATMENTS TO BE AS GREEN AS POSSIBLE

Natural Environment

The natural environment of Alkimos Beach is one of its biggest assets.

It is imperative to respect this natural landscape and minimise impacts on valuable areas / ecosystems of the site that are unaffected by infrastructure and development lots. The adjacent diagram is a broad representation of the varied ecosystems within the site. The character of these ecosystems will be used to inform the design response across the site.

Where dunes of significance are to form part of the open space system at Alkimos there will be 3 key design responses;

/ Retain – high value undisturbed dunes are to remain in their existing condition.

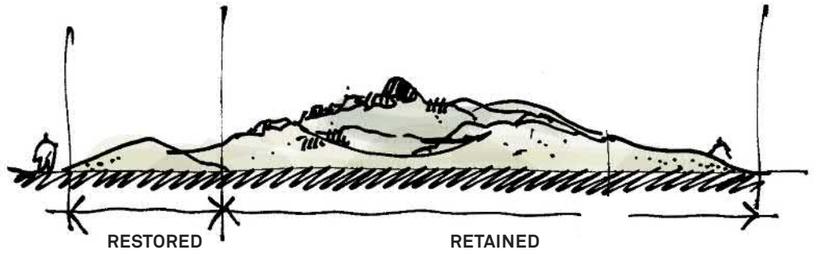
/ Restore – disturbed parts of retained dunes are to be restored and revegetated in keeping with their natural character.

/ Replicate – parts of linear dunes that are removed due to the proximity of adjacent lots, roads etc yet are to remain as linear open space corridors are to be designed to reflect the character of what once existed. The landscape treatments shall be applied in a more stylized manner and have the complicity of height differences whilst introduces areas and elements of amenity such as pockets of turf, furniture and shelters.

It will be important to balance the human desire to explore these retained landscapes with the pressures that the increased residential densities will bring. A sliding scale of access control will need to be implemented based on the level of fragility and ecological value attributed to an area in order to provide a balance between desire for access and the need for protection.

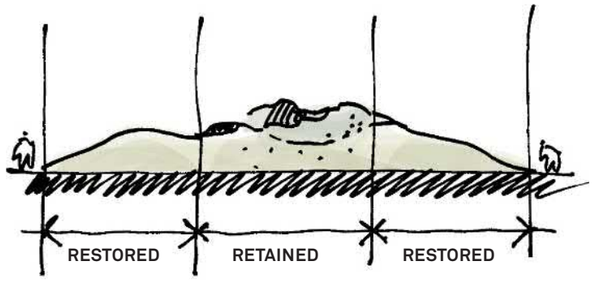
EXISTING PARABOLIC DUNE

/ Stage 1 disturbance restored to northern edge



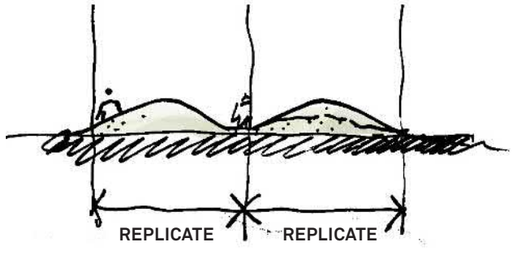
EXISTING PARABOLIC DUNE

/ Future development disturbance restored to southern edge



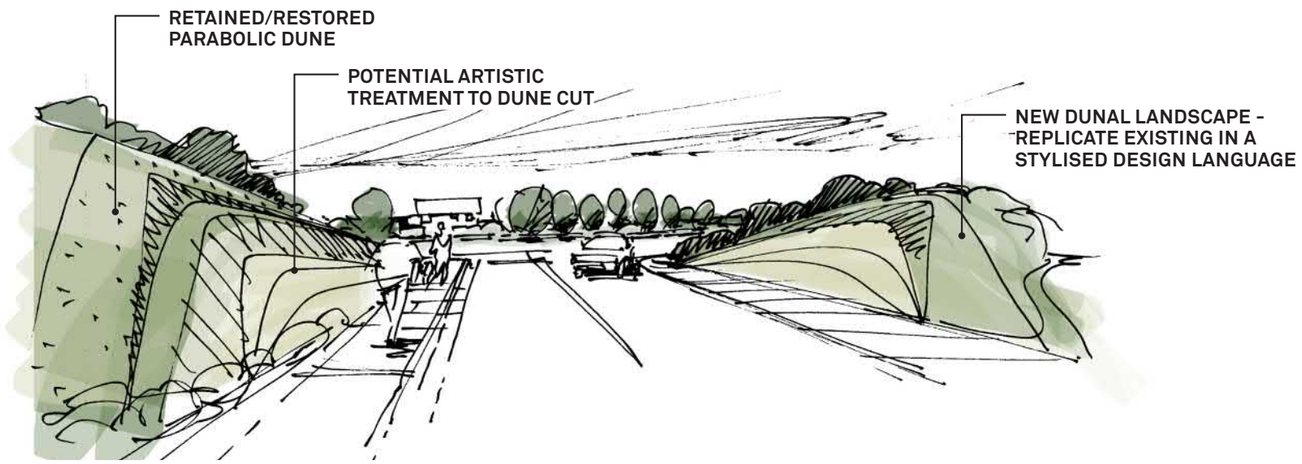
NEW STYLISED DUNE RESPONSE

/ Replicate the character of natural dunes where existing landform and planting is completely disturbed



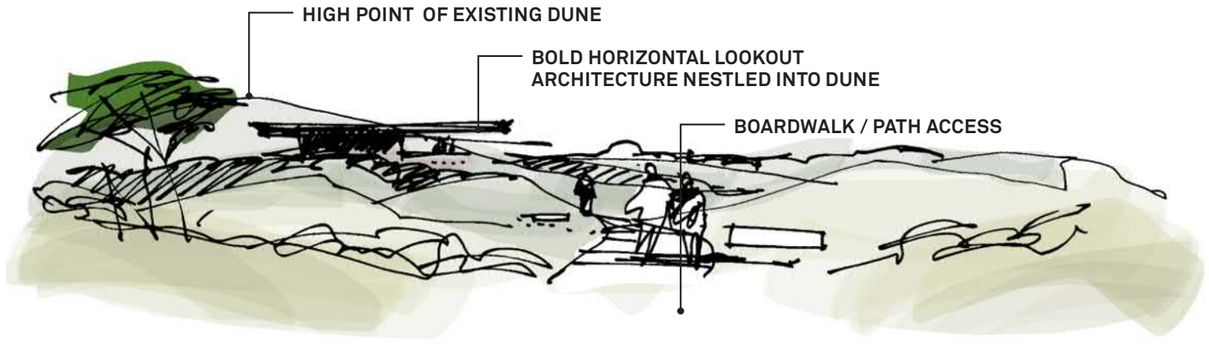
CHARACTER IMAGERY OF COASTAL LANDSCAPE TREATMENTS

POTENTIAL TREATMENT
OF PRECINCT GATEWAY
THROUGH A DUNE



EXISTING EXPERIENCE
AT TOP OF A DUNE

PROPOSED TREATMENT
OF LOOKOUT NEAR
TOP OF A DUNE



09

CONSISTENCY OF DESIGN COMPONENTS

The planning of Alkimos Beach divides the site into three precincts - South, Central and City Centre. Our approach to the landscape design will ensure a consistency of components to the site and parabolic dune regardless of whether the component is in South, Central or City Centre.

This consistency of landscape components will also extend from the macro scale to micro scale. At the micro scale the application of fine grain details can add points of difference. The points of difference will be linked to;

/ landscape character types
/ precincts
/ streetscapes

A landscape system has been established to help guide decisions on;

/ Tree planting
/ Shrub planting
/ Hardscape materials - type, colour + aggregate etc
/ Furniture's - bench, picnic set, bin, barbeque + bollard
/ Bike parking and intersection grab rails
/ Walls - feature or retaining
/ Structures/Shelters/Bus Shelters
/ Lookouts
/ Signage; directional and informational
/ Artwork
/ Playground
/ Fencing - corner lots, P.O.S, laneways, + conservation zones
/ Letter boxes
/ Lighting
/ Kerbs
/ Driveways
/ Edge conditions to planting areas
/ Manhole covers.

SITE WIDE

PARABOLIC DUNE

LANDSCAPE CHARACTER TYPES

PRECINCT WIDE

STREETSCAPE WIDE

Level of Design Consistency

ALKIMOS BEACH PROJECT

	LANDSCAPE COMPONENTS	SITE WIDE	PARABOLIC DUNE	LANDSCAPE CHARACTER TYPES	PRECINCT WIDE	STREETSCAPES WIDE
Planting	Tree planting			■	■	■
	Shrub + groundcover planting		■	■	■	■
Hardscape	Footpaths - grey concrete to streetscape + DUP + hike bike	■	■			
	Feature paving - coloured concrete with aggregate + stone			■	■	
	Trails or secondary paths - crushed limestone + concrete	■		■		
	Boardwalk - natural + recycled timber			■	■	
	Feature walls + entries			■	■	
	Retaining walls (defined by place setting + function)		■	■		
Furniture	Structure/Shelters	■		■		
	Lookouts	■	■			
	Bench (without back + integrated)			■	■	
	Seat (with back + integrated)			■	■	
	Picnic table			■	■	
	Bin			■	■	
	Barbeque + Hot plate			■		
	Bike parking + racks	■		■		
	Bollards	■		■		
	Drinking fountains	■		■		
Signage	Signage (wayfinding + directional)	■	■			■
	Signage (interpretive)			■		
Lighting	Street Lighting (Western Power + CoW)	■				
	POS Lighting (CoW)	■	■	■		
Other	Artwork		■	■		
	Feature fencing (POS, park frontage, and dune)			■	■	
	Letter boxes (community guidance)	■			■	
	Driveways				■	
	Kerbs			■		■
	Threshold treatments - interlocker colour pavers			■	■	
	Manhole covers			■		
	Guard rail (at DUP crossing points)	■	■		■	
	Vehicular barrier - in civil scope to be selected with LA	■				

family of components

■ Primary definition (overarching style)

■ Secondary definition (local influences on overarching style)

NOTE: this table excludes the private domain landscape items. Please refer the Private Garden Domain Manual or Guidelines.

Moving Forward

This document provides the over all guidance for the landscape design process for the Alkimos Beach project.

It is intended to review this document periodically while it is used to test and measure the landscape design development as the project progresses through the landscape master planning, the detailed design and delivery stages.

1

VISION

- Follow the guiding principles that set the framework for Alkimos site
- Deliver all stages of the project in balance with the environment and compliance with the local authorities.
- Ensure continuity of place and design detail across Precinct 1, -South Alkimos, Central Alkimos and the City Centre and specifically allow for multiple construction time frames.

2

STRUCTURE

- Determine and set the structure, form of the built areas and open space framework of development of the structure planning stage.

3

MASTERPLAN

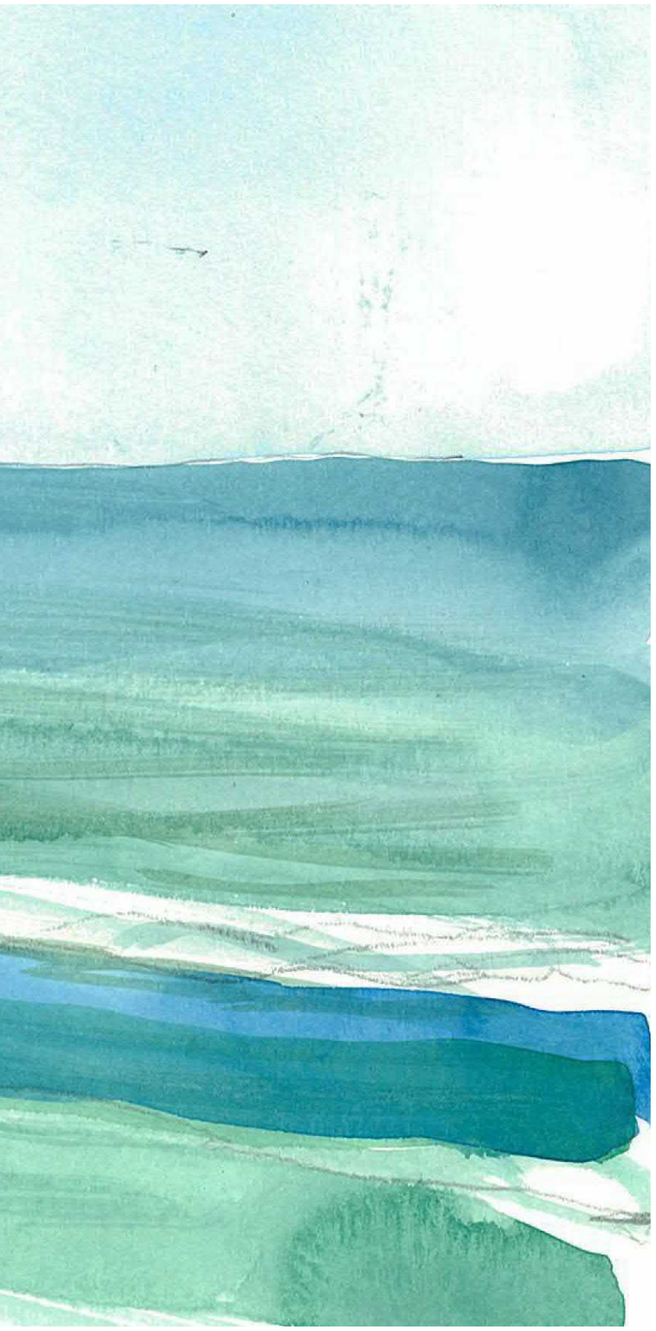
/ Develop a comprehensive and meaningful Landscape Strategy for South Alkimos, Central and the City Centre.

4

DESIGN & DELIVERY

/ Deliver successfully over the life span of the project by adhering to the set of principles and guidelines.

/ Learn from lessons and past experiences; 'Lessons Learnt'.



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SOUTH ALKIMOS

LANDSCAPE + PUBLIC REALM MASTER PLAN

REV B - 8TH OCTOBER 2012

Project	Alkimos Landscape
Document No.	60238806 -South Alkimos Landscape and Public Realm Master Plan PD-AU-GL-PER
Report Title	South Alkimos Landscape and Public Realm Master Plan
Author(s)	Shohan Kain + Damien Pericles
Reviewed by	Josh Hinwood and Alistair Leighton
Approved by	Faron Mengler
Date	08/10/2014
File Location	P:\60238806 - Alkimos Landscape\6 Draft Docs\6.1 Reports\Phase 2 - South Alkimos LMP\South Alkimos LMP_V5 Folder

Document to be printed at A3 landscape double sided with binding to short side

REPORT NAME	ISSUE FOR	REVISION	DATE
South Alkimos LandscapeandPublic Realm Master Plan	Client Comment	0	07/06/2012
South Alkimos Landscape and Public Realm Master Plan	Final	A	13/09/2012
South Alkimos Landscape and Public Realm Master Plan	Final	B	08/10/2012

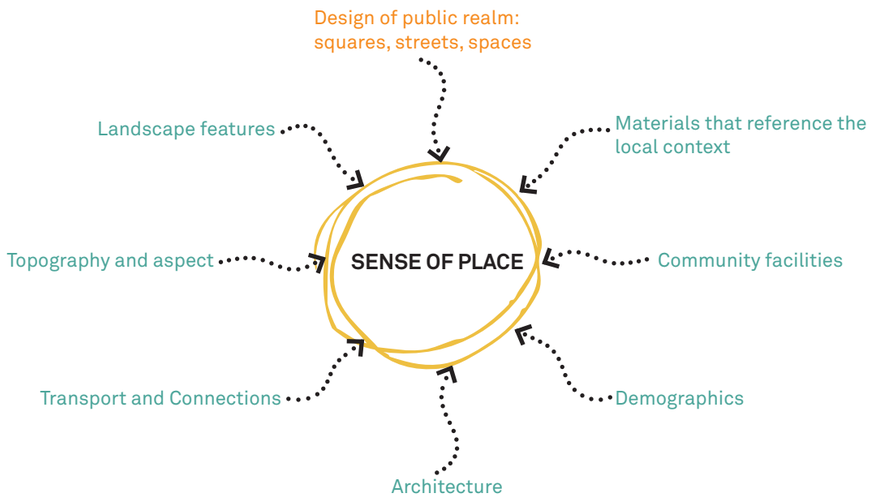
01

INTRODUCTION + CONTEXT

Introduction

The character and identity of the new South Alkimos environment will be determined to a significant extent by the designed response to the existing landscape. The design team for the project has worked from the outset to define a bold but sensitive response to the unique characteristics of the location. Various steps have been taken to define a robust and workable framework for the development which will establish an appropriate balance between the sensitivities of the existing landscape and the functional demands of a significant new community. The landscape and public realm master plan (LMP) is a platform for the successful delivery of this balance, which ultimately seeks to celebrate and amplify the exceptional site characteristics as the unique setting for a new landmark community.

The new community of South Alkimos will have a strong and distinctive local character and sense of place. This will be created by a combination of factors both proposed and existing. The public realm will not create a sense of place by itself, but together with the elements below will make an important contribution to the character and cohesiveness of Alkimos Beach:



Purpose

This LMP is part of the suite of documents used to define character and the designed appearance for the new South Alkimos landscape environment. It should be read in conjunction with the higher level documents:

/ ‘Alkimos Landscape Vision + Design Principles‘ and
/ ‘Alkimos Design Codes‘

The LMP represents a step in the design and development process and has a number of specific functions, which are summarised as follows:

/ It is a concise summary of the intended character and form of the landscape, streetscape and public open spaces of the new development. This document explains how the special characteristics of the existing landscape and topography are intended to be integrated into the establishment of a compelling new residential development with a special site-specific character.
/ It translates the main points of the established site-wide Alkimos Beach vision & principles document into a site-specific landscape framework for South Alkimos. This explains the most important principles and relates them to the existing and proposed physical form of the site as a mechanism for underpinning the delivery of the adopted vision.
/ It should guide further development of design intentions for South Alkimos in the form of design codes and/or design proposals.
/ The master plan illustrates an aspiration. This document captures a series of intentions at a point in time within an iterative process. It is intended that this LMP should be capable of further development and evolution as other defined layers of the development – including traffic & transport, residential sub-divisions, civil engineering, environment and ecology – are explored, moulded and shaped relative to each other in order to achieve the best fit for each element relative to the established vision.

This document has been prepared as part of the design development process. It is intended as a design document for internal use by the team and has not been prepared as a public document.

Process

The diagrammatic summary below provides a concise overview of the organisational framework for the staged development of design proposals for the landscape and public realm as part of the overall establishment of the new Alkimos Beach community. The process diagram highlights the position of the South Alkimos LMP as the linking stage between high level strategic definition of intent and more detailed design responses to particular places. The LMP provides guidance related to the design drivers in response to the site-specific variations in character and design intent between the three districts of South Alkimos City and Central Alkimos.

VISION + PRINCIPLES

/ High level
/ Whole of alkimos
/ Including responses to planning context

STRUCTURE

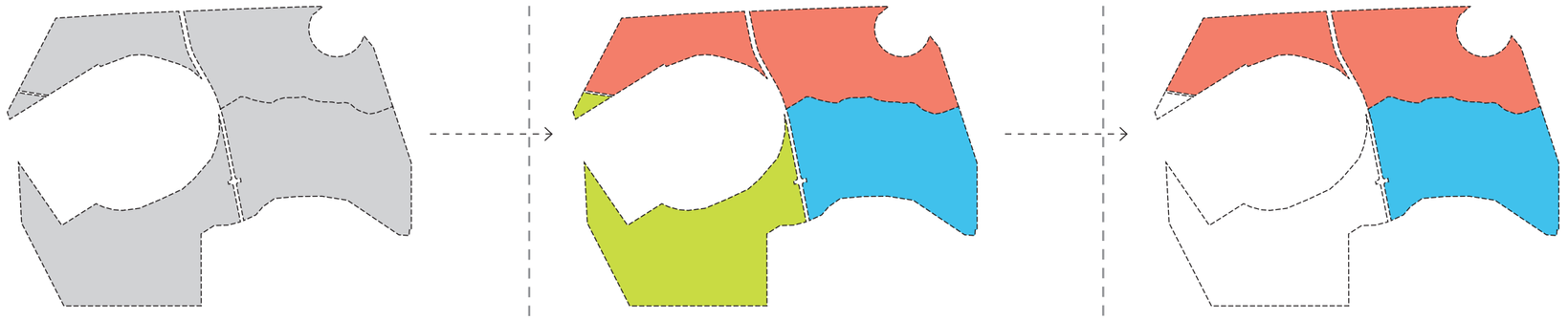
/ Function + form
/ Whole of alkimos
/ Links + connections to guide development

MASTER PLAN

/ Character in response to application of vision + principles and structure
/ Site specific design responses to guide design + delivery

DESIGN + DELIVERY

/ Design in response to landscape + public realm master plans
/ Definition of designed spaces + places in line with design guidance
/ Village identity resolves as part of whole Alkimos character



/ Landscape Vision + Design Principles

/ Commercial Assessment

/ South Alkimos Local Structure Plan
/ City Centre Local Structure Plan
/ Central Alkimos Local Structure Plan

1. Pre-devlopment Approval = Landscape Structure

/ City Centre Landscape Master Plan
/ Central Alkimos Landscape Master Plan

2. Post Development Approval = Illustrative Landscape Master Plan

/ South Alkimos Landscape Master Plan

/ Design proposals for individual villages
Ongoing

Review + Testing against V+P and Strategic Framework etc (KPIs)

South Alkimos Beach Location & Background

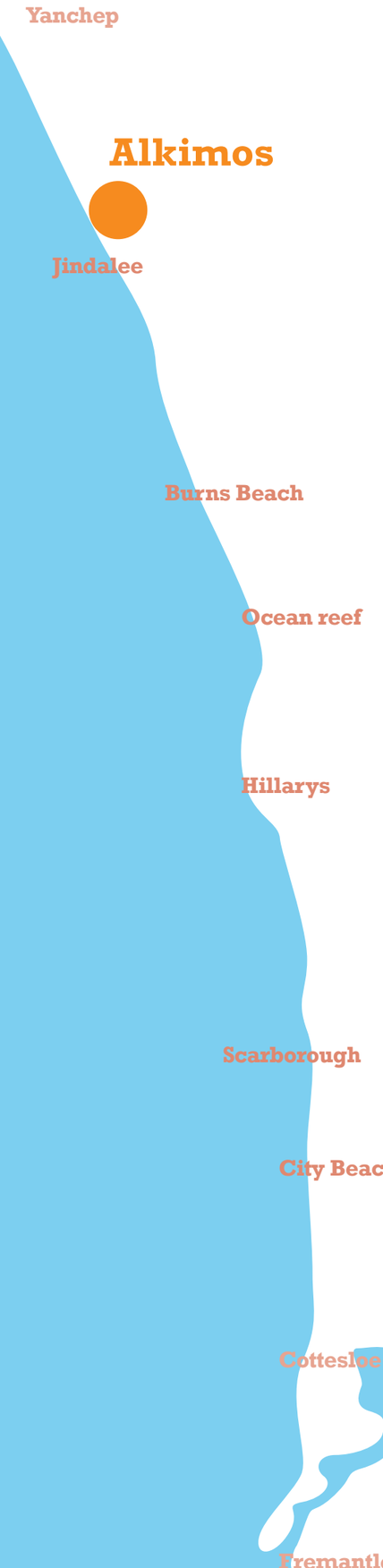
Alkimos Beach is a new master planned community located in the north-western sub-region of the Perth metropolitan area, approximately 40 kilometres (30mins drive) north-west of the Perth CBD.

Alkimos Beach, with the planned extension of the Clarkson rail link, Mitchell Freeway and new City Centre will become a major urban development within the main northern growth corridor of Western Australia.

South Alkimos Beach or Lot 9002 is one of three precincts within the Alkimos Beach Project. The two other precincts are known as Central (across the north of the waste water treatment plan) and City Centre (site of the future Regional Town Centre to the east of Marmion Ave). An additional site known as the Coastal Node located on Lot 9001 is currently under planning and design consideration.

South Alkimos is 224 hectares (ha) and is bounded by the Water Corporation waste-water treatment plant to the north, Marmion Avenue to the east, urban land to the south and Foreshore Reserve land to the west.

Refer diagram:



ALKIMOS BEACH SITE PLAN -

Guidance Documents

The LMP is influenced by guidance contained in several documents and references. Key guidance and its sources is summarised on this page.

ALKIMOS BEACH DESIGN CODES

Guiding Principles listed in the Alkimos Beach Design Codes that are relevant to landscape architecture are arranged around the following themes:

/ A Green Place

Provide vegetated backdrops utilising the landform of the area and introduce larger trees to provide for shade and amenity.

/ A Unique Place

Use the attributes of views, topography, vegetation and design treatments to achieve this goal.

/ A Safe Place

Use Crime Prevention Through Environmental Design (CPTED) and other techniques to enhance community safety.

Practice 'safe planting' and reduce risks from natural hazards.

/ An Integrated Place

Integrate planning, urban design, landscape and engineering goals in decision making and implementation.

/ An Active Public Realm

Promote a healthy and diverse community by providing recreational opportunities.

Provide a diverse range of active and passive recreation opportunities.

/ A Responsive Place

Use site responsive solutions in road, lot, building and park design.

/ A Place of Mobility and Connectivity

Legible routes (and functional) for pedestrians, cyclists, cars and public transport.

/ A Place of Partnerships

Achieve results by building rapport and trust between the City of Wanneroo, developers and the community.

/ A Place of Community

Create a place where residents have a sense of place and are proud of where they live.

NATURAL HERITAGE & ENVIRONMENT CONNECTION STRATEGY

The NHEC strategy is formed as a set of responses to the project objectives. There are two objectives that are specific to the NHEC Strategy. They are:

/ Retain a greater diversity in natural landform during urban development; and

/ Build on ecological outcomes at the precinct and site scale during urban development

The Eco-scaping Element of the NHEC Strategy includes the following desirable outcomes:

/ Public open space will be designed to merge into the landscape and areas not required for play fields and gathering will be designed to restore the sense of harmony with nature.

/ Streets and front setbacks will be planted to introduce birdlife, colour the smells of the region.

/ The choice of landscape and urban detailing will ensure the urban infrastructure of roads, streetlights etc. are an integrated part of the setting.

/ Urban Water management ... initiatives will restore the experience of micro landscape with swales and berms appearing wind-blown and water carved.

/ Node of urban development and style manuals will reinforce the delivery of an architecture that is natural materials while being humane and responsive to community

/ Detail design ... that allows the slope to generate unique design responses.

MEASUREMENTS OF SUCCESS

Preliminary Key Performance Indicators (KPI) for the landscape were compiled. These were based on project-wide KPI listed within the Alkimos Strategic Overview Document and also the Alkimos Sustainability Strategy. Preliminary KPIs for the landscape will be refined at the design and delivery stage but are listed here as influences to this LMP:

/ Use landscape/landform to shelter pedestrians / climate responsive landscape design

/ Walkability - provide abundant shade to pathways and cycleways

/ Establish landscape as a 'green heart' of each precinct

/ POS and street plant species to address air cooling/ heat island and carbon sequestration benefits

/ Establish permanent planting trials in POS – species monitoring

/ Xeriscaping / hydrozoning / soil amendments to reduce water use

/ Landscape integration of Water Sensitive Urban Design (WSUD) e.g. tree pits, swales etc.

/ Use dense groupings of native trees / plantings along pathways – pleural not single specimens

/ > 85% endemic species in public realm > 50% native street trees

/ Use energy efficient POS lighting

/ Design for ecological connectivity with understory and groundcover species capable of supporting wildlife

/ Respond to natural coast/horizon as an anchor to the landscape

/ Establish a landscape framework – 'bold moves' to structure plan

/ Provide hierarchy of typology & character of landscapes from Regional Open Space (ROS) to urban pocket park

/ Identify nodal points in POS and provide with shelters

/ Hard landscape/dependable structures to define urban street edges

/ Landscape to provide access to a variety of safe dunal and natural experiences

/ Identify and celebrate special landscape areas within Alkimos

/ Reuse suitable site materials in the built landscape – 'reveals' (rocks, woody debris). Incorporate recycled materials

/ Use natural environment to create precinct gateways and thresholds

/ Landscape colour palette inspired by nature

/ Act to maximize incorporation of retained vegetation in POS

/ Use planted embankments in preference to terraced landscapes

/ Design landscape paths and walls to blend in with the local palette and vernacular

/ Planting forms and species selected to be inspired by natural patterns – not mass and monoculture

/ Design to address longevity and the effects of time on landscape

/ Meet all City of Wanneroo landscape handover requirements

REFERENCES

/ Alkimos Beach Design Codes Edition 1 – April 2012

/ Natural Heritage and Ecological Connection Strategy

/ Alkimos Landscape Vision and Design Principles Rev D - September 28th 2012

/ Alkimos Strategic Overview Document July 2011-June 2012

02

EXISTING LANDSCAPE

Existing Site

This section provides a concise overview of the primary characteristics of the South Alkimos landscape. It considers the landscape in various thematic layers that can be used to unpick the ways in which the topography, geology, flora & fauna and recent patterns of use have shaped and defined the character of the existing landscape.

Taking these layers apart and then reassembling them enables the symbiotic nature of some of these characteristics to be better understood as a means of shaping site-specific design responses. For example, the topography of the site is a significant feature. When combined with the local climate this topography is notable for the ways in which specific flora and habitat groupings have adapted to either sheltered or exposed areas of the landscape.

This understanding informs the design response in terms of retained landscape within and adjacent to the site and the character and function of the design intent. The following characteristics are presented:

/ Pre disturbance
/ Disturbance
/ Vegetation, condition and habitat
/ Geology
/ Climate
/ Topography
/ Existing site views

PRE DISTURBANCE

The aerial is taken in 2006 and shows limited 4WD access to the area. Important elements of the existing landscape are the parabolic dune formation and the covering of coastal heath, its noted to have very limited tree cover. Both form a nurturing framework for the future development.

--- **SITE BOUNDARY**

DISTURBANCE

As shown in the aerial photo a large proportion of the southern section of Alkimos South has been disturbed with the location of spoil removed as a process of construction of the waste-water treatment plant to the north.

A percentage of this spoil is set to be retained and utilised in the future design however an allocation is also reserved for Lot 9001.

Haul roads created during construction of the treatment plant and external to the Alkimos South site will be revegetated.

--- SITE BOUNDARY

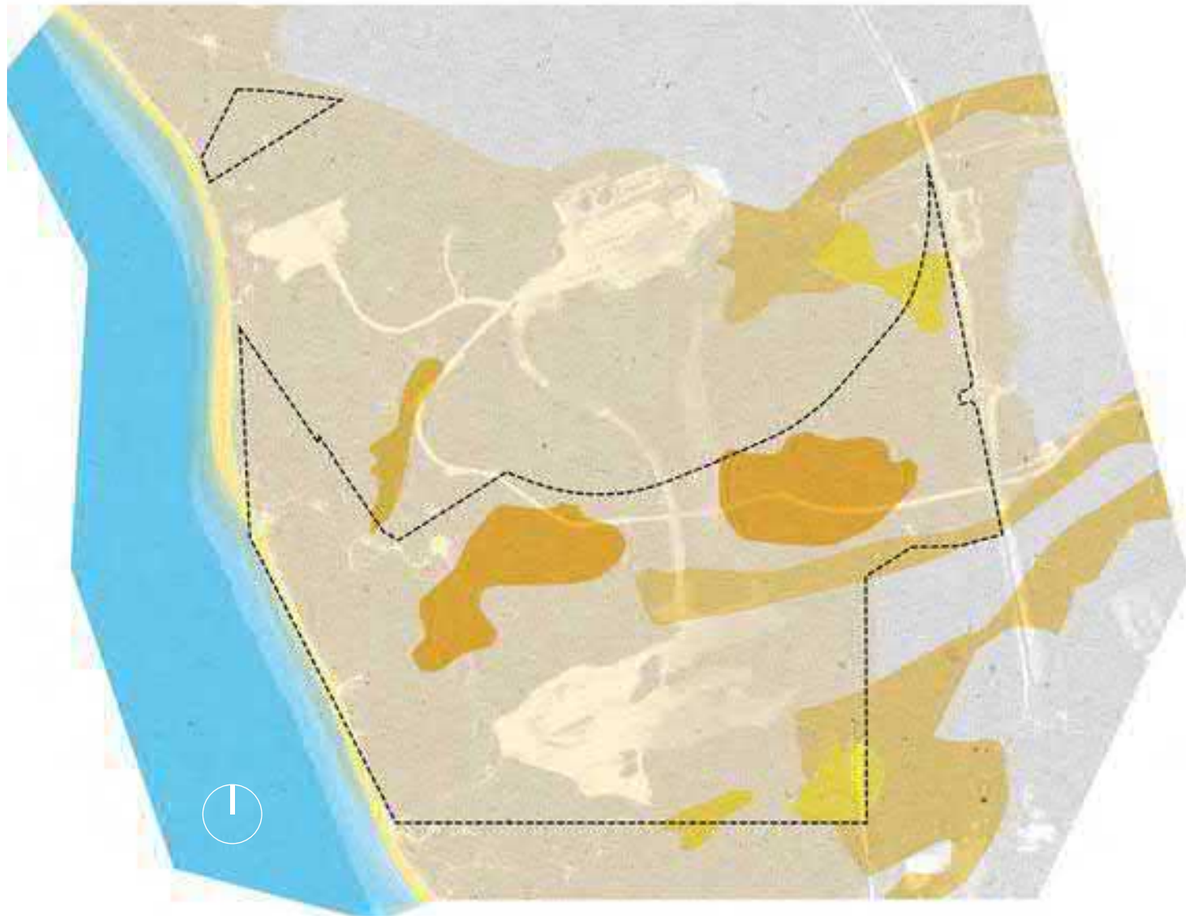
VEGETATION, CONDITION AND HABITAT

The site supports remnant dune vegetation of the Quindalup Complex dominated by Melaleuca systena and Lomandra maritima. The only existing trees on the site are scattered Tuart (Eucalyptus gomphacephala) located in hollows sheltered from the prevailing winds. Other remnant plant species that may be suitable for transplanting include zamia palms and grass trees.

The most significant habitats within the site are those of the Graceful Sun Moth (Synemon gratiosa) and Carnaby's Black Cockatoo (Calyptorhynchus latirostris) – both listed as Endangered under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). To ensure protection of these species a combination of onsite conservation, reinstatement of significant native species within landscaping and off-site offsets is proposed.

- EXISTING TREES
- GRACEFUL SUNMOTH HABITAT
- EXCELLENT
- VERY GOOD - GOOD
- GOOD
- DEGRADED

GEOLOGY



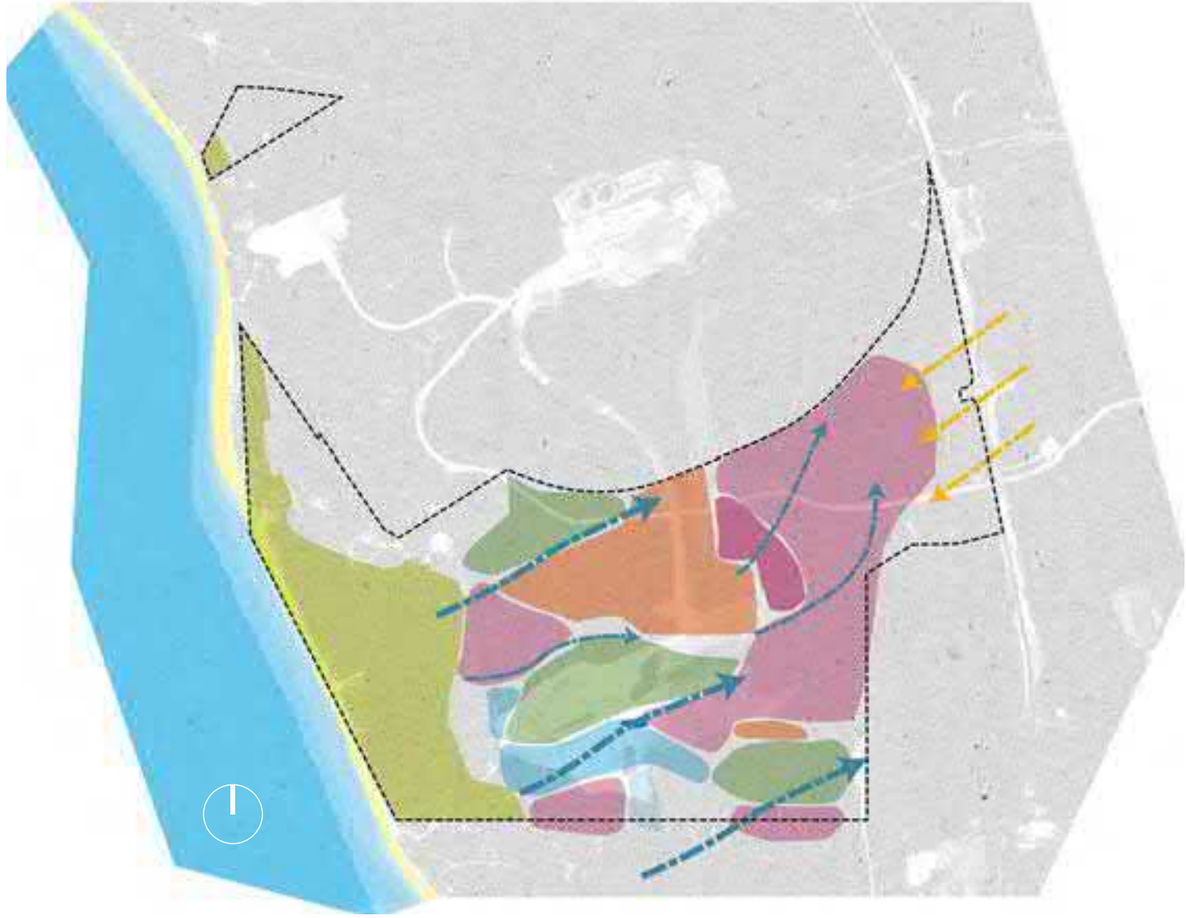
Geology and soil at the site is mainly sand dune landform with younger-aged dunes close to the coast and older, more stable dunes located further inland. The dunes are comprised of fine to medium grained, light brown to white, calcareous sand known locally as Quindalup Sand.

Rock is inferred to be beneath parts of the site as cemented limestone formations along ridge lines within the Quindalup dunes.

Where possible the intent will be to retain and protect the parabolic dune as it provides the topographic setting (nestling) intended for the future development.

- CALCAREOUS SAND
- PARABOLIC DUNE
- SAND
- LIMESTONE

CLIMATE



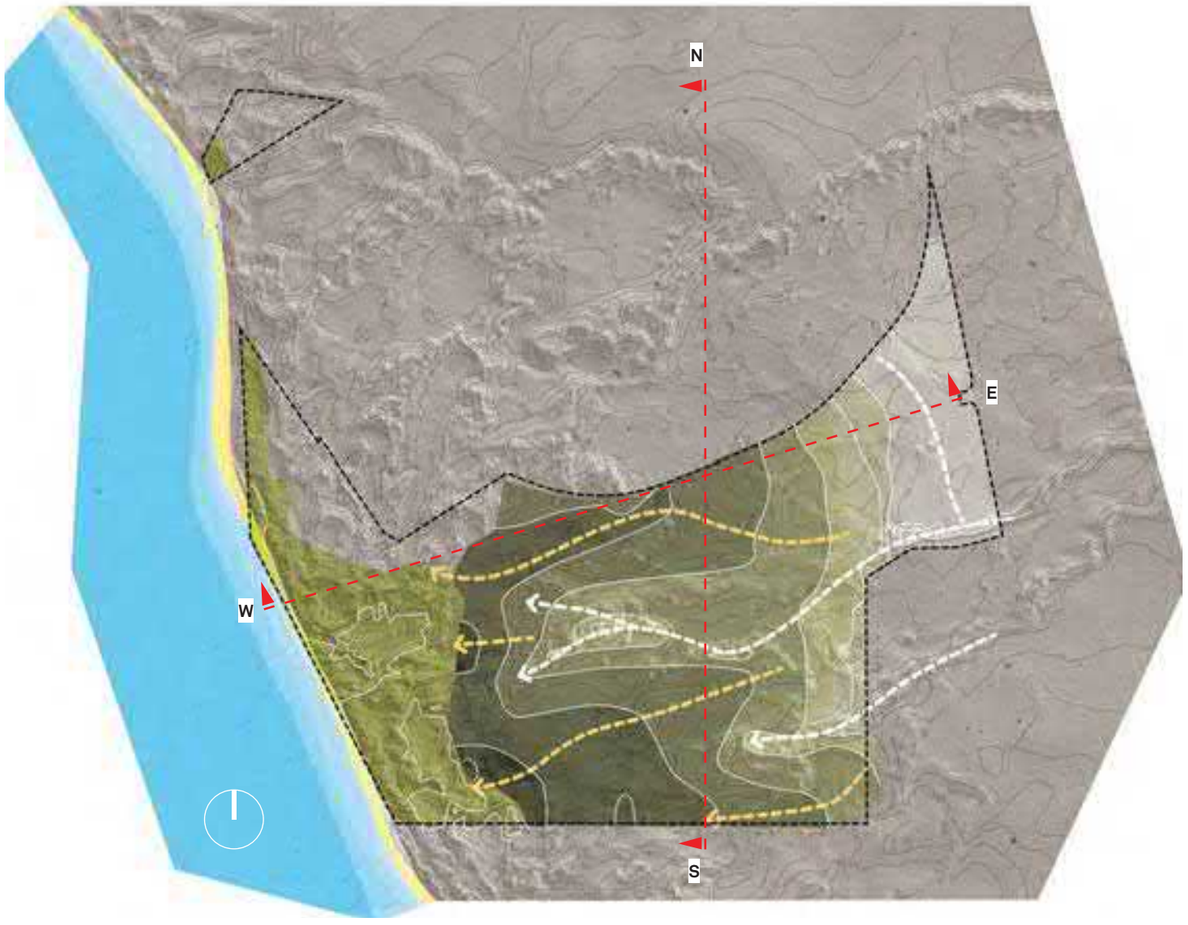
During summer, winds blow from the east to south-east in the morning (4:00am to midday) and from the south-west in the afternoon (1:00pm to 6:00pm, the local sea breeze). Winter is characterised by north-westerly storm winds that back around to the west and south-west, interspersed with calmer periods.

- HOT & SOMETIMES GUSTY MORNING EASTERLY WINDS IN SUMMER AND WARM MORNING WINDS IN WINTER
- COOL AND STRONG SOUTH-EAST SEA-BREEZES IN AUTUMN SUMMER AND SPRING AND COLD WESTERLY SEA-BREEZES IN WINTER

ORIENTATION

- WESTERN
- SOUTH WESTERN
- NORTHERN
- SOUTH WESTERN
- SOUTH EASTERN
- SOUTHERN

TOPOGRAPHY



The topography of the site primarily consists of undulating coastal landforms. The diagram dissects the site by defining 10m contour lines, ridge lines such as the parabolic dune formation and valleys or low points (which directly impact drainage basin locations).

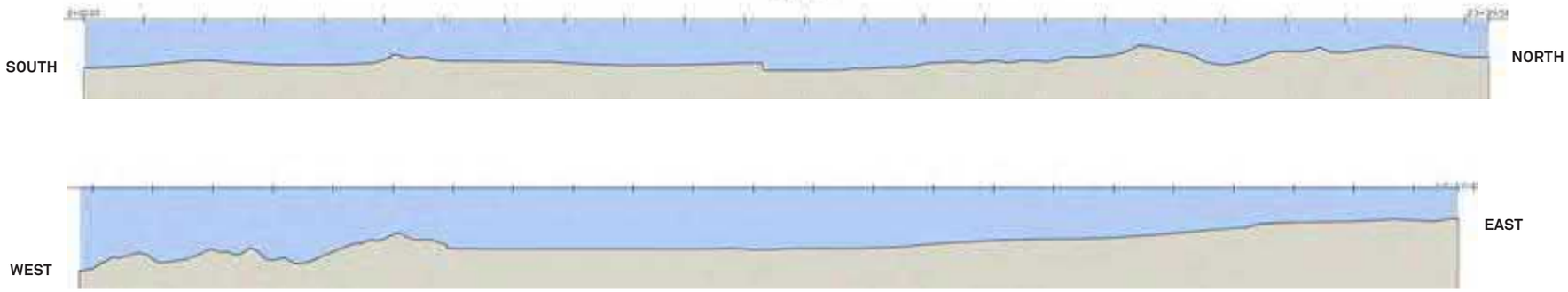
Site features/structures are located along ridges or high points around contour level +50.0 (top of parabolic dune) to +40.0 (major ridges) that provide views of surrounding lands and ocean horizon.

REGIONAL OPEN SPACE

RIDGE LINE - (PREDOMINATELY ARMS OF THE PARABOLIC DUNE)

VALLEY LINE

SECTION LINE



EXISTING SITE VIEWS

All views will be fundamentally changed with the construction of the new development however they provide a good idea of what types of views will be available; either to the ocean or dunal systems.

EXISTING SITE AERIAL

1 EXISTING ROAD INTO SITE DUNE - VIEW SOUTH OF ROMEO RD + WEST TO BEACH

3 EXISTING TOPOGRAPHY OF SOUTH ALKIMOS DUNES - POSSIBLY USED AS LINEAR OPEN SPACE + BIKE/HIKE CONNECTION

2 DUNES WITHIN REGIONAL OPEN SPACE

4 PARKLAND SHOWING HILLS + HOLLOWS OF EXISTING

5 RETAINED DUNE + HIGH POINT TO BE RETAINED

VEGETATION

HABITAT

SPECIAL CHARACTER

03

KEY DESIGN SHAPERS

Key Design Shapers

Key design shapers defined in this chapter respond to the unique site, coastal conditions, analysis findings, natural landscape amenity and urban design. They also build upon principles established in the over-arching Vision + Principles Document.

The key landscape design shapers are;

/ Site responsive design principles
/ Character transition
/ Way finding
/ Open space hierarchy
/ Street hierarchy

These design shapers help to create a landscape framework that informs decisions and provides a design basis to continue with more detailed design of the landscape.

SITE RESPONSIVE DESIGN PRINCIPLES

NOTE: BASE PLAN IS INDICATIVE ONLY. DETAIL DESIGN WILL DETERMINE FINAL LAYOUT

DYNAMIC ENVIRONMENT / EVOLVING COMMUNITY

Design principles were defined for Alkimos to support the delivery of the vision. This gave emphasis to the need to capture the opportunity to respond authentically to the strong embedded landscape character of the site, as the underlying framework for the establishment of a new community over time with a strong sense of place. This section captures the site-specific response to these principles within the South Alkimos site.

Environmental responsiveness is a key element of the design intent. This section illustrates the application of the principles to different areas of the site as a means of explaining the diverse characteristics of the environment and the strong connections to the surrounding landscape.

The whole environment of the dunal landscape has been shaped dynamically by the elements. The landscape framework within this document identifies the organisational structure of the development. As the community is established over a number of years the designed environment will evolve dynamically in response to the changing needs to patterns of use over time. The framework ensures that the core principles are understood as influential elements in ensuring that an authentic site-responsive environment will be established.

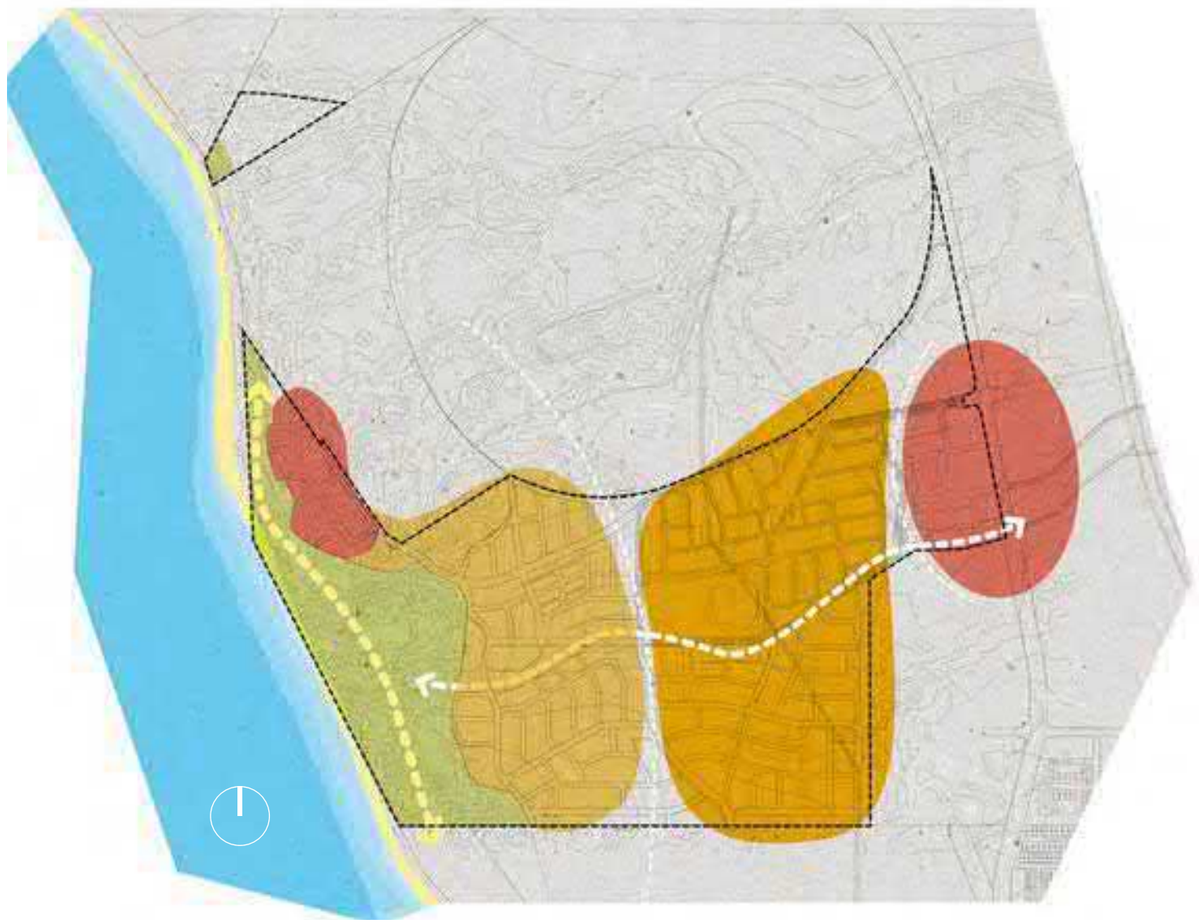
BOLD HORIZON

REFLECT & RESTORE

HILLS & HOLLOWS

UNDULATING OUTLOOK

CHARACTER TRANSITION



NOTE: BASE PLAN IS INDICATIVE ONLY. DETAIL DESIGN WILL DETERMINE FINAL LAYOUT

- COASTAL LANDSCAPE CHARACTER
- NEIGHBOURHOOD LANDSCAPE CHARACTER
- URBAN LANDSCAPE CHARACTER
- FORESHORE LANDSCAPE CHARACTER
- DUNAL LANDSCAPE CHARACTER
- REGIONAL RESERVE

WAYFINDING

NOTE: BASE PLAN IS INDICATIVE ONLY. DETAIL DESIGN WILL DETERMINE FINAL LAYOUT

MAJOR DESTINATIONS

- ROMEO ROAD RETAIL CORE
- COMMERCIAL MIXED USE
- SCHOOL GROUNDS
- LOCAL DISTRICT PARK
- REGIONAL OPEN SPACE
- PUBLIC OPEN SPACE

ROUTES / CONNECTIONS

- PARABOLIC DUNE DUAL USE PATH
- BUFFER DUAL USE PATH
- FORESHORE DUAL USE PATH (ECO LINK)
- SHARED PATH

OPEN SPACE HIERARCHY

NOTE: BASE PLAN IS INDICATIVE ONLY. DETAIL DESIGN WILL DETERMINE FINAL LAYOUT

- ACTIVE OPEN SPACE
- PASSIVE OPEN SPACE (INCLUDES PLAY AND SPORTS AREAS BUT NOT FIELDS)
- CONSERVATION OPEN SPACE
- REGIONAL OPEN SPACE
- PARABOLIC DUNE

STREET HIERARCHY

NOTE: BASE PLAN IS INDICATIVE ONLY. DETAIL DESIGN WILL DETERMINE FINAL LAYOUT

- BEACH CONNECTOR
- BEACH BUS ROUTE
- PRECINCT CONNECTORS
- POS CONNECTIONS
- LOCAL STREETS
- FEATURE TREE LOCATIONS
- SPECIAL STREETS
- FEATURE TREE PLANTING AT STS ROUTE STOPS

04

LANDSCAPE MASTER PLAN

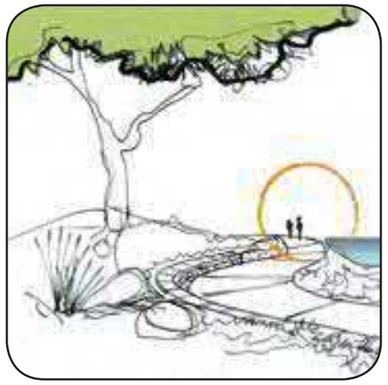
Landscape Framework and Illustrative Master Plan

LANDSCAPE FRAMEWORK

The landscape framework describes the strategic, high level landscape design response to both the site (existing landscape and context) and to the functional requirements of the future community.

The following strategies underpin the landscape framework:

- Vegetation and landform is preserved or re-instated along the remnant parabolic dune. This helps to meet aspects of the Natural Heritage and Ecological Connection Strategy.
- Major ocean views are made accessible by providing lookouts in key locations within public open space.
- Pathway connections are provided to the foreshore reserve including anticipated connection to the planned regional coastal walk trail.
- Walking and cycling access is provided along the parabolic dune, connecting westward to the beach and eastward into the future city centre.
- Active use public open spaces are located along and connected to the parabolic dune.
- Passive use public open spaces are distributed such that each precinct in South Alkimos has its own 'green heart' located a short walking distance away.
- Greening and green links are incorporated into the streetscape designs with street trees selected from suitable local native species.
- Boulevard style tree plantings and embellished medians and verges in streetscapes along important streets including bus (STS) routes and the main east-west and north-south vehicle routes.
- Grouped tree plantings rather than single specimens are envisioned in streetscapes and public open spaces to provide shade and shelter from the prevailing coastal winds.
- Streetscape designs and planting strategies will incorporate features to encourage pedestrians and cyclists to walk and ride to urban precinct centres and open spaces.



ILLUSTRATIVE MASTER PLAN

The illustrative LMP on opposite page depicts the look and feel of the public realm at South Alkimos. It illustrates how the proposed public realm and the ultimate landscape design of the place responds to the site's environmental conditions, context, the ultimate landform (at earthworks completion) and the proposed urban layout. The focus of the master plan is the look and feel of public open space and of streetscapes. Key elements of the LMP include:

- Embellished, urban-style landscaping along Romeo Road – forms a place that is both urban and coastal.
- Vibrant landscaping to the mixed use / retail precinct hub located central to South Alkimos.
- Unique landscape design palettes to each of the six proposed precincts to help define market differentiation, precinct appeal and community identity.
- Consistent landscape treatments to all six precincts that will also continue into future stages of Alkimos.
- Open space, landscaping and user facilities spread over 23 parks and some 22.4 ha of public open space and 41.2 ha of Regional Open Space.
- Landscape designs that respond to the site inspiration as described in the Alkimos Landscape Vision and Design Principles: Bold Horizon, Reflect + Restore, Undulating Outlook, Dynamic Environment / Evolving Community and Hills and Hollows.

ALKIMOS SOUTH LANDSCAPE CONCEPT FRAMEWORK DIAGRAM

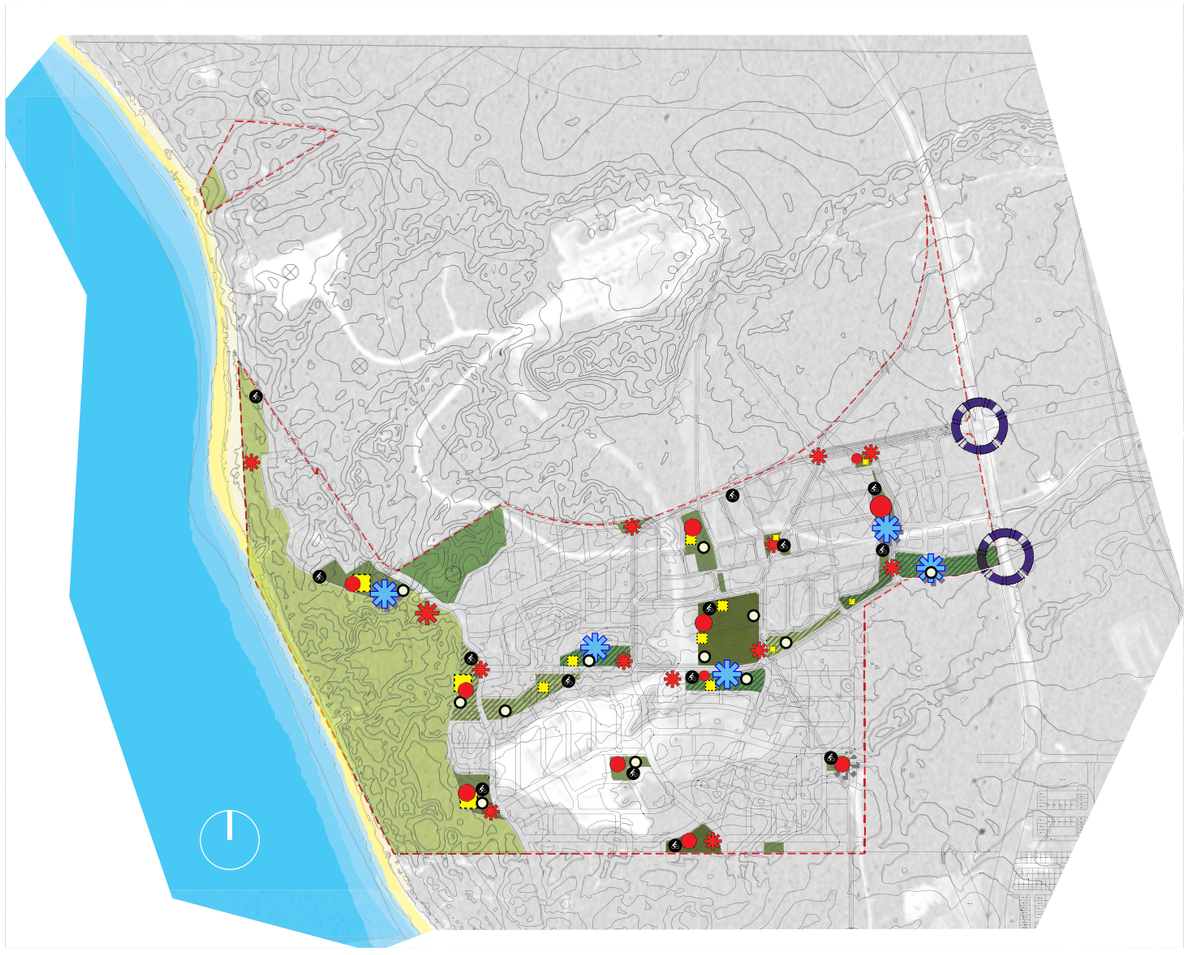
- MAJOR OCEAN VIEWS
- ACTIVE OPEN SPACE AREAS CONNECTED VIA PARABOLIC DUNE
- PASSIVE OPEN SPACE AREAS
- RECREATIONAL CONNECTIONS
- GREEN LINKS
- URBAN/PRECINCT


LOT 9001
AREA UNDER FUTURE PLANNING AND DESIGN
WASTE WATER TREATMENT PLAN BUFFER
COMMERCIAL CENTRE
MARMION AVENUE
AREA UNDER FUTURE PLANNING AND DESIGN
TRINITY ESTATE
PRIMARY SCHOOL
ACTIVE POS
MIXED USE PRECINCT
MIXED USE PRECINCT
FORESHORE RESERVE TO FUTURE PLANNING AND DESIGN
KARLI SPRINGS
PUBLIC REALM (working title)
1 Marmion Plaza
2 Romeo Road Gateway
3 Romeo Road Link
4 Romeo Road Coast
5 Gateway Streets North & South
6 Gateway Main
7 The Esplanade
8 Play View Avenue
9 Sunset Avenue
10 Precinct Boulevard
11 The Promenade
12 Trinity Link
13 Karli Avenue
14 Boundary Avenue West
15 Boundary Avenue East
16 The Greenway (East)
17 The Greenway (Central)
18 The Greenway (West)

KEY PARK SPACES (working title)

A	Dune Square
B	Escarpment + Dunal Park
C	Stylised Dune Link
D	Urban Square Park a
E	Urban Square Park b
F	Nature Bio Park
G	Artwork Pod Park
H	Conservation Park
I	Premium Beach Park
J	Boat & Beach Park
K	Limestone Park
L	Pinnacle Park
M	Ridge Park
N	Hilltop Park
O	Passive Park
P	South Entry Park
Q	Dune Reserve Park
R	Serene Coast Park
S	Retained Dune Park
T	North Gateway Park (to future design)
U	South Alkimos Local District Park
V	Regional Open Space
W	Alkimos Beach (Indian Ocean)

LANDSCAPE STRUCTURES + ELEMENTS



NOTE: BASE PLAN IS INDICATIVE ONLY. DETAIL DESIGN WILL DETERMINE FINAL LAYOUT

- MAJOR GATEWAY
- ENTRY
- LARGE PLAYGROUND
- MEDIUM PLAYGROUND
- SMALL PLAYGROUND
- EXERCISE STATION OR NODE
- LOOKOUT
- SHELTER
- MEDIUM SHELTER
- SHELTER
- CYCLE PARKING AREA
- PUBLIC OPEN SPACE

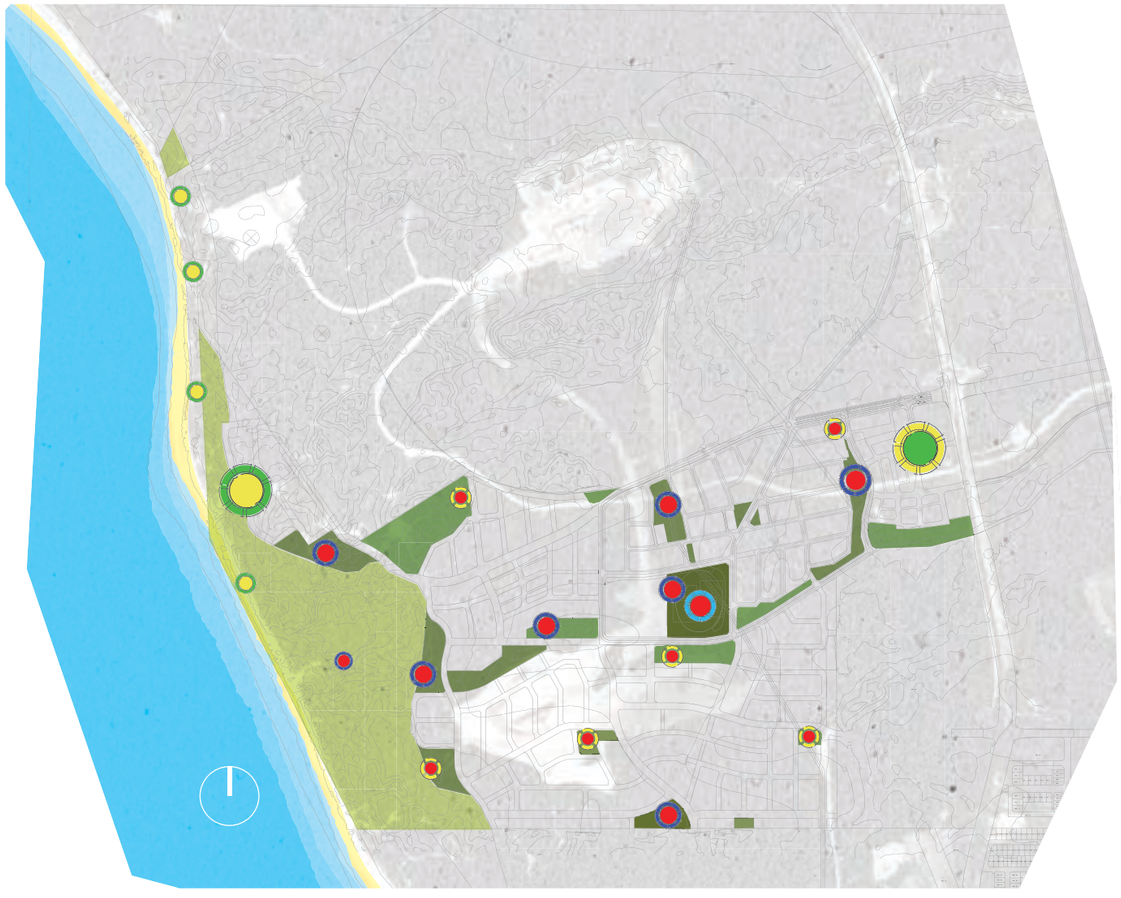
PLAYGROUND STRATEGY- AGE GROUP OR ACTIVITY

This strategy is an overview to South Alkimos beach and demonstrates the importance of play to the community. Play provides social, developmental and lifestyle benefits for people of all ages.

The high proportion of children and young people or families estimated throughout Alkimos Beach and surround community highlights the need for high quality play and leisure opportunities.

The key principles to be considered when designing these play spaces are;

/ Locations, within walkable distances from households for local playgrounds and provide ease for walking/cycling to the district park
/ Diversity, providing range and adventurous play environments to cater for a variety of interests and themes associated with the coastal natural environment
/ Amenity and accessibility, ensuring access for a range of abilities and ages. Play areas or zones shall provide both active and passive provision for all, toddlers to adults
/ Sustainability, ensuring that playgrounds can be maintained in the long term
/ Natural shade will be a priority with the planting of appropriate species of shade trees



NOTE: BASE PLAN IS INDICATIVE ONLY. DETAIL DESIGN WILL DETERMINE FINAL LAYOUT

- JUNIOR PLAY - 3 TO 7 YRS OLD
- MIXED AGE PLAY - BASED 3 TO 12 YRS OLD
- ACTIVE PLAYGROUND - ACTIVE 12 YRS OLD TO ADULTS
- POTENTIAL FOR BROAD RANGE MIXED AGES - ACTIVE + PASSIVE ACTIVITY STREET SIDE, FORESHORE + BEACH
- POTENTIAL FOR STREET SIDE + INTERNAL ACTIVITY CENTERS

SIGNIFICANT VIEWS

NOTE: BASE PLAN IS INDICATIVE ONLY. DETAIL DESIGN WILL DETERMINE FINAL LAYOUT

SIGNIFICANT VIEWS FROM HIGH POINTS IN FUTURE OPEN SPACE

STREET VIEWS

NOTE: BASE PLAN IS INDICATIVE ONLY. DETAIL DESIGN WILL DETERMINE FINAL LAYOUT

OCEAN VIEWS

DUNAL VIEWS

PUBLIC OPEN SPACE / PARK VIEWS

VIEWS WITH SIGNIFICANT 'WOW' FACTOR (MAJOR, MINOR)

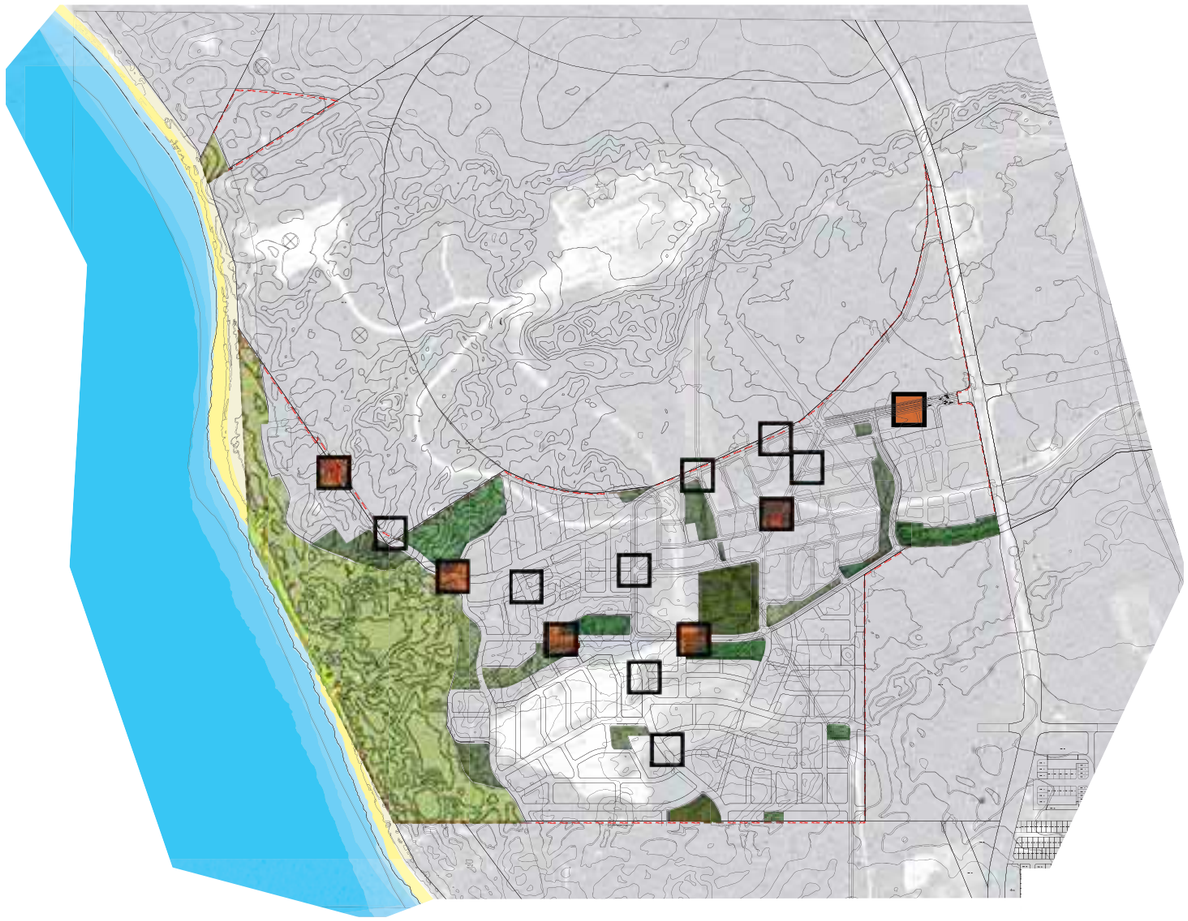
ARTWORK LOCATIONS

NOTE: BASE PLAN IS INDICATIVE ONLY. DETAIL DESIGN WILL DETERMINE FINAL LAYOUT

INDICATIVE LOCATION OF ARTWORK

PRECINCT ONE - ART/ SUPRISE MOMENTS IN LANDSCAPE

FEATURE STS & BUS STOPS



NOTE: BASE PLAN IS INDICATIVE ONLY. DETAIL DESIGN WILL DETERMINE FINAL LAYOUT

STS TRANSIT STOP / FEATURE SHELTER

BUS STOP FEATURING PLANTING & CASUAL SEATING

POTENTIAL SEED RE-USE

NOTE: BASE PLAN IS INDICATIVE ONLY. DETAIL DESIGN WILL DETERMINE FINAL LAYOUT

POTENTIAL SEED RE-USE IN OPEN SPACE

POTENTIAL FOOD TRAIL WALK

Note: Final route to be confirmed with tree and shrub/groundcover selection to be focused around educating the community and use particular native species.

DRAINAGE

NOTE: BASE PLAN IS INDICATIVE ONLY. DETAIL DESIGN WILL DETERMINE FINAL LAYOUT

PROPOSED STORMWATER STORAGE BASINS (1:100 & 1:5 YEAR EVENTS SHOWN)

DRAINAGE DIRECTION

05

OPEN SPACE DESIGN

Landscape Typologies of Public Open Space

All Public Open Spaces (POS) within South Alkimos have been planned according to a landscape typology outlined in the Landscape Vision and Design Principles document.

There are six landscape typologies and the characteristics of each are described in the legend below. Hybrids between one or more typologies are possible, depending on location and amenity requirements.

POS typologies are influenced in their look and feel by their place/site qualities in relation to landscape character zones - adopting either a coastal, neighbourhood or urban design influence.

Open Space Typology

The open space typologies reflect the broad objectives for the project. Each of the spaces will specifically deliver a type of landscape that is intensively informed by market research into the community's needs, aspirations and values. This will result in fine tuning of the designs to suit the specific user groups and provide cultural diversity.

The community will be directly involved in the design of the spaces through focus groups and visioning. Over time the open spaces will evolve by community driven art programs, community embellishments and adaptation.

PLAZA / MARKET SQUARE

KEY POINTS
- / A large and formal open space available for civic/community and commercial activities with integrated art and water features as potential features
- / Well defined space with active building frontages - managed micro climates using canopy trees
- / Flexible use of space for civic function eg. markets and festivals

COASTAL
- / N/A

NEIGHBOURHOOD
- / Shade structures, trees, raised garden beds and water elements to reduce heat gain
- / Local sourcing material to create sense of place, celebrate precinct identity through colour, detail and artwork
- / Work with neighbourhood colour, material and planting palettes to form neighbourhood language

URBAN
- / Evocative lighting to encourage night use
- / Maximum 15% introduced understorey and 50% introduced tree species
- / Spectacle opportunities: shade structures, colour, water, lighting, shade, play and sound scapes
- / Work with urban colour, material and planting palettes to form urban language

ENTRY PARK

KEY POINTS

/ A presentation landscape, designed to address vehicular views at entries to site off Marmion Ave, the freeway or other major Alkimos Beach gateways usually 500m2 to 1000m2

/ It can also be a threshold between two precincts to build a sense of arrival / departure, can reveal site narratives and precincts identity

/ Can be merged with local park to become a destination space or landmark

COASTAL

/ Informal and relaxed gateway strategy - played down and mostly soft materials.

/ Predominant landform creation and planting arrangement to express coastal identity

/ Interactive artwork placement using natural or recycled materials and visual.

/ Work with coastal colour, material and planting palettes to form coastal language.

NEIGHBOURHOOD

/ Semi-informal gateway strategy - celebrated but not over-done with too much structure

/ Can be used to create subtle distinctions between precincts expressed through colour / form / species and form language

/ Work with neighbourhood colour, material and planting palettes to form neighbourhood language

URBAN

/ Formal and larger scale strategy - more impact and memorable transition space

/ Combination of hard landscape features and planting arrangement to celebrate arrival within a large scale and formal language

/ Featuring integrated artworks in a contemporary colourful style whilst expressing urban ridge-line locations

/ Work with urban colour, material and planting palettes to form urban language

LINEAR PARK

KEY POINTS

/ A medium sized intimate park ideally located central to precincts providing immediate open space within 400m. Can be associated with a 'hill or hollow' or be urbanised if in town centre. May have private or public built form directly addressing the park

/ Comprised of native vegetation beds, lawn and tree zones to enhance views in and out and often incorporating stormwater retention requirements - includes amenities such as shelters, play spaces, exercise station areas, rest points, paths and sometimes barbeques

COASTAL

/ Path networks to meander through dunal topographic forms

/ Identify appropriate species to use to maintain ecological value as links between dunal reserves

/ Natural and informal pattern of planting

/ Work with coastal colour, material and planting palettes to form coastal language

NEIGHBOURHOOD

/ Sections of straight paths used in combination with curved to form a hybrid form language

/ Well-lit route to encourage night use

/ Low understorey planting to allow view-lines and complied with CPTED

/ Work with neighbourhood colour, material and planting palettes to form neighbourhood language

URBAN

/ Path networks to be predominantly geometric with occasional organic forms

/ Avenue tree planting with formal understorey to emphasize the linear spatial arrangement

/ Arrange street furniture in a similar manner to strengthen the urban character and feel

/ Work with urban colour, material and planting palettes to form urban language

LOCAL PARK

KEY POINTS

/ A medium sized intimate park ideally located central to precincts providing immediate open space within 400m. Can be associated with a 'hill or hollow' or be urbanised if in town centre. May have private or public built form directly addressing the park. They range is size from a small local usually 1000m2 to 5000m2 and larger local between 1ha to 2ha

/ Comprised of native vegetation beds, lawn and tree zones to enhance views in and out and often incorporating stormwater retention requirements - includes amenities such as shelters, play spaces, small kick-about area, paths and sometimes barbeques

COASTAL

/ 100% indigenous tree and understorey species applied in organic, informal patterns; minimized use of lawn area

/ Natural edges to blend into surrounding regional reserves

/ Pathways arranged to emphasize 'hill' or 'hollow' experiences and playgrounds to be sensitively incorporated and encourage nature based play

/ With coastal colour, material and planting palettes to form coastal language

NEIGHBOURHOOD

/ Park spatially defined by tree belts, lawn and tree zones

/ Balanced lawn areas to be provided where appropriate to provide gathering places or to maintain view-lines and ocean vistas

/ Spatial and planting arrangement should maintain or enhance the experience of the dune landform with 'hill' or 'hollow' landscape zones.

/ Work with neighbourhood colour, material and planting palettes to form neighbourhood language

URBAN

/ Importance to include dense planting area to provide urban oasis, shade canopy and contemplation spaces

/ Functional area to accommodate multiple and flexible uses

/ Play spaces to utilise more exotic and refined materials

/ Work with urban colour, material and planting palettes to form urban language

PLAZA / MARKET SQUARE

ENTRY PARK

LINEAR PARK

SMALL DISTRICT PARK

LOCAL PARK

CONSERVATION PARK

HYBRID -

A - Conservation / Linear Parkland

SMALL DISTRICT PARK

KEY POINTS

/ A large and natural-looking green open space with high proportion of lawn to meet active and passive recreation needs

/ Often incorporating stormwater retention requirements

/ The size ranges from between 2ha to 5ha, and usually associated with a school sites and can include ovals, paths, playgrounds, kick-about spaces, conservation areas, hydro zoned planting areas, shelter belts and community facilities (toilets, change room, shelters and barbeques etc).

/ May be located in on a hill or in a hollow or combination of both

COASTAL

/ N/A

NEIGHBOURHOOD

/ Important to create open park edges to encourage use and increase passive surveillance

/ Certain area where accommodating urban stormwater drainage should integrate with best WSUD principle to satisfy other uses beyond drainage

/ Work with neighbourhood colour, material and planting palettes to form neighbourhood language

URBAN

/ Formal and geometric terrace seating to oval at certain sections with possible flood lights to accommodate more intensive night use of facilities

/ Potential incorporation of urban uses including skate facilities, tennis courts etc

/ Formal entrance to park to address access from City Centre. Linear park to combine with the approaching landscape

/ Work with urban colour, material and planting palettes to form urban language

DUNE CONSERVATION PARK

KEY POINTS

/ Landscape space located along parabolic dune system with conservation and recreation connectivity as its primary purpose - minimal tree planting and no turf

/ Landscape areas within the site to celebrate dune formation, vegetation and habitat

/ Path network to run along contours to establish link from City Centre to beach – boardwalks, art and interpretive signage positioned in key locations

/ Lookouts and shelters at specific high points to reveal breath-taking ocean and surrounding views

COASTAL

/ Informal and relaxed entry designs to path network through dunal reserve

/ Elevated pathway / boardwalk where needed to best preserve dunal system

/ Work with coastal colour, materials and planting palettes to form coastal language

/ Fencing and controlled access for sensitive areas

/ Forward works stabilisation + restoration

NEIGHBOURHOOD

/ Semi-formal entrances into dunal reserve

/ Elevated pathway / boardwalk where needed to best preserve dunal system

/ Work with coastal colour, material and planting palettes to form coastal language

/ Fencing and controlled access for sensitive areas

/ Forward works stabilisation + restoration

URBAN

/ Urbanised entrance into dunal park

/ Elevated pathway / boardwalk where needed to best preserve dunal system

/ Work with coastal colour, material and planting palettes to form coastal language

/ Fencing and controlled access for sensitive areas

/ Forward works stabilisation + restoration

/ Stylised and resilient rehabilitation + management

Master Plan Details
Open Space Design

The plan opposite shows the locations of parks selected for sketch detailing as part of the LMP. Plan and character images for each park are shown.

Parks chosen for sketch detailing are all within the first stage that constitutes Precinct One. Also shown are location of typical street cross sections. The sections are included in the appendix and indicate tree and shrub species. The sections are based on cross sections prepared for the South Alkimos Design Codes.

LEGEND

A	Entry Park - Dune Square
B	Local + Linear Park - Escarpment
D	Local Park - Urban Square A
E	Local Park - Urban Square B
F	Local - Nature Bio
U	Small Local District Park

Selected parks boundary

Typical street section: refer to appendix

Open Space Designs - Plan & Section Locations

Local Park Typology

ESCARPMENT PARK

LOCATION PLAN

This park is a naturalistic hillside that reveals the beauty of the Alkimos landscape to the visitor, offering scenic 'lookout' views over the emerging coastal precincts. The park is experienced by walking along intriguing paths that wind up and down the slope, linking natural play opportunities and connecting to the wider path network of Alkimos Beach.

Pockets of dense native vegetation and copses of local coastal trees are arranged to accentuate the hill and its hollows. These support native vegetation and encourage the Carnaby Cockatoo. Rugged limestone boulders recycled from the site are arranged organically along the park's flank. These combine with the path network and sloping heath planting providing much of the substance and sense of place to this park. Artworks may be incorporated into the landscape.

INDICATIVE SKETCH OF ESCARPMENT PARK (FROM WEST)

IMAGES INDICATIVE ONLY FOR PARKLAND

INDICATIVE SECTION

LEGEND

1	Main pedestrian path
2	Lookout shelter / BBQ area / meeting space
3	Ramp @1:21 access (disabled access)
4	Main staircase with ocean views
5	Secondary paved pedestrian path
6	Secondary stair access
7	Crushed limestone & cement mix path
8	Small shade structure
9	Open turfed area with mounding (hills/hollows)
10	Retaining walls - recycled limestone boulders from site
11	Nature play with shade structure
12	Native planting on embankment (jute matting) >1:5 max
13	Information Signage
14	Adventure Park - trails, boulders + native vegetation
15	Nature Park - play, discovery trails - active/passive activity
16	Car park (parallel) or pedestrian crossing

LEGEND

Opportunity of ocean views from lookouts, shelters + high points of parkland

Main pedestrian access - including 1:21 access ramps, steps + pathways

Secondary adventure trails through + along contours (crushed limestone/mulch etc)

Native vegetation on embankments to stabilise slopes and provide amenity

Shelter to lookouts, bbq facilities + play area

Landform - planted or turf < 1: 6 to reflect hills/ hollows of dunal forms

Landscape nodal points - active + passive activities. E.g Play zones, lookouts + rest points

Section line, section refer opposite page

Plan approx 1:1000@ A3

Local District Park Typology

SOUTH ALKIMOS LOCAL DISTRICT PARK

LOCATION PLAN

This park includes playing fields collocated with the neighbouring school. Naturalistic, 'bush style' edges will feature hydrozoning and water wise planting. Turf will only be used for the active area of the park or in special gathering places where picnics and barbeques take place and grassy slopes for viewing sports.

An interior network of pathways will wind through the undulating landforms and native vegetation beds on the parks perimeter, blending with the stylised topography.

Rain garden style infiltration basins are tucked into the corners of the park, accommodating stormwater. Groves of native trees will provide shelter belts and canopy. The southern edge of the park includes the continuation of the district scale 'dune link' - the special pathway that follows the retained parabolic dune.

IMAGES INDICATIVE ONLY FOR PARKLAND

LEGEND

1	Main pedestrian path
2	Secondary paved pedestrian path
3	Crushed limestone & cement mix path
4	Shade structure / pavilion
5	Low wall / seating
6	Shaded meeting space / BBQ area
7	Open turfed area
8	WSUD - bio retention basin
9	Signage node - community notice board, informational
10	Periphery tree planting
11	Turfed swale link bio-retention areas
12	Verge path
13	Large feature shade trees
14	Feature tree planting for way finding
15	Bus stop shelter - indicative location only
16	Car parking near school site

Note: Paths will be closely linked visually to the street to form part of overall Hike & Bike network.

LEGEND

Opportunity of views to shelters in parkland

Main pedestrian access - including 1:21 access ramps, steps + pathways

Secondary adventure trails through + along contours (crushed limestone/mulch etc)

Native vegetation to provide amenity

Shelter to lookouts, bbq facilities + toilet facilities

Landform - planted or turf < 1: 6 to reflect hills/hollows of dunal forms

Landscape nodal points - active + passive activities. E.g Play zones, exercise stations + rest points

Plan approx 1:1500@ A3

Local Park Typology

NATURE BIO-PARK

LOCATION PLAN

The park accommodates stormwater as its primary function. This is provided by rain garden style infiltration areas that are conceived as hollows, 'carved out' of the landscape. They also provide undulating and interesting nature based play opportunities, shelter on windy days and refuge from the heat of the summer sun.

The park is enhanced by shelters, situated to provide views and the perfect place for a picnic. The treatment of slopes references the natural Alkimos landform and reduces the need for heavy retaining walls. Turf is minimised and water wise groundcovers such as native plants, reused seed collected from site, white beach sand, rock and gravel beds together with mulch areas are used instead, providing diversity and interest.

IMAGES INDICATIVE ONLY FOR PARKLAND

LEGEND

1	Main pedestrian path
2	Secondary paved pedestrian path
3	Crushed limestone & cement mix path
4	Shade structure
5	Low wall / seating
6	Shaded meeting space / BBQ area
7	Open turfed area
8	WSUD - bio retention basin
9	Signage node - community notice board, informational
10	Periphery tree planting
11	Turfed swale
12	Verge path
13	Large feature shade trees
14	Feature tree planting
16	Car parking

LEGEND

Opportunity of views to shelters in parkland

Main pedestrian access - including 1:21 access ramps, steps + pathways

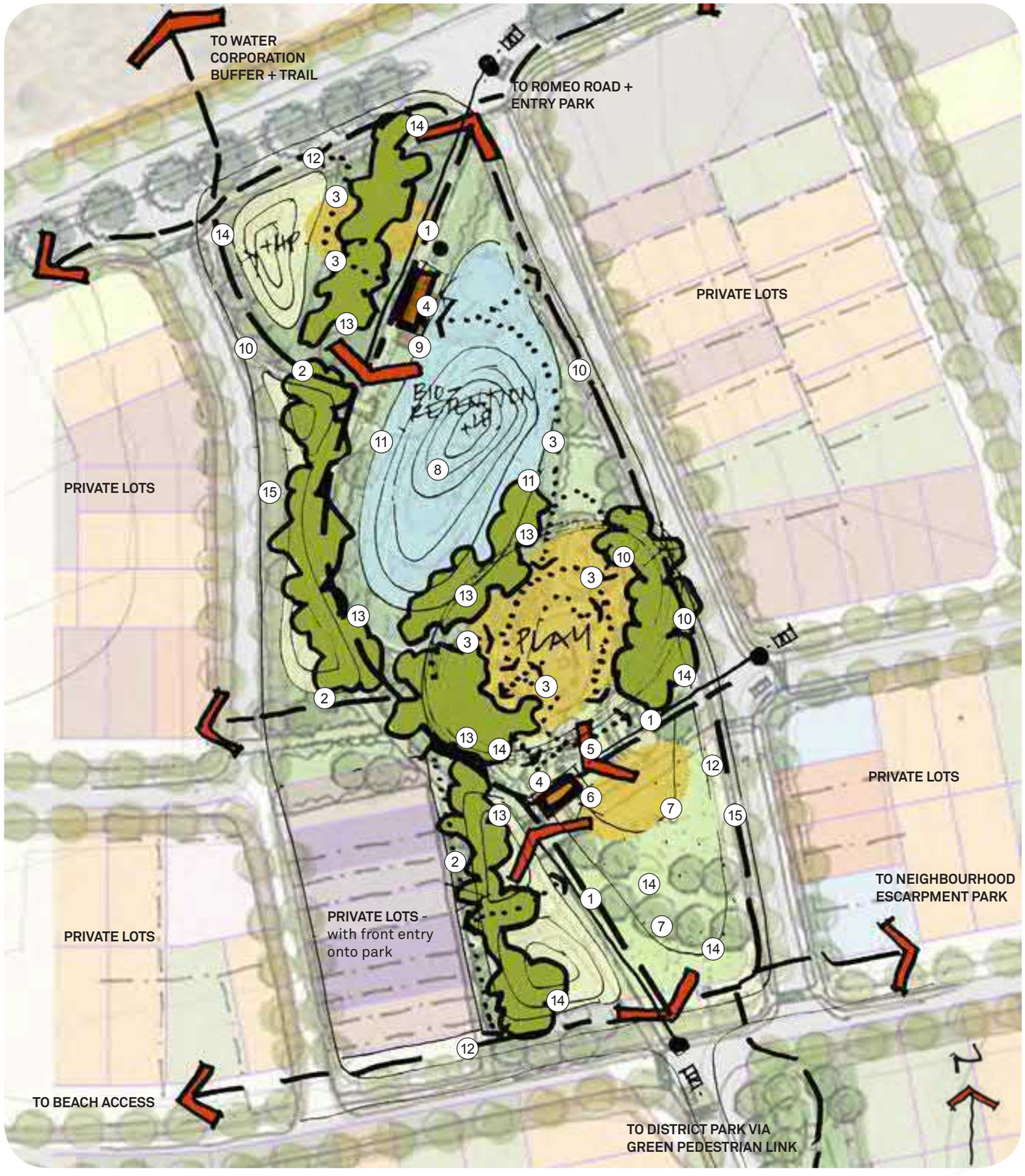
Secondary adventure trails through + along contours (crushed limestone/mulch etc)

Native vegetation to provide amenity

Shelter to parkland

Landform - planted or turf < 1: 6 to reflect hills/ hollows of dunal forms

Landscape nodal points - active + passive activities. E.g Play zones, exercise stations + rest points



Plan approx 1:1000@A3

Entry Park Typology

DUNE SQUARE

LOCATION PLAN

This park is a 'presentation' landscape, designed to delight both pedestrian and vehicular viewers with the beauty and detail of the Alkimos landscape. Views into the park are framed by mounded landforms and structured native vegetation planting beds.

A play area, set back from the roadside will be nestled amongst a shady grove of native trees. Park furniture will be understated and sit in its natural landscape setting. The eye will instead be drawn to the detail found in delicate vegetation, hand crafted stonework and subtle paving and seating details.

IMAGES INDICATIVE ONLY FOR PARKLAND

LEGEND

1	Main pedestrian path
2	Secondary paved pedestrian path
3	Crushed limestone & cement mix path
4	Shade structure
5	Low wall / seating
6	Artwork to top of hill or 'Precinct 1' structure
7	Open turfed area with dune mounding
8	Residential / Private Lots fence
9	Signage node - community notice board, informational
10	Periphery tree planting
11	Turfed swale
12	Verge path
13	Large feature shade trees
14	Feature tree planting
15	Bus stop shelter - indicative location only
16	Car parking

LEGEND

Opportunity of ocean views from lookouts, shelters + high points of parkland

Main pedestrian access - including 1:21 access ramps, steps + pathways

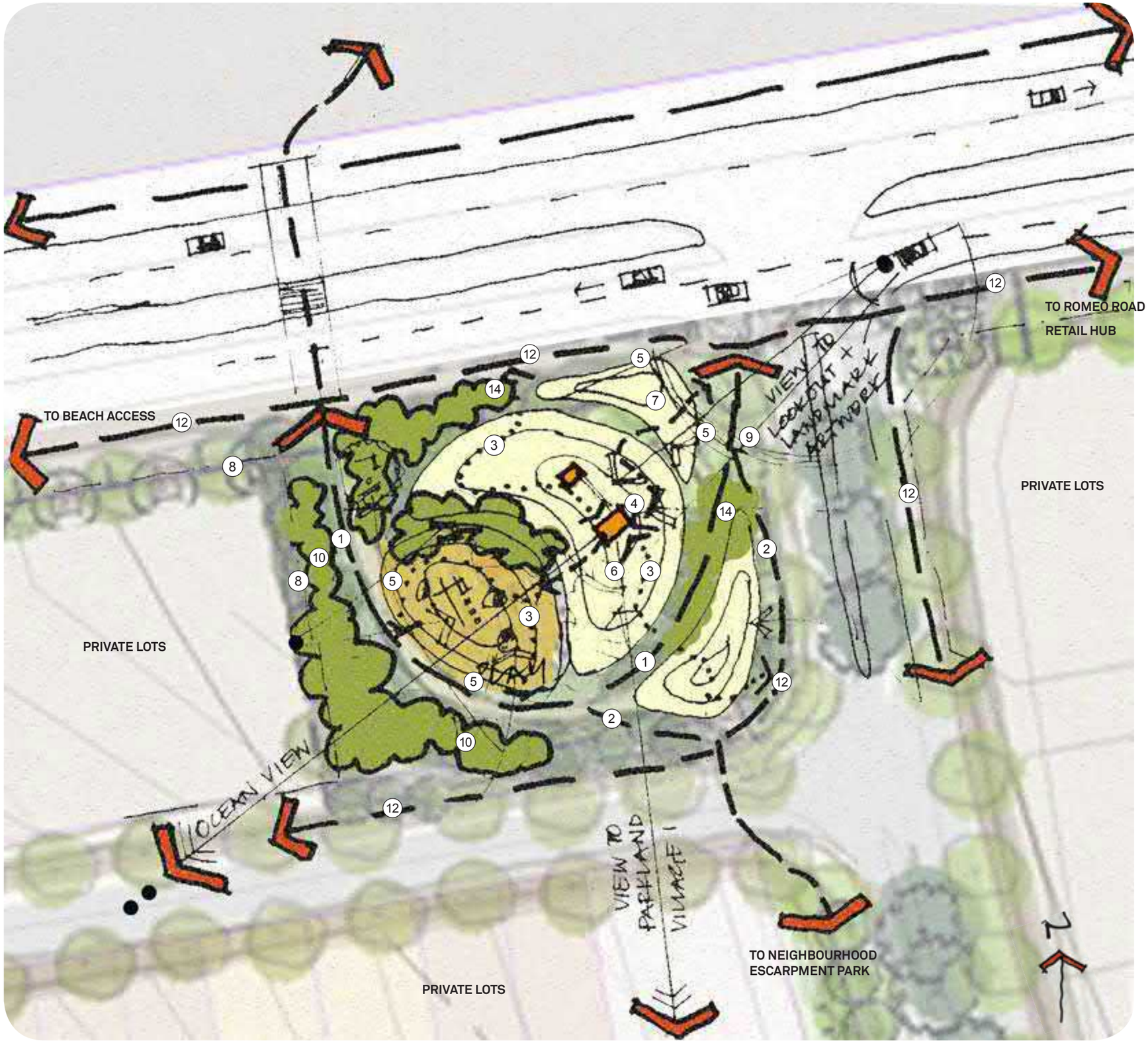
Secondary adventure trails through + along contours (crushed limestone/mulch etc)

Native vegetation on embankments to stabilise slopes and provide amenity

Shelter to lookouts, bbq facilities + play area

Landform - planted or turf < 1:6 to reflect hills/ hollows of dunal forms

Landscape Nodal Points - Active + passive activities. E.g Play zones, exercise stations + rest points



Plan approx 1:500@ A3

Local Park Typology

URBAN SQUARE PARK (A +B)

LOCATION PLAN

This is a local park, conceived as a set of intimate ‘twin’ places that are potentially linked via a traffic-calmed, shared zone. Finer details of local plants and materials will be featured in close proximity to seating and picnic areas.

Flowering heath species, Banksia and groups of salvaged Xanthorea and Macrozamia will demonstrate the resilience and beauty of the local flora, providing valuable habitat for native fauna re-colonising the site.

Reused limestone boulders will be arranged both in ‘pinnacle’ and retaining styles, and clever use of local species such as Leptospermum gladiatum, with high tensile strength roots, will stabilise the stylised, sloping landforms.

IMAGES INDICATIVE ONLY FOR PARKLAND

LEGEND

1	Main pedestrian path
2	Secondary paved pedestrian path
3	Decomposed granite path
4	Shade structure
5	Low wall / seating
6	Shaded meeting space / BBQ area
7	Open turfed area
8	WSUD
9	Signage node - community notice board, informational
10	Periphery tree planting
11	Turfed swale
12	Verge path
13	Large feature shade trees
14	Feature tree planting
15	Bus stop shelter - indicative location only
16	Car parking

LEGEND

Opportunity of views to shelters in parkland

Main pedestrian access - including 1:21 access ramps, steps + pathways

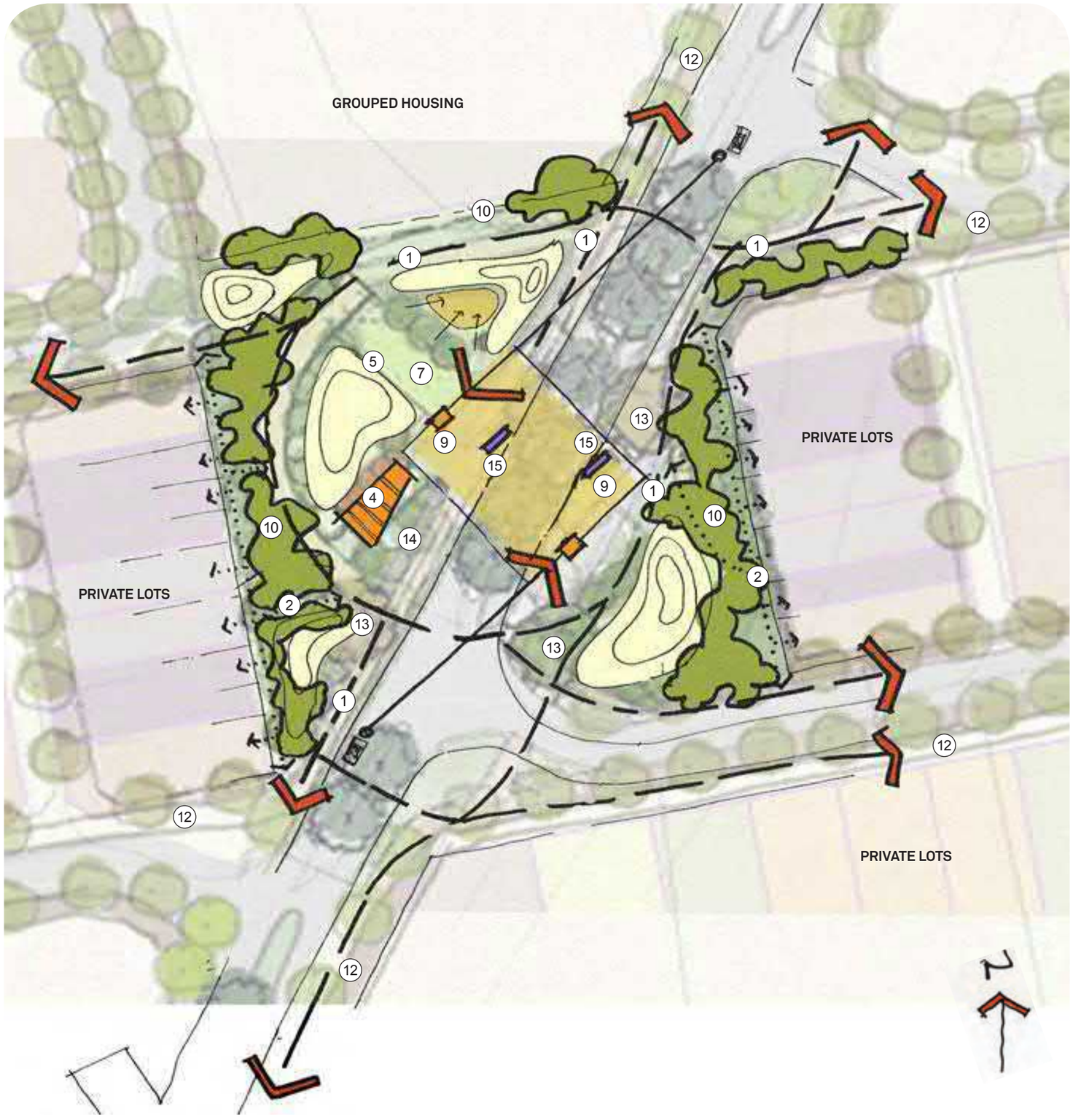
Secondary adventure trails through + along contours (crushed limestone/mulch etc)

Native vegetation to provide amenity

Shelter or indicative bus shelter to parkland

Landform - planted or turf < 1:6 to reflect hills/ hollows of dunal forms

Landscape nodal points - active + passive activities. E.g Play zones, exercise stations + rest points



Plan approx 1:500@ A3

06

STREETSCAPE DESIGN

Landscape Street Hierarchy Strategy

As an overlay to the streetscape typologies established in the South Alkimos Design Codes the following landscape-based street typologies are identified and shown in the diagrams.

The landscape-based street sections intend to capture and strengthen important motorised and non-motorised journeys through and within the future development.

Beach Connector:
The highest level connector is the extension of Romeo Road through Alkimos South to the Beach. However it is also proposed as an evolving narrative that responds to both existing landscape character zones and proposed built form/use, e.g, coastal, neighbourhood, urban and town centre zones bring about different design responses.

Beach Bus Route:
The proposed bus route is equally an important beach-based journey to inscribe or define as distinct from other roads. Some formality and consistency along its length is anticipated. Its scale should be set just below the Beach connector. Bus shelters will contribute to defining the character.

Precinct Connectors:
Precinct connectors are the next step in scale. They cross between precincts and build connections at a neighbourhood level.

POS Connectors:
Public Open Space (POS) connectors create links to and between parks and should preference the pedestrian. They are highly greened and provide maximum canopy cover to promote shady pedestrian journeys to all parks.

Local Streets:
All local streets constitute the remaining level of hierarchy. These streets will promote slow-moving non-motorised movement with informal and shady canopy planting.

Feature Tree Locations:
Feature Tree locations are identified at key junctions or points that may coincide with a hill or hollow or threshold between Precincts. Hill locations will be of upright and large scale form e.g. Araucaria and hollows will be of large scale branching habit in grouped plantings e.g. Rottnest Island Teatree.

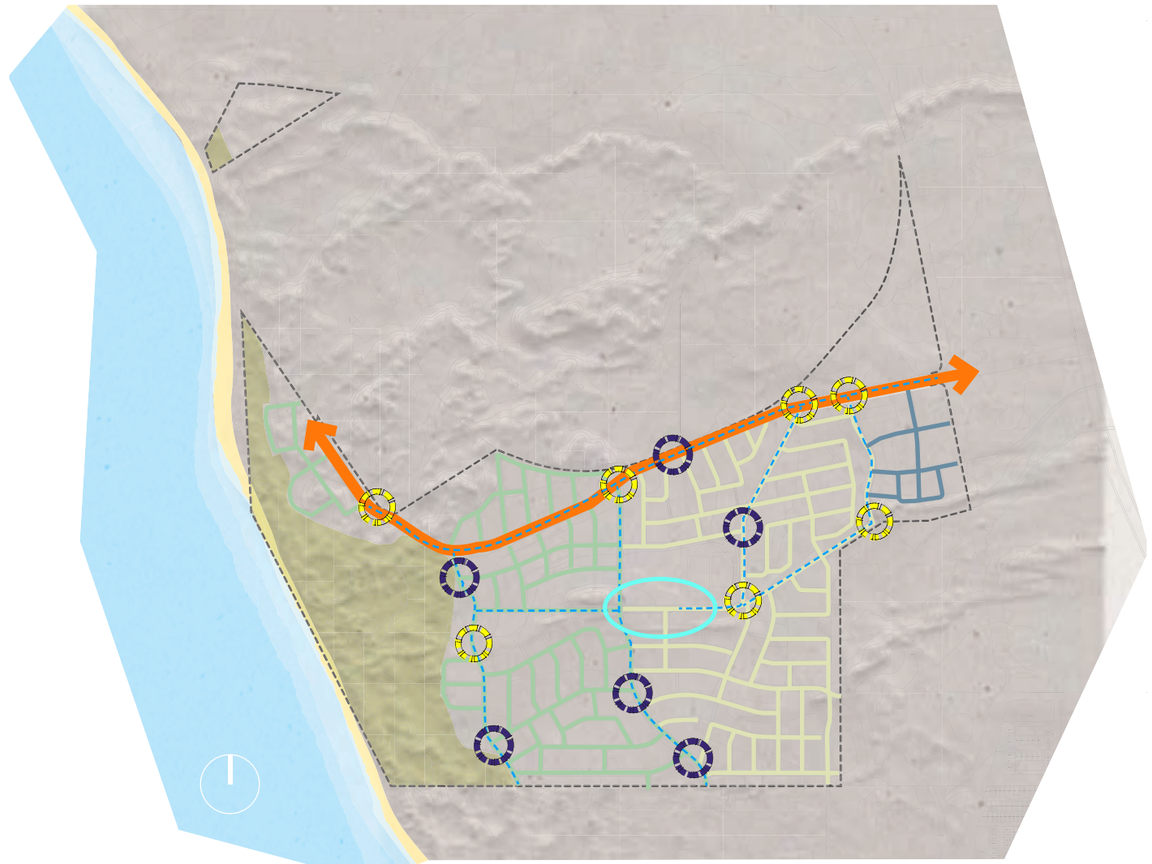
Special Streets:
Two special streets relate to the urban centres and must address increased traffic and pedestrian activity, parking and community focus. They should be sites of additional celebration and embellishment of the streetscape treatments.

BEACH CONNECTOR | BEACH BUS ROUTE | PRECINCT CONNECTORS | POS CONNECTORS | LOCAL STREETS | FEATURE TREE LOCATIONS AND SPECIAL STREETS | FEATURE STS & BUS STOPS

LEGEND

- Urban street tree planting
- Neighbourhood street tree planting
- Coastal street tree planting
- Beach connector (predominantly Eucalyptus gomphocephala)
- WSUD planting
- Feature Planting
- Hollow Planting
- Local Centre

NOTE: refer Streetscape Planting Palette opposite



STREET PLANTING MASTERPLAN (TBC WITH FUTURE DETAIL)

South Alkimos Street Planting Strategy

Note: For charcter images refer to the appendix

Alkimos South character street tree

Dominant species (to landscape character zone)

Consistent Planting between character zones

N Native species

C Plant for Carnaby Black Cockatoo

S Seed collected to date

Eucalyptus gomphocephala

STREETSCAPE PLANTING PALETTE	COASTAL	NEIGHBOURHOOD	URBAN	MEDIAN / WSUD	PRIVATE LOTS
TREE - GENERAL	*Agonis flexuosa NC* *Callitris preissii NC* *Casuarina cunninghamiana NC* *Casuarina equisetifolia ssp. Incana N* *Eucalyptus utilis N* *Eucalyptus gomphocephala NCS* *Lagunaria patersonii* *Melaleuca lanceolata N* *Metrodsideros excelsa* *Banksia ashbyi NC*	*Agonis flexuosa NC* *Allocasuarina fraseriana NS* *Allocasuarina torulosa N* *Banksia grandis NC* *Banksia menziesii NCS* *Callistemon 'kps' N* *Callistemon viminalis 'captain cook' NC* *Casuarina cunninghamiana NC* *Casuarina equisetifolia ssp.equisetifolia N* *Corymbia citriodora N* *Corymbia maculata NC* *Eucalyptus gomphocephala NCS* *Eucalyptus nicolli N* *Eucalyptus sideroxylon N* *Lophostemon confertus N* *Melaleuca lanceolata N* *Melaleuca quinquinervia N* *Melaleuca rhaphiophylla N* *Brachychiton populensis* *Lagunaria patersonii*	*Acmena smithii NC* *Allocasuarina torulosa N* *Corymbia citriodora N* *Corymbia maculata NC* *Eucalyptus nicolli N* *Eucalyptus gomphocephala NSC* *Eucalyptus sideroxylon N* *Eucalyptus torquata N* *Eucalyptus todtiana NC* *Melaleuca lanceolata N* *Melaleuca quinquinervia N* *Melaleuca rhaphiophylla N* *Harpephylum caffrum* *Hibiscus tiliaceus* *Metrodsideros excelsa* *Olea europaea* *Platanus x acerifolia* *Pyrus ussuriensis* *Ulmus parvifolia*	*Banksia ilicifolia NC* *Banksia littoralis NC* *Corymbia ficifolia NC* *Melaleuca preissiana N* *Melaleuca quinquinervia N* *Melaleuca rhaphiophylla N* *Xanthorrhoea preissi NSC (grouped in 3-5)*	*FUTURE WORKS*
TREE - FEATURE	*Araucaria heterophylla C (grouped in 3-5)* *Lagunaria patersonii* *Ficus macrophylla N* *Ficus rubiginosa N* *Xanthorrhoea preissi NCS*	*Araucaria heterophylla C (grouped in 3-5)* *Corymbia ficifolia NC* *Eucaluptus caesia N* *Ficus rubiginosa N* *Pinus pinaster*	*Araucaria heterophylla C (grouped in 3-5)* *Banksia menziesii NCS* *Brachychiton populensis* *Corymbia ficifolia NC* *Delonix regia* *Ficus microcarpa var. Hillii* *Liquidambar styraciflua* *Xanthorrhoea preissi NSC*	- N/A -	*FUTURE WORKS*
TREE - HOLLOW	*Agonis flexuosa NC* *Allocasuarina equestifolia N* *Casuarina cunninghamiana NC* *Eucalyptus gomphocephala NCS* *Melaleuca lanceolata N*	*Agonis flexuosa NC* *Allocasuarina equestifolia N* *Casuarina cunninghamiana NC* *Casuarina equisetifolia ssp.equisetifolia N* *Casuarina equisetifolia ssp. Incana N* *Eucalyptus gomphocephala NCS* *Melaleuca lanceolata N* *Melaleuca quinquinervia N* *Melaleuca rhaphiophylla N*	*Allocasuarina equestifolia N* *Casuarina cunninghamiana NC* *Casuarina equisetifolia ssp.equisetifolia N* *Casuarina equisetifolia ssp. Incana N* *Eucalyptus gomphocephala NCS* *Melaleuca lanceolata N* *Melaleuca quinquinervia N* *Melaleuca rhaphiophylla N*	- N/A -	*FUTURE WORKS*
KEY SHRUBS	*Carpobrotus edulis* *Acacia lasiocarpa* *Olearia axillaris N*	*Leucophyta brownii* *Eremophila glabra Kalbarri Carpet N* *Grevillea ' Lemon Supreme'*	*Grevillea crithmifolia* *Conostylis candicans* *Acacia saligna – dwarf 'Springtime Cascade' NCS*	*Ficinia nodosa* *Lepidosperma gladiatum* *Lomandra maritima*	*FUTURE WORKS*

07

DELIVERING THE MASTER PLAN

Precincts

‘Villaging’ is a Lend Lease design process and outcome that can be described as “... a small project within a large project”.

Within South Alkimos Beach there is proposed to be six (6) Village or Precincts. These range between premium, high, mid and entry level of embellishment. In principle, proximity of a precinct to the beach is the main defining aspect to its level of embellishment and market sector. Villages or Precincts have their own distinct identity articulated through built form, open space and streetscape design. The landscape design must provide distinctiveness and differentiation to each Precinct neighbourhood and is seen as essential in defining a successful outcome.

To achieve this four ‘palettes’ defined in the Vision +Principle document are used to guide the selection of:

/ Colour
/ Materials
/ Planting and
/ Form

At the time of preparation of this Master Plan Precinct One was the only precinct to gain clear character definition through the ‘Precinct Statement’. A statement will be prepared for each precinct as required. Images shown with transparency indicate that character is to be defined in future precinct stages.

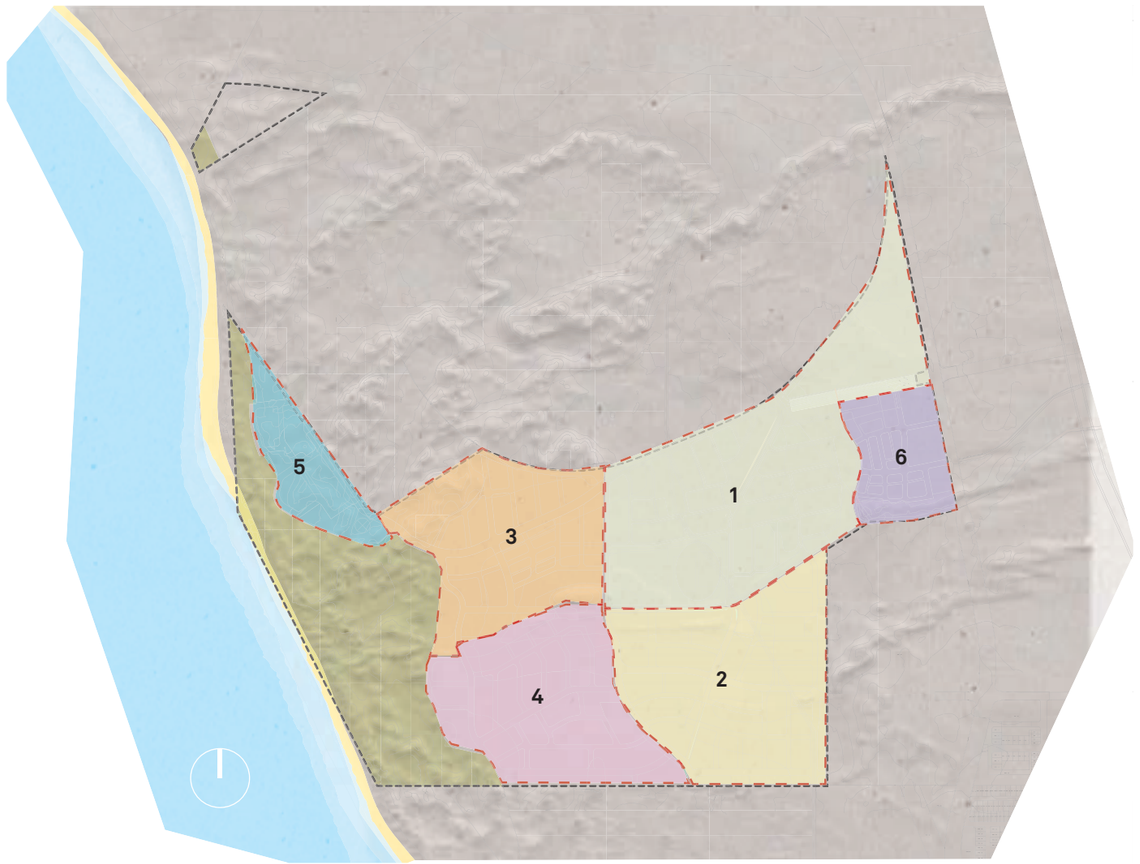
Colour Palette - Precincts

As established in the Alkimos Beach Landscape Vision and Design Principles report the colour palettes will be allocated to the proposed Precincts through the combination and use of complimentary colours and colours selected from site. The result is a set of unique palette for each Precinct that are sympathetic to site yet inclusive of the Alkimos identity.

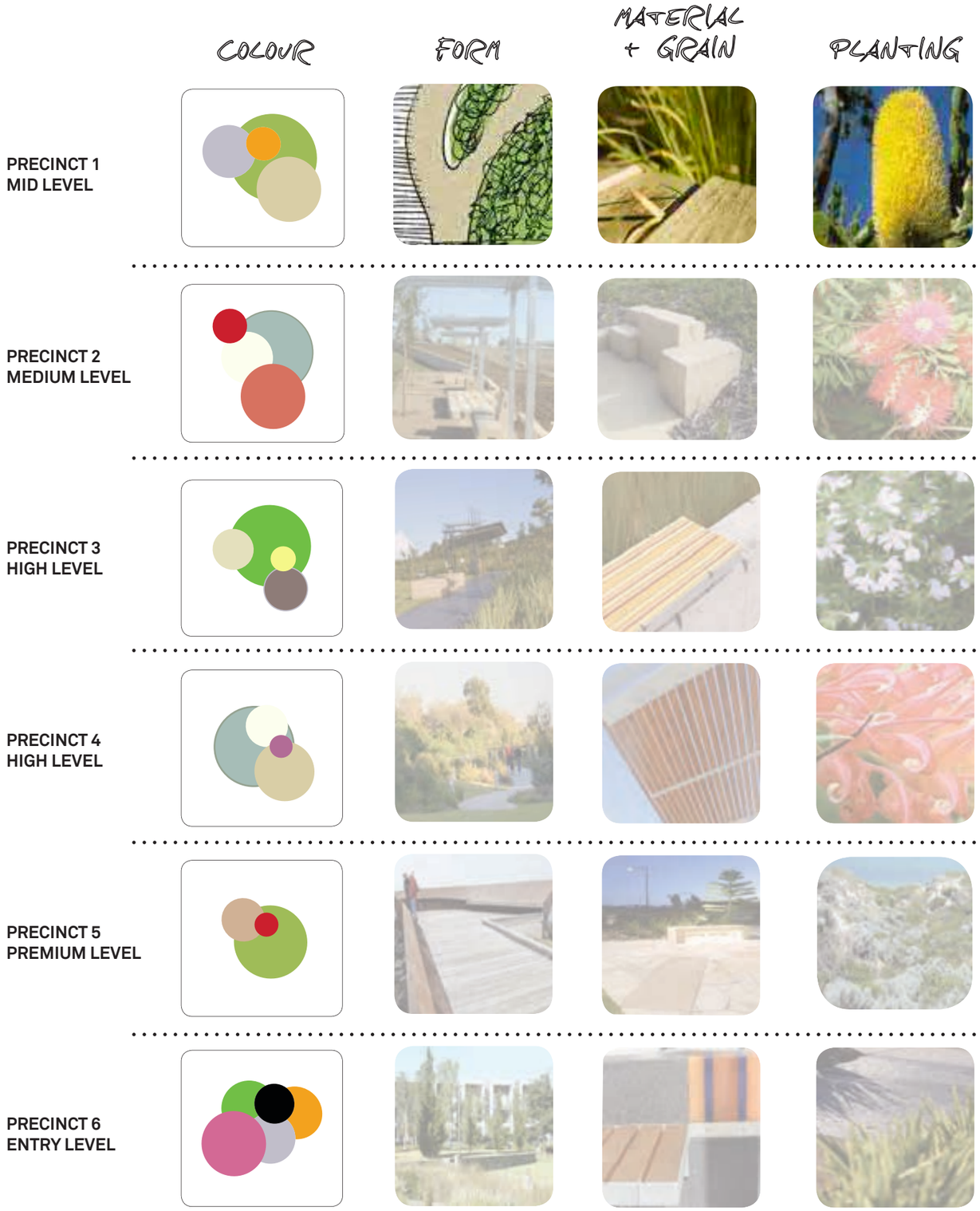
Colour palettes for each Precinct will then inform selection of:

/ Plant material (predominant leaf or flower colour),
/ Hard materials and
/ Colour treatment to selected landscape components such as shelters, furniture and others types of built items.

PROPOSED PRECINCTS



PRECINCT 1 - MID LEVEL
PRECINCT 2 - MID LEVEL
PRECINCT 3 - HIGH LEVEL
PRECINCT 4 - HIGH LEVEL
PRECINCT 5 - PREMIUM LEVEL
PRECINCT 6 - URBAN LEVEL



NOTE: Transparent images indicate definition required at future Precinct stages and design.

Delivering the Master Plan

The LMP for South Alkimos illustrates a site-specific design response for the new development. Delivery in response to variations within the character of the landscape will assist in the creation of variety within the district, between the coastal, neighbourhood and urban character zones of the site, and the different precincts which will be the focus for local community identity within the broader landscape.

Concurrent with the production of this LMP has been the analysis of a Whole of Life (WOL) cost opinion for South Alkimos. The master plan and the WOL cost opinion will be used in the next stages in the delivery of the South Alkimos landscape that includes:

- Finalisation of the Unique Landscape Components + Precinct Character Guides (Precinct One example shown below)
- Confirmation of Precinct Statement – Precinct 1
- The confirmation of the extent of works for Precinct 1
- Confirmation of the number of sub stage breakdowns
- Development of concept designs for POS and typical streets
- Setting of the construction budget for Precinct 1
- Proceeding with design development and documentation

Future Precincts will follow suite. At each step of the design and delivery process, the landscape architects will refer back to this LMP and the Landscape Vision and Design Principles document to ensure the creation of a family of distinctive landscapes sharing consistent typologies that are specific to the natural character of South Alkimos and the wider Alkimos Beach areas.

EXAMPLE
PRECINCT 1 UNIQUE LANDSCAPE COMPONENTS + CHARACTER GUIDE

A

APPENDICES

Appendix A: South Alkimos Streets - Plans & Sections

Appendix B: South Alkimos Street Edge Typologies

Appendix C: South Alkimos Street Planting Images

Appendix A: South Alkimos Streets - Plans & Sections

1.1 Integrator A

LOCATION PLAN

LANDSCAPE STREET TYPE					
Special Streets - Urban					
URBAN THOROUGHFARE TYPE					
Integrator A					
PLANTING	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**PLANTING PATTERN**	**NOTE**
Median tree	*Eucalyptus gomphocephala*	Tuart	15-20m	Copsed	
	Eucalyptus maculata	Spotted gum	15-20m	Copsed	
	Eucalyptus sideroxylon	Red Iron Bark	15-20m	Copsed	
Verge Tree	*Liquidambar styraciflua*	Liquidambar	25m	Formal	Locates at inside verge
	Maleleuca lanceolata	Rottnest Island Teatree	8-10m	Formal	Locates at outside/inside verge
Median shrub	*Xanthorrhoea preissii*	Grass tree	2m	3 to 5+ grouped	Located at feature points only
Verge shrub	*TBC*				
Features at Roundabout	*Araucaria heterophylla*	Norfolk Island pine	25-30m	3 to 5 grouped	

EUCALYPTUS GOMPHOCEPHALA

EUCALYPTUS SIDEROXYLON

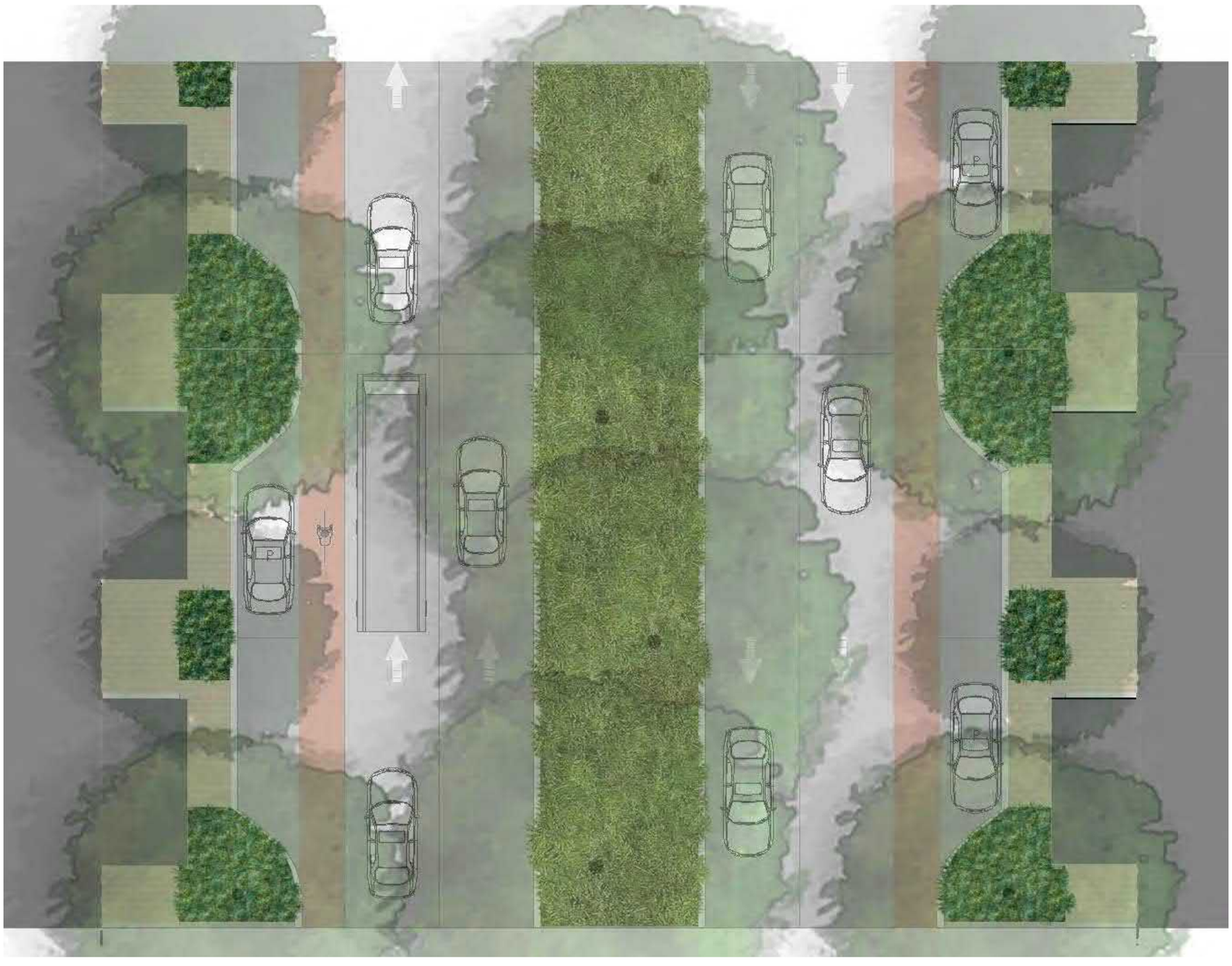
ARAUCARIA HETEROPHYLLA

LIQUIDAMBAR STYRACIFLUA

MALELEUCA LANCEOLATA

XANTHORRHOEA PREISSII

TYPICAL SECTION



TYPICAL PLAN

1.2 Integrator B

LOCATION PLAN

Note: Dashed indicates future exploration of strategy from Precinct 1 to remainder of South Alkimos.

LANDSCAPE STREET TYPE					
Beach Connector - Neighbourhood					
URBAN THOROUGHFARE TYPE					
Integrator B					
PLANTING	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**PLANTING PATTERN**	**NOTE**
Median tree	*Eucalyptus gomphocephala*	Tuart	15-20m	Copsed	
Verge tree	*Corymbia ficifolia*	Red flowing gum		Formal	
	Casuarina equisetifolia ssp. equisetifolia	Horse Tail Sheoak	6-8 m	Copsed	
Median shrub	*TBC*				
Verge shrub	*TBC*				
Features at Roundabout	*Araucaria heterophylla*	Norfolk Island pine	25-30m	3 to 5 grouped	

EUCALYPTUS GOMPHOCEPHALA

CORYMBIA FICIFOLIA

CASUARINA EQUISETIFOLIA

ARAUCARIA HETEROPHYLLA

TYPICAL SECTION

TYPICAL PLAN

1.3 Integrator C

LOCATION PLAN

Note: Dashed indicates future exploration of strategy from Precinct 1 to remainder of South Alkimos.

LANDSCAPE STREET TYPE					
Beach Bus Route - Neighbourhood					
URBAN THOROUGHFARE TYPE					
Integrator C					
PLANTING	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**PLANTING PATTERN**	**NOTE**
Median tree	*Eucalyptus gomphocephala*	Tuart	15-20m	Copsed	
	Eucalyptus utilis	Coastal Moort	5-10 m	Dense Copsed	Screening, wind shelter street tree or companion for larger trees.
Verge tree	*Allocasuarina fraseriana*	Western Sheoak	12-15m	Formal	
	Corymbia maculata	Spotted gum	15-20m	Copsed	
Median shrub	*TBC*				
Verge shrub	*TBC*				

EUCALYPTUS GOMPHOCEPHALA

EUCALYPTUS UTILIS

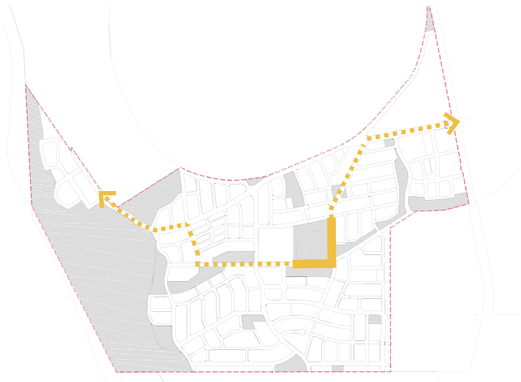
ALLOCASUARINA FRASERIANA

CORYMBIA MACULATA

TYPICAL SECTION

TYPICAL PLAN

1.4 Integrator D



LOCATION PLAN

Note: Dashed indicates future exploration of strategy from Precinct 1 to remainder of South Alkimos.

LANDSCAPE STREET TYPE					
Beach Bus Route - Neighbourhood					
URBAN THOROUGHFARE TYPE					
Integrator D					
PLANTING	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**PLANTING PATTERN**	**NOTE**
Median tree	*Eucalyptus gomphocephala*	Tuart	15-20m	Copsed	
	Eucalyptus utilis	Coastal Moort	5 - 10 m	Dense Copsed	Screening, wind shelter street tree or companion for larger trees.
Verge tree	*Allocasuarina fraseriana*	Western Sheoak	12-15m	Formal	
	Corymbia maculata	Spotted gum	15-20m	Copsed	
Median shrub	*TBC*				
Verge shrub	*TBC*				
Features at Roundabout	*Araucaria heterophylla*	Norfolk island pine	25-30m	3 to 5 grouped	

EUCALYPTUS GOMPHOCEPHALA

EUCALYPTUS UTILIS

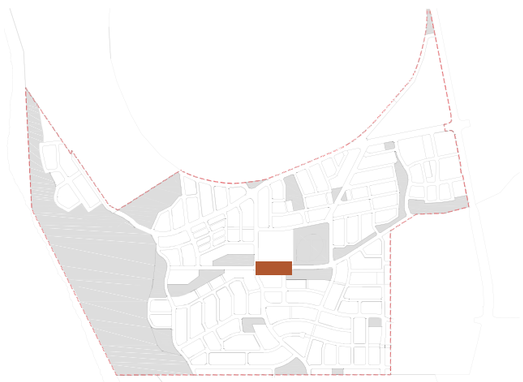
ALLOCASUARINA FRASERIANA

CORYMBIA MACULATA

TYPICAL SECTION

TYPICAL PLAN

1.5 Integrator E



LOCATION PLAN

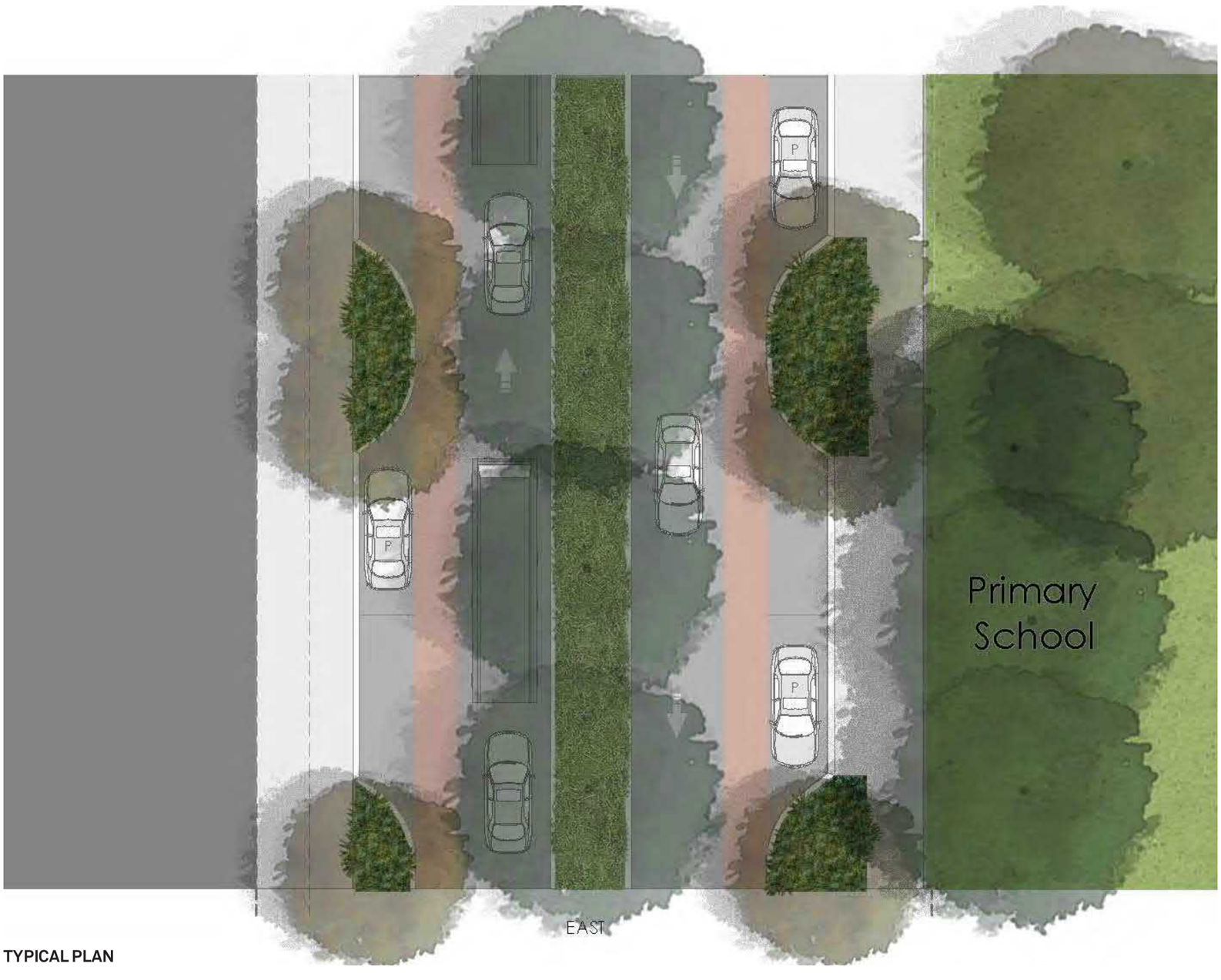
LANDSCAPE STREET TYPE					
Special Streets - Neighbourhood					
URBAN THOROUGHFARE TYPE					
Integrator E					
PLANTING	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**PLANTING PATTERN**	**NOTE**
Median tree	*Eucalyptus gomphocephala*	Tuart	15-20m	Copsed	
	Eucalyptus utilis	Coastal Moort	5 -10 m	Dense Copsed	Screening, wind shelter street tree or companion for larger trees.
Verge tree	*Maleleuca lanceolata*	Rottnest Island Teatree	8-10m	Formal	
Median shrub	*TBC*				
Verge shrub	*TBC*				

EUCALYPTUS GOMPHOCEPHALA

MALELEUCA LANCEOLATA

EUCALYPTUS UTILIS

TYPICAL SECTION



TYPICAL PLAN

1.6 Neighbourhood Connector A

LOCATION PLAN

Note: Dashed indicates future exploration of strategy from Precinct 1 to remainder of South Alkimos.

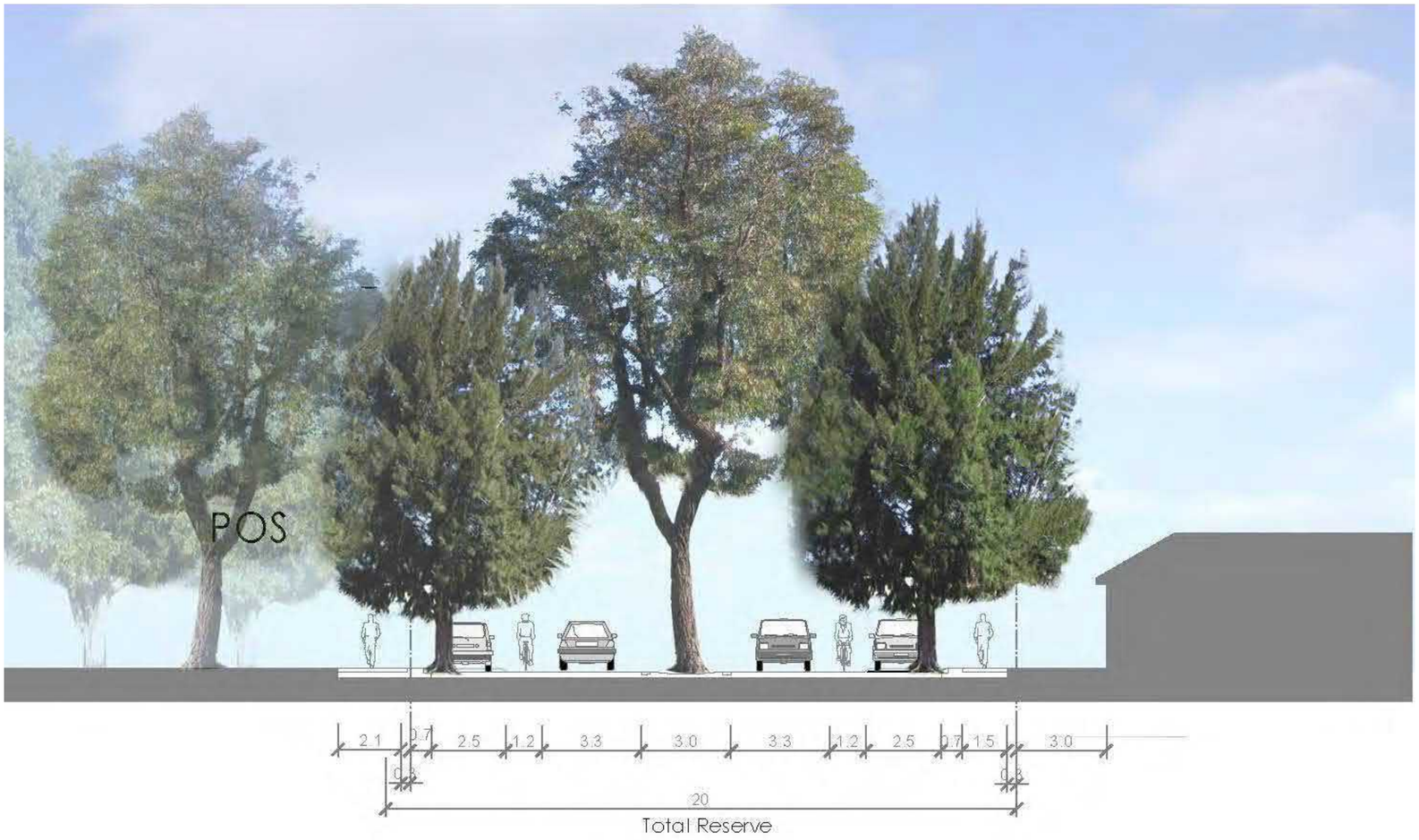
LANDSCAPE STREET TYPE					
Precinct Connector - Neighbourhood					
URBAN THOROUGHFARE TYPE					
Neighbourhood Connector A					
PLANTING	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**PLANTING PATTERN**	**NOTE**
Median tree	*Eucalyptus sideroxylon*	Red Ironbark	15-20m	Copsed (2s / 3s)	1. Large spacing to allow for views 2. Normal spacing
	Eucalyptus gomphocephala	Tuart	15-20m	Copsed	1. Large spacing to allow for views 2. Normal spacing
Verge tree	*Casuarina equisetifolia*	Beach Sheoak	15-20m	Formal	1. Large spacing to allow for views
	Allocasuarina fraseriana	Western Sheoak	2-15m	Formal	1. Large spacing to allow for views
Median shrub	*Xanthorrhoea preissii*	Grass tree	2m	3 to 5+ grouped	Located at feature points only
Verge shrub	*TBC*				

EUCALYPTUS GOMPHOCEPHALA

EUCALYPTUS UTILIS

CASUARINA EQUISETIFOLIA

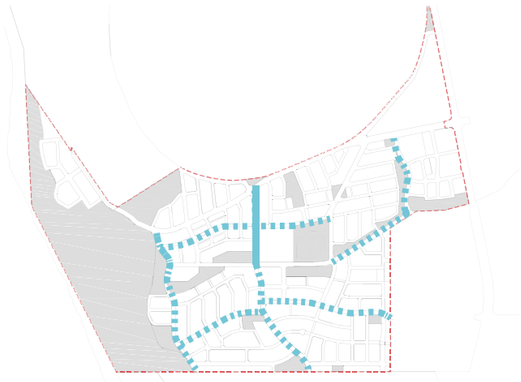
ALLOCASUARINA FRASERIANA



TYPICAL SECTION

TYPICAL PLAN

1.7 Neighbourhood Connector B



LOCATION PLAN

Note: Dashed indicates future exploration of strategy from Precinct 1 to remainder of South Alkimos.

LANDSCAPE STREET TYPE					
Precinct Connector - Coastal					
URBAN THOROUGHFARE TYPE					
Neighbourhood Connector B					
PLANTING	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**PLANTING PATTERN**	**NOTE**
Median tree	*Eucalyptus gomphocephala*	Tuart	15-20m	Copsed	
	Eucalyptus utilis	Coastal Moort	5 - 10m	Dense Copsed	
Verge tree	*Casuarina equisetifolia*	Beach Sheoak	15-20m	Formal	
	Agonis flexuosa	Swan River Peppermint	8-10m	Formal	
Median shrub	*TBC*				
Verge shrub	*TBC*				

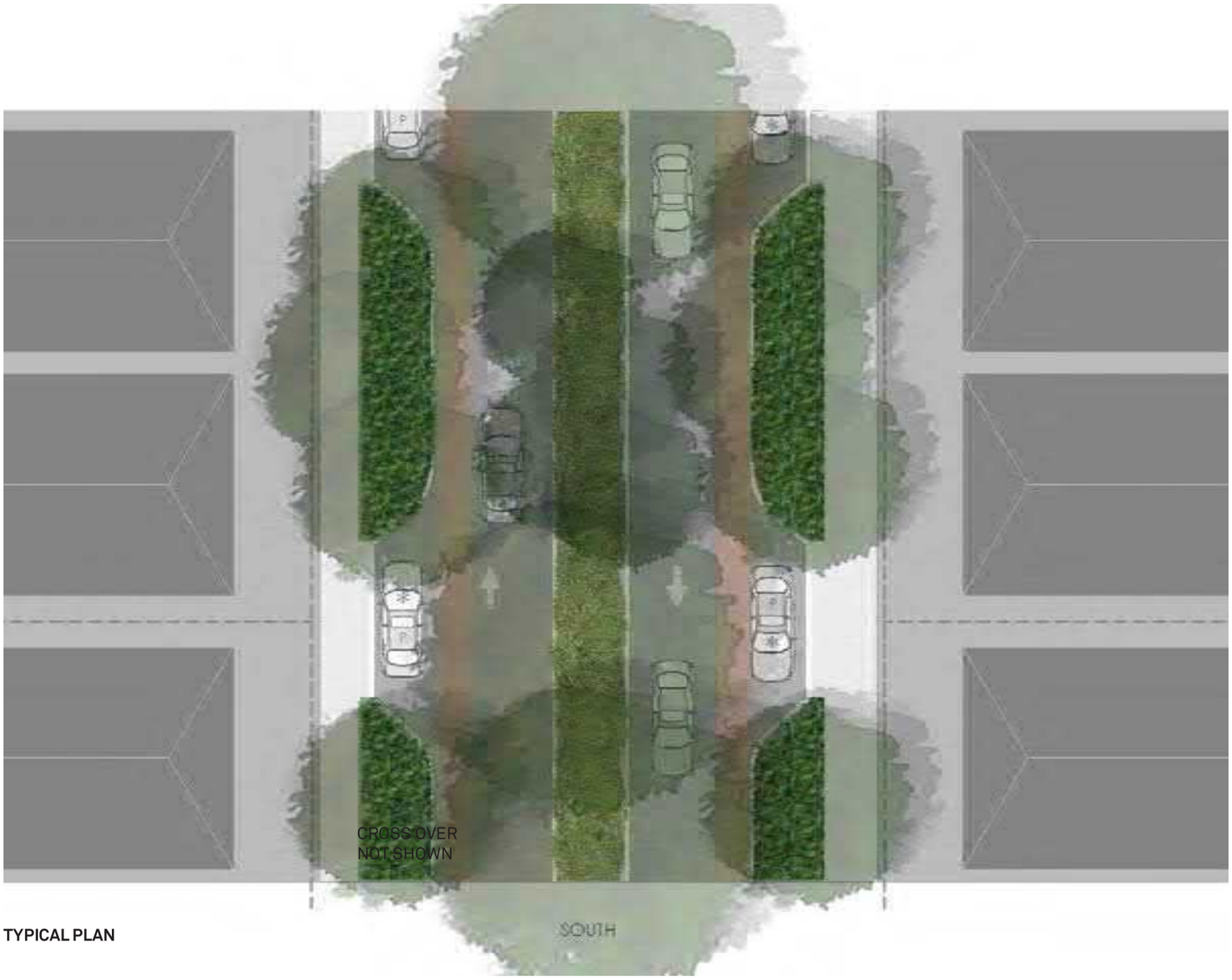
EUCALYPTUS GOMPHOCEPHALA

EUCALYPTUS UTILIS

CASUARINA EQUISETIFOLIA

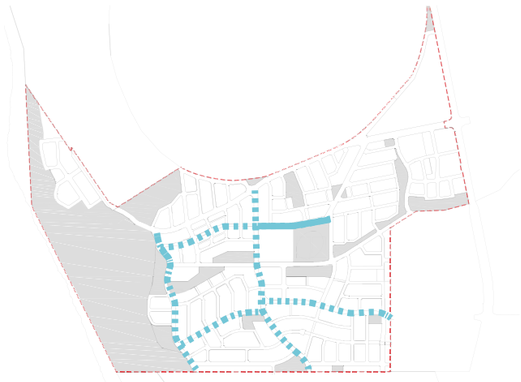
AGONIS FLEXUOSA

TYPICAL SECTION



TYPICAL PLAN

1.8 20m Local Access Street A



LOCATION PLAN

Note: Dashed indicates future exploration of strategy from Precinct 1 to remainder of South Alkimos.

LANDSCAPE STREET TYPE					
Precinct Connector - Neighbourhood					
URBAN THOROUGHFARE TYPE					
20m Local Access Street A					
PLANTING	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**PLANTING PATTERN**	**NOTE**
Median tree	*Agonis flexuosa*	Swan River Peppermint	8-10m	Formal	
Verge tree	*Agonis flexuosa*	Swan River Peppermint	8-10m	Formal	
Median shrub	*TBC*				
Verge shrub	*TBC*				

AGONIS FLEXUOSA

TYPICAL SECTION

TYPICAL PLAN

1.8 20m Local Access Street B

LOCATION PLAN

Note: Dashed indicates future exploration of strategy from Precinct 1 to remainder of South Alkimos.

LANDSCAPE STREET TYPE					
POS Connector - Neighbourhood					
URBAN THOROUGHFARE TYPE					
20m Local Access Street B					
PLANTING	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**PLANTING PATTERN**	**NOTE**
Verge tree	*Corymbia ficifolia*	Red flowing gum		Formal	Inside pathway
	Melaleuca quinquinervia	Broaf Leaf Paperbark	10m	Copsed	Outside pathway
	Banksia littoralis	Swamp banksia	10 m	Copsed	Placed to widened verge for rain garden features
	Melaleuca preissiana	Modong	4 - 10 m	Copsed	Placed to verge between kerb and pathway as rain garden features
Median shrub	*N/A*				Placed to verge between kerb and pathway as rain garden features
Verge shrub	*TBC*				
Feature tree	*Pinus pinaster*	Pinaster Pine	20- 30 m	Grouped	Assist way finding and placed to terminate pathways to 'green streets' that link parks

CORYMBIA FICIFOLIA

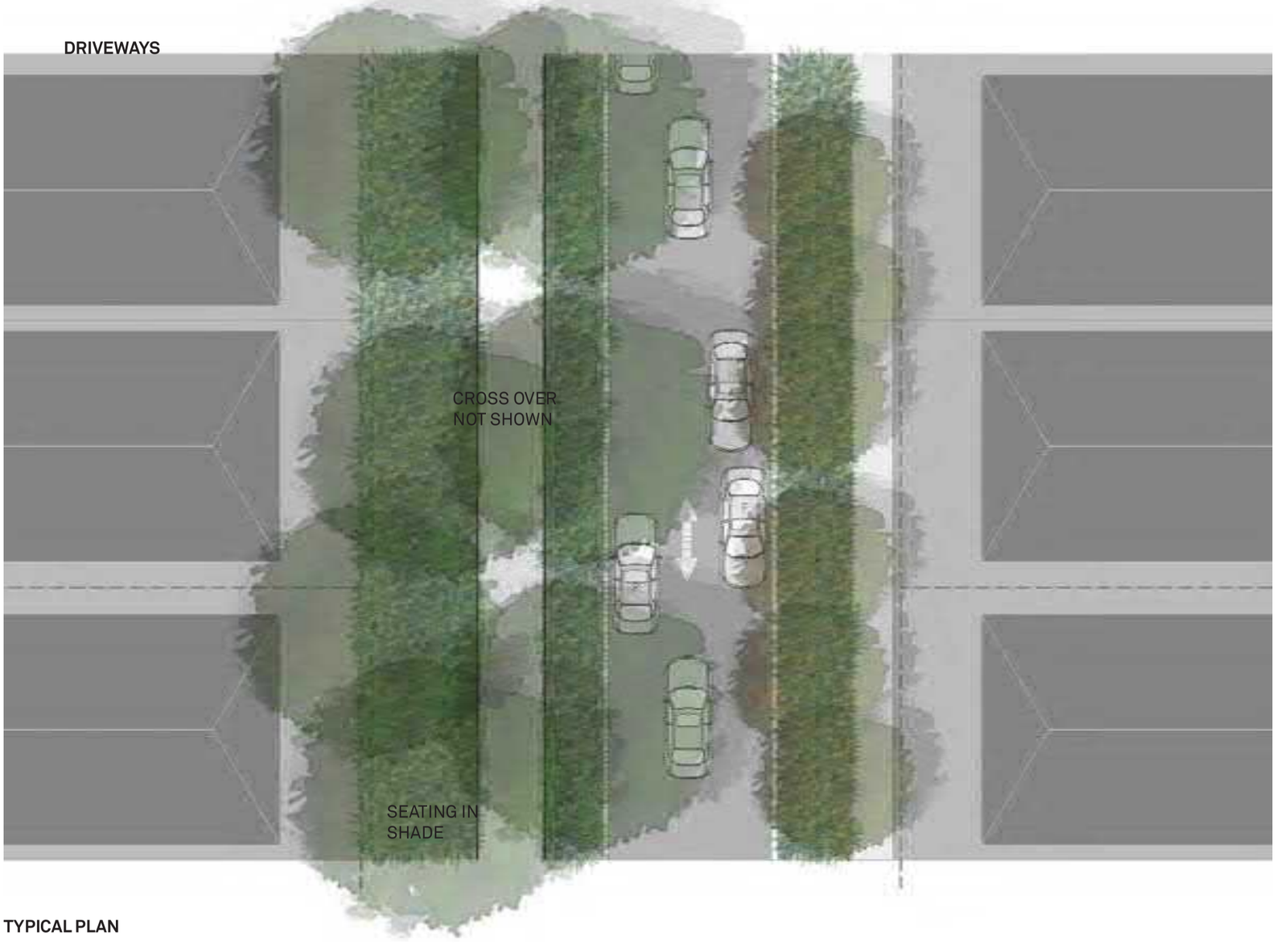
MELALEUCA QUINQUINERVIA

BANKSIA LITTORALIS

MELALEUCA PREISSIANA

TYPICAL SECTION

DRIVEWAYS



TYPICAL PLAN

Appendix B: South Alkimos Tree Images

KEY FOR INDICATIVE LOCATION

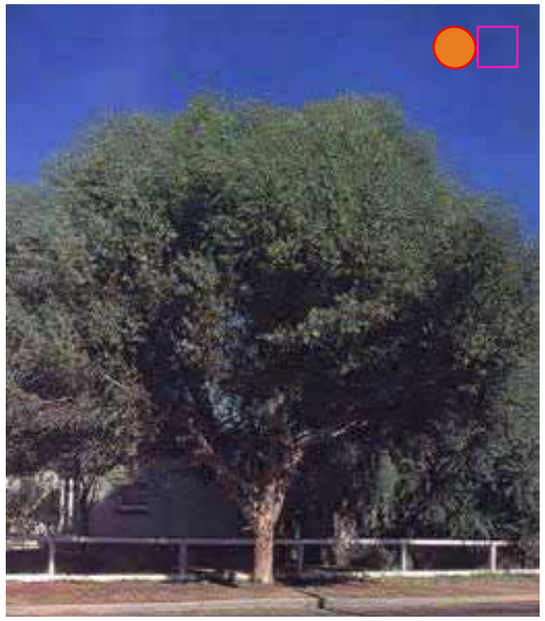
Street Tree

Park Tree

COASTAL TREES - GENERAL

Agonis flexuosa

Casuarina cunninghamiana



Eucalyptus utilis

Lagunaria patersonii

Metrosideros excelsa

Callitris preissii

Casuarina equesitifolia ssp. incana

Eucalyptus gomphocephala

Melaleuca lanceolata

KEY FOR INDICATIVE LOCATION

Street Tree

Park Tree

COASTAL TREES -FEATURE

Araucaria heterophylla

Lagunaria patersonii

Phoenix canariensis - limited use / accent only

Pinus pinaster

Ficus macrophylla

Acacia saligna

Washingtonia filifera - limited use / accent only

KEY FOR INDICATIVE LOCATION

Street Tree

Park Tree

COASTAL TREES - HOLLOW

Agonis flexuosa

Casuarina cunninghamiana

Melaleuca lanceolata

Allocasuarina equestifolia

Eucalyptus gomphocephala

KEY FOR INDICATIVE LOCATION

Street

Park

COASTAL SHRUBS

Acacia lasiocarpa

Olearia axillaris

Carpobrotus edulis

KEY FOR INDICATIVE LOCATION

Street Tree

Park Tree

NEIGHBOURHOOD TREES - GENERAL

Agonis flexuosa

ALLOCASUARINA TORULOSA

BANKSIA MENZIESII

Eucalyptus sideroxlon

ALLOCASUARINA FRASERIANA

Banksia grandis

Callistemon Kings Park Special

Eucalyptus gomphocephala

Corymbia citriodora

KEY FOR INDICATIVE LOCATION

- Street Tree
- Park Tree

Corymbia maculata

Brachychiton populenis

Casuarina equesitifolia ssp.equesitifolia

Casuarina cunninghamiana

Melaleuca rhaphiophylla

Lophostemon confertus

Melaleuca quinquinervia

Hakea laurina

Lagunaria patersonii

Eucalyptus nicolli

KEY FOR INDICATIVE LOCATION

Street Tree

Park Tree

NEIGHBOURHOOD TREES - FEATURE

Ficus macrophylla

Eucalyptus caesia

Callistemon viminalis

Pinus pinaster

Corymbia ficifolia

Ficus rubiginosa

Pinus pinaster

KEY FOR INDICATIVE LOCATION

Street Tree

Park Tree

NEIGHBOURHOOD TREES - HOLLOW

Agonis flexuosa

Melaleuca lanceolata

Melaleuca rhaphiophylla

Allocasuarina equesitifolia

Casuarina equesitifolia ssp. equesitifolia

Eucalyptus gomphocephala

Melaleuca quinquinervia

Casuarina cunninghamiana

KEY FOR INDICATIVE LOCATION

Street

Park

NEIGHBOURHOOD SHRUBS

Leucophyta brownii

Grevillea ‘LEMON SUPREME’

Eremophila glabra KALBARRI CARPET

KEY FOR INDICATIVE LOCATION

Street Tree

Park Tree

URBAN TREES - GENERAL

Acmena smithii

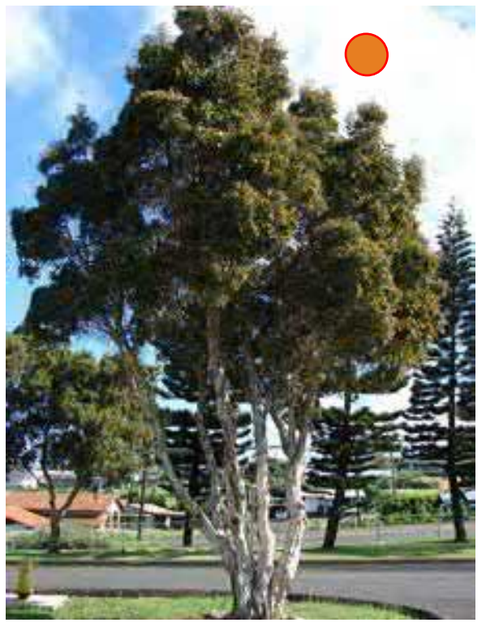
Corymbia maculata

Eucalyptus gomphocephala

Allocasuarina torulosa

Eucalyptus sideroxylon

Eucalyptus nicolli



Melaleuca quinquinervia

Melaleuca rhaphiophylla

Pyrus ussuriensis

KEY FOR INDICATIVE LOCATION

Street Tree

Park Tree

Eucalyptus torquata

Melaleuca lanceolata

Hibiscus tiliaceus

Ulmus parvifolia

Eucalyptus todtiana

Olea europaea

Platanus x acerifolia

Harpephylum caffrum

Metrodsideros excelsa

KEY FOR INDICATIVE LOCATION

Street Tree

Park Tree

URBAN TREES - FEATURE

Araucaria heterophylla

Brachychiton populensis

Corymbia ficifolia

Liquidambar styraciflua

Banksia menziessii

Corymbia maculata

Delonix regia

Ficus microcarpa var. hillii

KEY FOR INDICATIVE LOCATION

Street Tree

Park Tree

URBAN TREES - HOLLOW

Allocasuarina equestifolia

Casuarina equisetifolia ssp.equisetifolia

Eucalyptus gomphocephala

Melaleuca rhaphiophylla

Casuarina cunninghamiana

Casuarina obesa

Melaleuca lanceolata

Melaleuca quinquinervia

KEY FOR INDICATIVE LOCATION

Street Tree

Park Tree

URBAN SHRUBS

Grevillea crithmifolia

Conostylis candicans

Acacia saligna - dwarf 'springtime cascade'

KEY FOR INDICATIVE LOCATION

Street

Park

WSUD MEDIAN TREE & SHRUB

Banksia ilicifolia

Corymbia ficifolia

Melaleuca quinquinervia

Xanthorrhoea preissii

Melaleuca preissiana

Banksia littoralis

Melaleuca rhaphiophylla

Ficinia nodosa

Lepidosperma gladiatum

Lomandra maritima

Appendix C: South Alkimos Street Edge Typologies

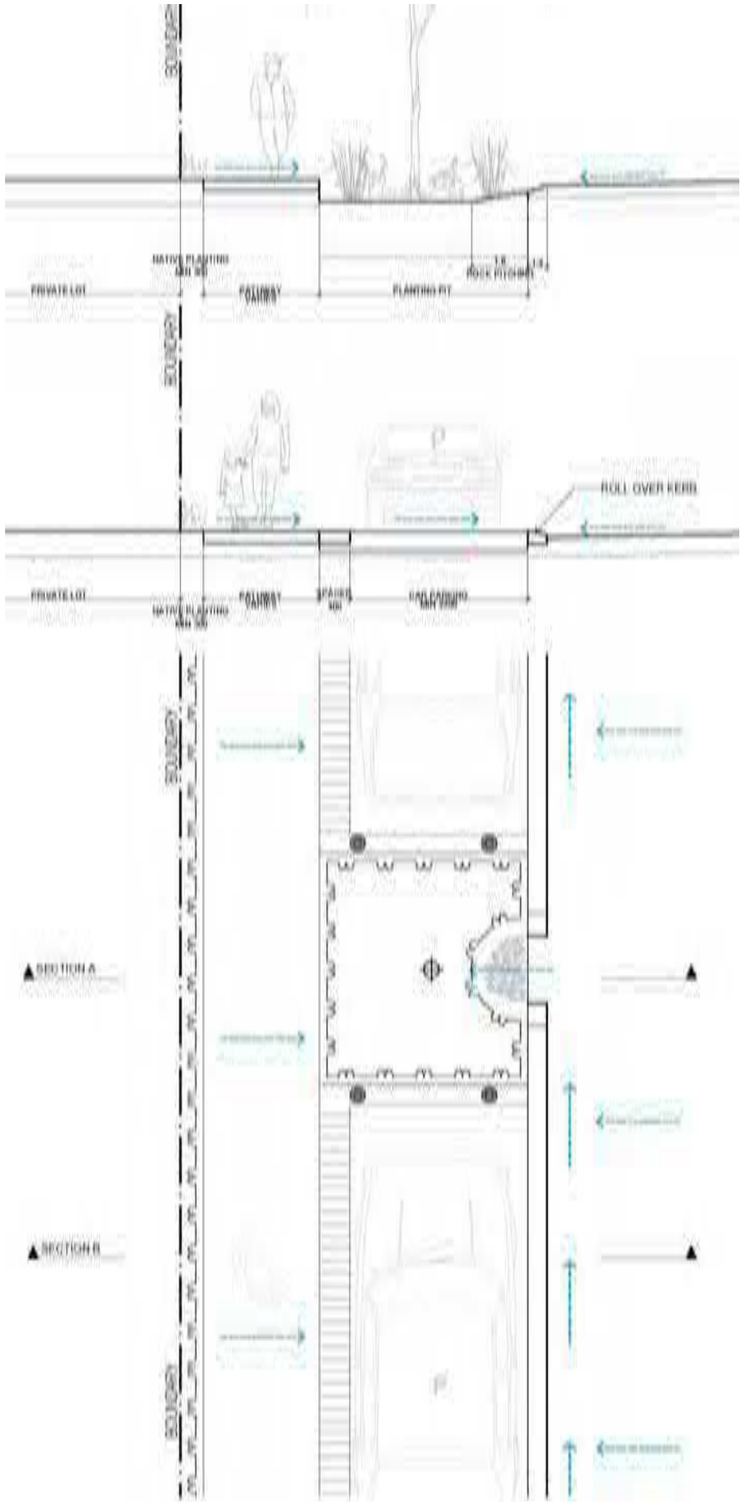
Indicative Edge Typologies

The four drawings shown define how the interaction of parking, kerbing, tree and shrub planting and drainage (passive irrigation) can be arranged in order to achieve streetscape character outcomes that reflect the transitional landscape character types of coastal, neighbourhood and urban.

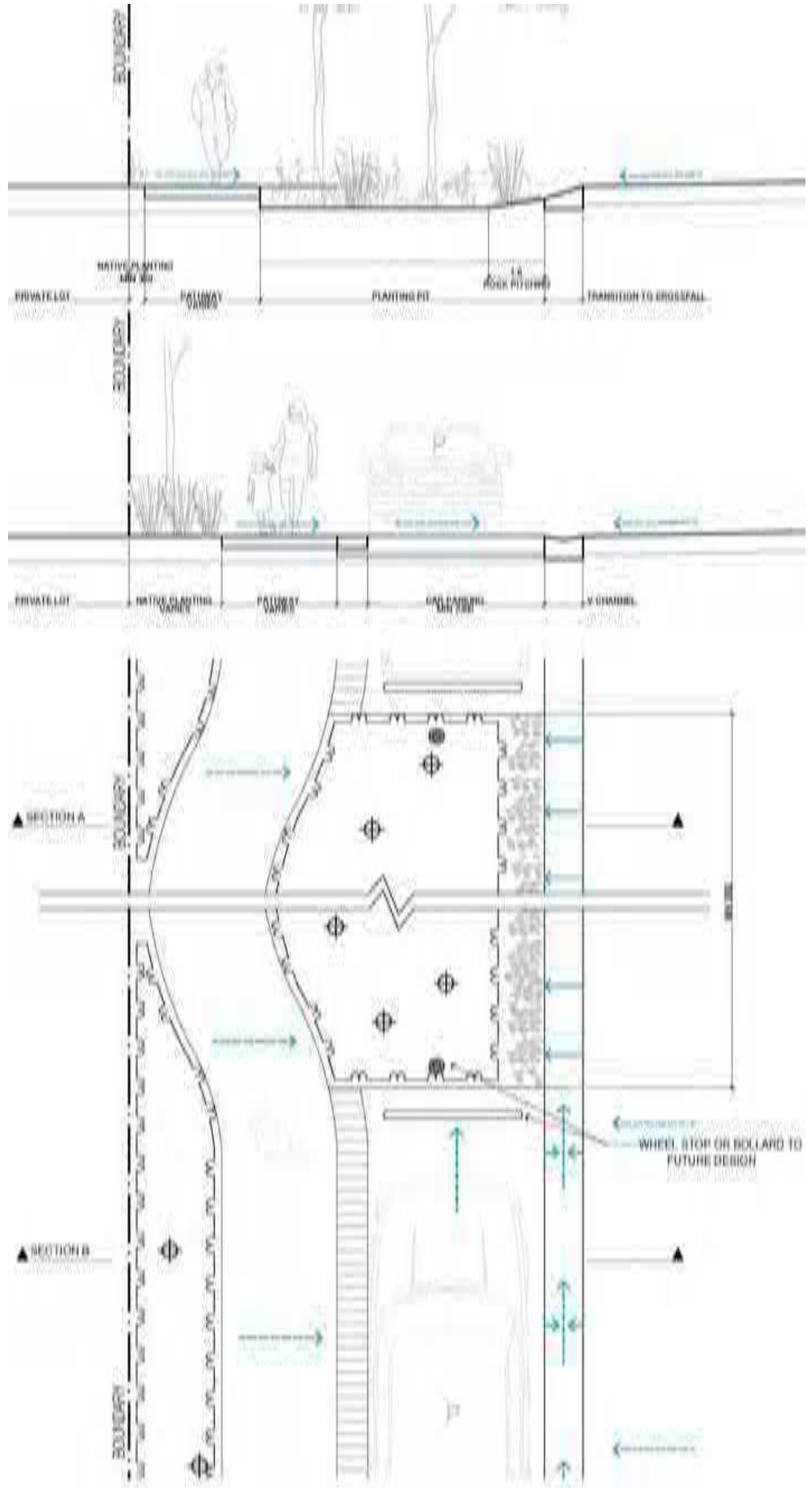
The drawings can be simply understood as a matrix of coastal to urban and raised kerb to flush kerb. For example the drawings shown indicate street edge conditions as follows:

- / Coastal road edge with raised kerb and
- / Coastal road edge with flush kerb and
- / Urban road edge with raised kerb
- / Urban road edge with flush kerb

Note these plans and sections are indicative only. They will be reviewed and coordinated further with the civil engineers during the next phases of work - detailed design.

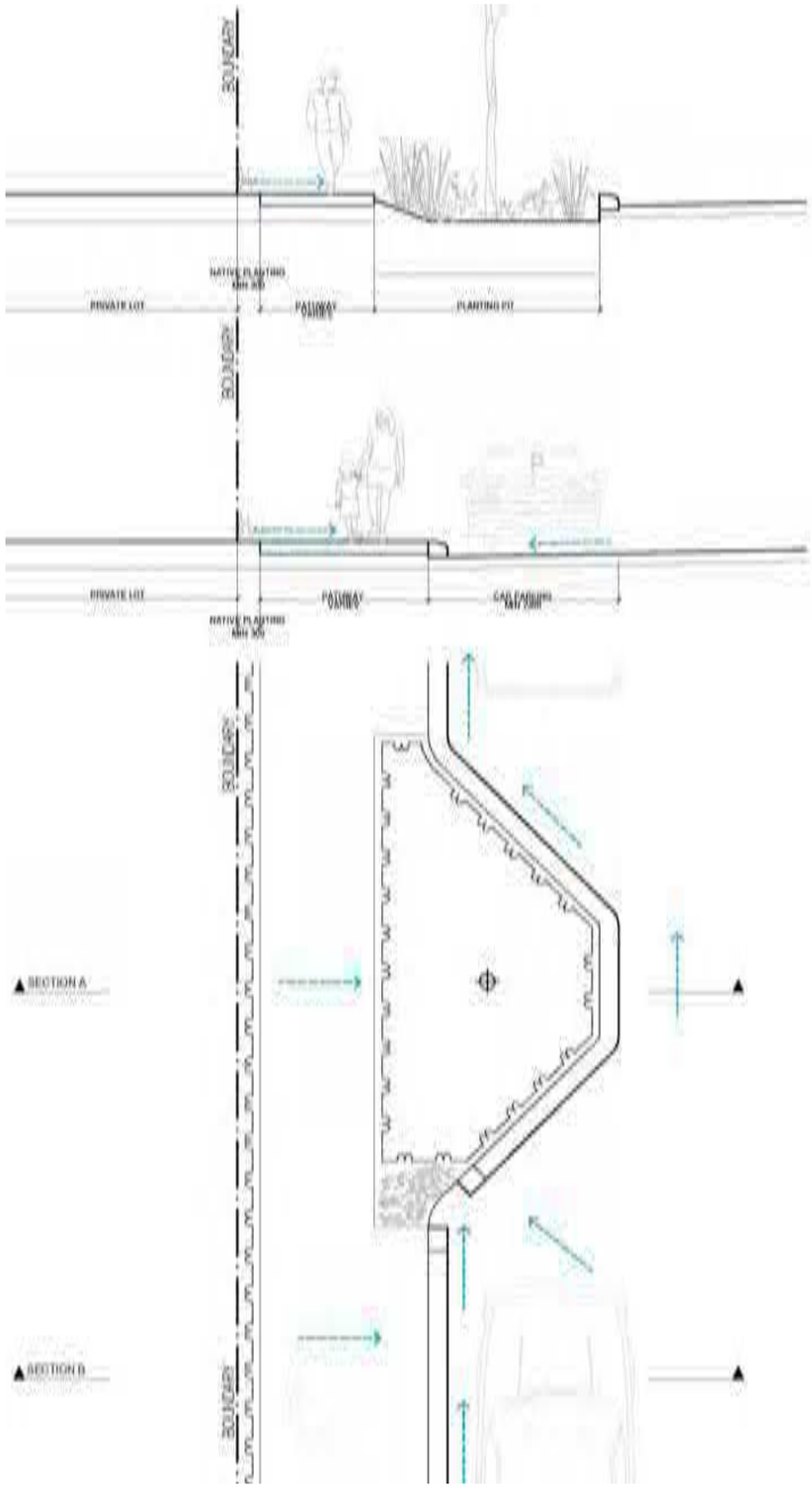


COASTAL ROAD EDGE WITH RAISED KERB

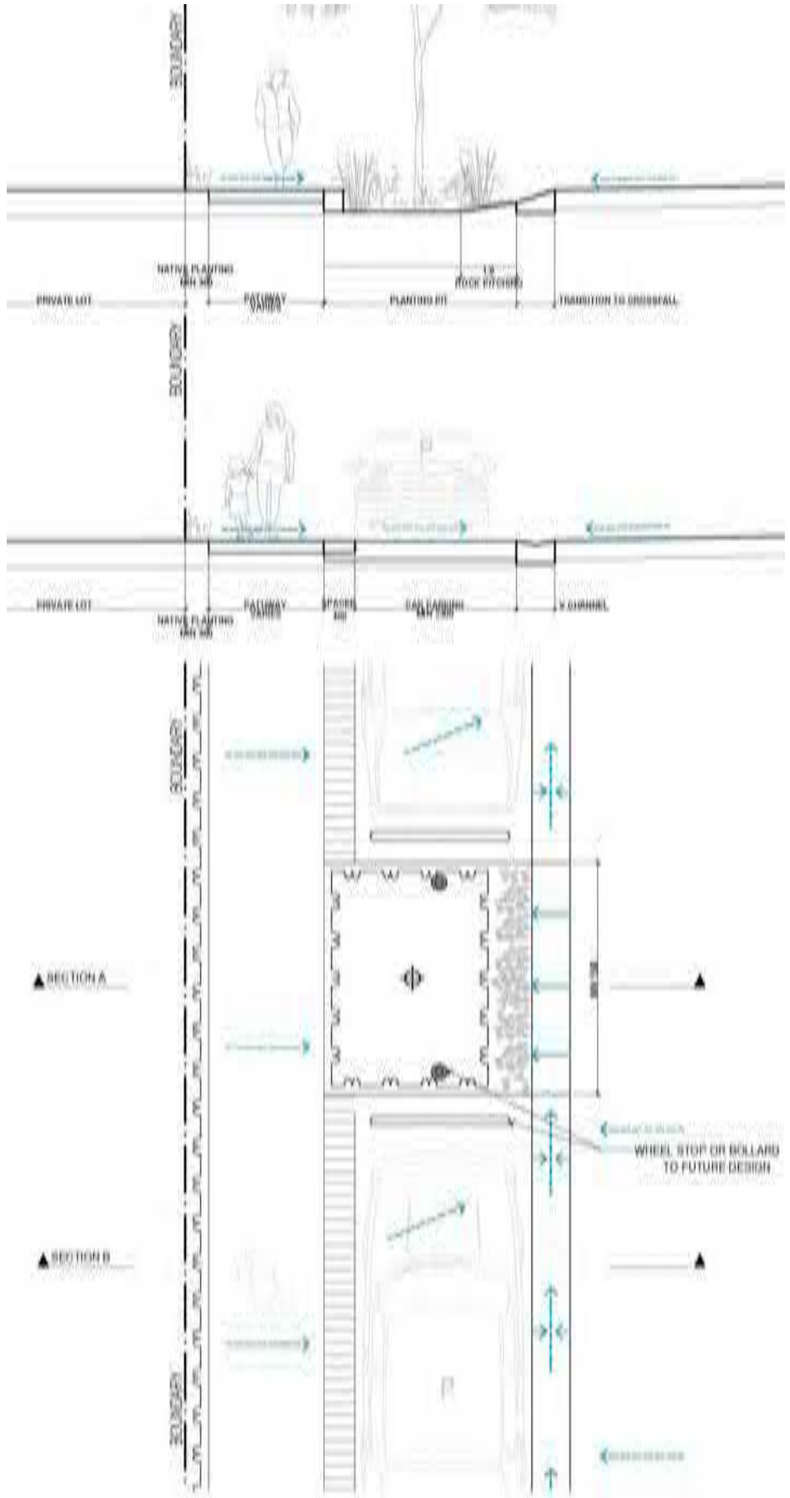


COASTAL ROAD EDGE WITH FLUSH KERB

NOTE: PLAN AND SECTION IS INDICATIVE ONLY. DURING DETAIL DESIGN FINAL LAYOUT WILL BE CONFIRMED



URBAN ROAD EDGE WITH RAISED KERB



URBAN ROAD EDGE WITH FLUSH KERB

NOTE: PLAN AND SECTION IS INDICATIVE ONLY. DURING DETAIL DESIGN FINAL LAYOUT WILL BE CONFIRMED

N

	PRECINCT 1	PRECINCT 2	PRECINCT 3	PRECINCT 4	COASTAL NODE	OTHER	TOTAL
Residential	19.0533	19.9861	19.9799	20.1113	1.5938		80.7244
Commercial	2.0962	1.0014	0.766	0	0.2845		4.1481
Mixed Use	0.2117	0.1294	0.6484	0	1.1656		2.1551
Private Education	0	9.9018	0	0	0		9.9018
Public Education	3.51		0	0	0		3.51
Public Purposes	0	0.874	0.1207		0.1402		1.1349
Reserve For Recreation	8.3791	4.1742	3.7862	3.1696	0.8906		20.3997
Conservation Open Space	0	0	0	6.0125	0		6.0125
Regional Open Space	0	0	0	0	0	41.0761	41.0761
Proposed Regional Open Space						2.1231	2.1231
Balance of LC Land		0.1649					0.1649
Roads	17.0527	11.899	10.2339	11.3308	2.5752		53.0916
AREA TOTAL	**50.303**	**48.1308**	**35.5351**	**40.6242**	**6.6499**	**43.1992**	**224.4422**
RESIDENTIAL LOTS	494	526	508	532	48		2108
MIXED USE	10	6	2	0	8		26
COMMERCIAL	2	2	3	0	1		8
LOT TOTAL	**506**	**534**	**513**	**532**	**57**	**0**	**2142**
PART LOTS (NOT INCL. IN TOTAL)	0	0	0	0	11		11

DLL ALK RD1 238I commercial assessment (MAR 18) EXCEL DOC.

POS TABLE

POS Ref No.	AREA m²	PRECINCT
A	1966	1
B	16054	1
C	8140	1
D	921	1
E	2276	1
F	12658	1
F1	1071	1
F2 PAW	843	1
G	2425	2
I	6538	4
J	24877	3
K1	4230	3
K2	2847	2
L1	811	2
L2	499	2
M	14346	2
M2 PAW	442	2
N	1067	3
O	1818	3
P	12058	4
Q	5870	3
R	13100	4
S	20372	2
U	39862	1
V	4656	4-CNODE
V2	1513	4-CNODE
V3	2658	4-CNODE
V4	79	4-CNODE
	203997	

DLL ALK RD1 238H EXCEL DOC.

LEGEND

- PRECINCT BOUNDARIES
- PRECINCT 1
- PRECINCT 2
- PRECINCT 3
- PRECINCT 4
- COASTAL NODE

LANDCORP

DRAFT

robertsday.com.au

SIZE A1

1:4000 0 metres 40 80 120 160 200

TRAFFIC ENGINEERING DATA
SOURCE: C&W - 6016 futurebase.dwg
YYMMDD: 140812

CADASTRAL INFORMATION
SOURCE: WHELANS
YYMMDD: 140723
DWG REF: fp15205-034-r1.dwg
PROJECTION: PCG94

REV	DESCRIPTION	YYMMDD	DRAWN	APP'RD
I	LOTS MODIFIED - 5TH PRECINCT 4	180302	SB	-
H	PRECINCT 3 UPDATED PRE-CAL/TABLE UPDATED	180228	SB	-
G	PRECINCT 2 UPDATED PRE-CAL/TABLE UPDATED	180219	HH/SB	RD
F	PRECINCT 3 & 4 - DESIGN MODIFIED/ CALCS UPDATED	180213	SB	RD
E	PRECINCT 3 & 4 - DESIGN MODIFIED	180129	SB	-

COMMERCIAL ASSESSMENT (MARCH 2018)

Alkimos Beach

City of Wanneroo

REF NO.	DRAW NO.	REV.
DLL ALK	**RD1 238**	**I**

DISCLAIMER: ISSUED FOR DESIGN INTENT ONLY. ALL AREAS AND DIMENSIONS ARE SUBJECT TO DETAIL DESIGN AND SURVEY

NOTE: NOT TO BE LODGED FOR SUBDIVISION APPROVAL

Alkimos Beach - Native Trees and Shrubs

Carnaby's Black Cockatoo - Tracking Spreadsheet (vers. M-04_09

			PRECINCT 1				PRECINCT 2		PRECINCT 3			PRECINCT 4
CBC Parks Only (Cond 12a+12b)**			T+S all	T+S all	T+S all	T+S all	T+S all	T+S all	T+S all	T+S all	T+S all	T+S all
Botanical Name	**Common Name**	**Primary Feeding Plants for CBCs*#**	**Stage 1 - Park A CBC Park**	**Stage 3 & 4 excl streetscape (POS D only) CBC Park**	**Stage 10 -Park U excl streetscape (Fairy Pde)**	**Stage 7 - Park F CBC Park**	**Park G only ALL26 CBC Park**	**Park S ALL35 CBC Park**	**Park O CBC Park FUTURE*** **	**Park P CBC Park FUTURE*** **	**Park R CBC Park FUTURE*** **	**Park J CBC Park FUTURE*** (shows all plants for Park J)**
TREES												
Agonis flexuosa	WA Peppermint	Y	9		23	46	5	47	5	10	50	30
Allocasuarina fraseriana	Common Sheoak	N					13					
Allocasuarina littoralis	Black Sheoak / River Black Oak	N										
Angophora costata	Smooth Barked Apple	N										20
Araucaria columnaris	Cook Island Pine	N										
Araucaria heterophylla	Norfolk Island Pine	Y	6	2	2			9				
Banksia ashbyi	Ashby's Banksia	Y			1155				300		1,000	700
Banksia attenuata	Candlestick (Biara) Banksia	Y			29							
Banksia grandis	Bull Banksia	Y			19							
Banksia integrifolia	Coast Banksia	N										
Banksia menzieisii	Firewood Banksia	Y						703	200		500	300
Banksia menzieisii dwarf	Firewood Banksia Dwarf	Y					438					
Banksia prionotes dwarf	Dwarf Acorn Banksia	Y							200			300
Banksia sessilis	Parrot Bush	Y						703				500
Callitris preissii	Cypress Pine	Y				47		38			10	15
Callistemon Kings Park Special	Bottlebrush	Y										
Casuarina equesitifolia	Horse Tail Sheoak	N	27	7	53							10
Casuarina fraseriana	Weeping Beach Sheoak	N				23					10	
Casuarina obesa	Swamp Sheoak	N	5			26				15	10	
Corymbia calophylla	Marri	Y			23							
Corymbia calophylla rosea	Marri Rosea	Y										
Corymbia ficifolia	Red Flowering gum	Y										20
Corymbia maculata #	Spotted gum	Y						5			10	20
Delonix Regia	Poinciana	N										
Erythrina indica	Coral Tree	N										
Eucalyptus marginata	Jarrah	Y										
Eucalyptus gomphocephala	Tuart	Y	3		46		12	8	5			20
Eucalyptus sideroxylon	Ironbark	N										
Eucalyptus sideroxylon Rosea		N										
Eucalyptus todtiana	Coastal Blackbutt	Y										
Eucalyptus utilis	Coastal Moort	N										
Eucalyptus victrix	Coolibar	N				9						
Ficus macrophylla	Morton Bay Fig	Y										
Gleditsia triacanthos	Honey Locust	N										
Hakea laurina	Pincusion Haekea	Y										
Liquidambar styraciflua	Liquidambar	Y				8						
Macadamia integrifolia	Macadamia	Y				15						
Macrozamia riedlei	Zamia palm	N					48	33				
Melaleuca armillaris	Bracelet Honey Myrtle	N										
Melaleuca lanceolata	Rottnest Island Tea	N				29						
Melaleuca preissiana	Swamp Tea Tree	N			14	24						
Melaleuca quinquenervia	Broad-leaved	N	13		8	18						
Morus pendula alba	Mulberry	N										
Metrosideros thomasii	New Zealand Christmas Tree/Bush	N		4								
Olea europaea	Olive	N		2								
Phoenix canariensis	Canary Island date palm	N					2					
Robinia pseudoacacia	Black Locust	N										
Santalum acuminatum	Native Peach (Quandong)	N										
Tipuana Tipu	Tipuana	Y		3		14						
Xanthorrhoea preissii	Grass tree	Y		36		20						
SHRUBS												
Acacia cyclops	Western Coastal Wattle	N						829				
Acacia drummondii		N										800
Acacia lasiocarpa		N	142			784			200	600	1,000	2,000
Acacia littorea		N						703				
Acacia saligna prostrate	Dwarf Orange Wattle	Y			1682				600	800	2,400	2,600
Acanthocarpus preisii		N				374		703				
Agonis flexuosa nana	Dwarf WA Peppermint	Y			2362				500	800	1,500	2,000
Alyogyne 'Blue Heeler'	Native Hibiscus	N										
Alyogyne 'Mellissa Anne'	Lilac Hibiscus	N										
Anigozanthos rufus 'Big Red'	Red Kangaroo Paw	N			428	10			200	100	200	0
Anigozanthos 'Yellow Gem'	Yellow Kangaroo Paw	N							200	0	0	0
Anigozanthos flavidus 'Red'		N										
Atriplex cinerea	Coast Saltbush	N				1249		703	200	100	500	0
Atriplex isatidea		N						703				
Atriplex nummularia		N										
Baeckea virgata nana		N										
Banksia ashbyi dwarf	Dwarf Ashby's Banksia	Y			382				200	800	1,700	1,500
Banksia blechnifolia		Y						34		800	1,500	1,500
Banksia blechnifolia (seed)		Y										
Banksia dallanneyi	Couch Honeypot	Y						26	500	800	1,500	1,500

Botanical Name	Common Name	Primary Feeding Plants for CBCs*#	Stage 1 - Park A CBC Park	Stage 3 & 4 excl streetscape (POS D only) CBC Park	Stage 10 -Park U excl streetscape (Fairy Pde)	Stage 7 - Park F CBC Park	Park G only ALL26 CBC Park	Park S ALL35 CBC Park	Park O CBC Park FUTURE***	Park P CBC Park FUTURE***	Park R CBC Park FUTURE***	Park J CBC Park FUTURE*** (shows all plants for Park J)
Banksia hookeriana	Hookers Banksia	Y							500		1,500	1,500
Banksia nivea	Dryanrda	Y		197	1155				161	0	0	0
Banksia repens (seed)		Y										
Boronia crenulata 'Pink Passion'	Boronia	N							0	0	0	300
Callistemon salignus 'Great Balls of	Bottlebrush	N							0	0	0	400
Callistemon citinus 'Little John'	Little John Bottlebrush	N		103	3490					250	1,600	500
Callistemon viminalis	Red Bottlebrush	Y								1,000		1,500
Callistemon viminalis 'Matthew	Bottlebrush	Y		46					500	1,000	1,500	1,500
Calothamnus quadrifidus	One Sided Bottle Brush	N	251			2179			0	300	1,500	400
Chamelaucium uncinatum	Geraldton Wax	N					489		200	300	500	400
Chamelaucium uncinatum 'My sweet	Wax	N				326						
Chorizema cordatum	Pea	N				374			0	300	400	256
Chorizema varium	Limestone Pea	N			384							
Conospermum stoechadis		N							0	300	292	188
Eutaxia obovata nana		N	113									
Eremophila glabra	Tar Bush	Y	234			326	927	889	500	1,000	2,421	2,100
Eremophila glabra 'Silver Flame'	Tar Bush	Y	63						454	1,000	1,500	1,800
Eremophila maculata 'Lemon	Eremophila Lemon Delight	N										
Eremophila nivea 'Spring Mist'	Emu Bush	N	90	42		784			0	500	500	200
Gastrolobium capitatum		N							0	0	0	100
Gastrolobium nervosum (seed)		N										
Grevillea bipinnatifida	Fuschia Grevillia	Y							600	1,000	5,700	1,900
Grevillea obtusifolia Gin Gin Gem	Gin Gin Gem'	N	220			326			0		0	0
Grevillia olivacea		N			2362				0	0	0	0
Grevillea preissii		N										300
Grevillea preissii	Mini Marvel'	N								10	0	
Grevillia thelemanniana		N										
Grevillia thelemanniana		N				968			5	0	0	500
Grevillea thelemanniana 'Gilt	Guilt Dragon Grevillea	N							0	0	200	400
Grevillia thelemanniana 'Mini Marvel'		N										
Grevillea thelemanniana 'Red	Red Lantern Grevillea	N							0	0	0	0
Grevillea 'Robyn Gordon'		N							0	0	0	0
Grevillea 'Ella Bella'		N			2362				0	0	0	0
Grevillea 'Sea Spray'		N					489					
Hardenbergia 'Meema'	Native Wisteria	N							0	0	0	0
Hardenbergia 'Purple Spray'	Native Wisteria	N							0	0	100	100
Hibbertia aurea		N										
Hibbertia hypericoides	Yellow Buttercup	N										
Hibbertia racemosa		N				759		63	0	0	0	100
Hibbertia scandens	Snake Vine	N										
Hibbertia spicata		N				386			0	0	0	0
Hibbertia subvaginata		N							0	0	0	0
Hakea huegelii		N										
Hakea lissocarpha	Honeybush	Y			1674				339	1,000	1,500	2,500
Hakea trifurcata	Two Leaved Hakea	Y				374			300	1,000	1,500	1,900
Hakea varia	Variable Leaved Hakea	Y							0	1,000	1,500	2,500
Leucophyta brownii	Cusion Bush	N	220		2233	771		829	0	0	200	100
Leucophyta brownii 'Silver nugget'	Cusion Bush	N									0	
Leucophyta brownii 'Canal Rocks'	Canal Rocks Cusion Bush	N	66									
Melaleuca cuticularis		N							0	0	0	
Melaleuca huegelii		N	60			1249			0	0	0	
Melaleuca incana nana		N										
Melaleuca leuropoma		Y							0	210	1,500	2,090
Melaleuca leuropoma (seed)		Y										
Melaleuca linariifolia 'Little Red'	Honey Myrtle , Little Red Honey	N										0
Melaleuca megacephala		N										
Melaleuca nesophila		N										0
Melaleuca nesophila 'Little Nessie'		N			2233							
Melaleuca pentagona 'Little Penta'		N	70									
Melaleuca pulchella		N								0	0	0
Melaleuca systena (=Melaleuca		N				771				0	0	0
Melaleuca systena prostrate		N										
Olearia axillaris 'Little Silver'	Daisy Bush	N		188				21				200
Olearia axillaris 'Little Smokie'	Daisy Bush	N						829				
Olearia 'Ghost Town'	Daisy Bush	N				784						
Olearia pannosa	Silver-leaved Daisy	N										
Pimelia ferruginea		N		162		784	1,114	757	0	0	0	0
Pimelia magenta mist		N										
Rhagodia baccata		N				784	489	829	0	0	100	0
Rhaphiolepis indica 'Cosmic Pink'		N										
Ricinocarpus 'Bridal Star'	Wedding Bush	N								0		
Rosmarinus 'Tuscan Blue'	Rosemary	N		10								
Scaevola crassifolia	Fan Flower	N				1623		829	0	0	0	0
Scaevola nitida 'Aussie Spirit'	Fan Flower	N										0
Scaevola nitida	Shining Fanflower	N					1,114		0		80	100
Spyridium globulosum 'Little'		N				2179			0	0	0	0
Templetonia retusa	Cockies Tounges	N				374		757	0	0	0	200
Thryptomene 'Pink Lace'		N										0
Thryptomene saxicola	Rock Thryptomene	N									0	

Botanical Name	Common Name	Primary Feeding Plants for CBCs*#	Stage 1 - Park A CBC Park	Stage 3 & 4 excl streetscape (POS D only) CBC Park	Stage 10 -Park U excl streetscape (Fairy Pde)	Stage 7 - Park F CBC Park	Park G only ALL26 CBC Park	Park S ALL35 CBC Park	Park O CBC Park FUTURE***	Park P CBC Park FUTURE***	Park R CBC Park FUTURE***	Park J CBC Park FUTURE*** (shows all plants for Park J)
Thryptomene saxicola 'Paynes	Paynes Hybrid	N					438					
Thryptomene saxicola 'Supa Nova'	Supa Nova'	N							0	0	0	0
Westringia fruticosa 'Aussi Box'	Box Westringa	N		103								0
Westringia 'Bulli Coastal Creeper'	Westringa	N										
Westringia dampieri	Shore Westringa	N				771		829	161	280	0	0
Westringia fruticosa	Coastal rosemary	N						21				
Westringia fruticosa 'Grey Box'	Grey Westringa	N										
Westringia fruticosa 'Mundi'	Coastal rosemary	N	173									
Westringia fruticosa 'Jervis Gem'		N				784			0	0	0	0
Westringia fruticosa 'Seefoam'	Coastal Rosemary	N							0	0	0	0
Total trees			**63**	**54**	**1,372**	**279**	**518**	**1,546**	**710**	**25**	**1,590**	**1,935**
Total shrubs (and groundcovers etc)			**1,702**	**851**	**20,747**	**20,093**	**5,060**	**10,354**	**6,320**	**15,250**	**34,393**	**35,934**
Total all			**1,765**	**905**	**22,119**	**20,372**	**5,578**	**11,900**	**7,030**	**15,275**	**35,983**	**37,869**
Cond 12B CBC Species Only												

*Plants for Carbany's as listed in Groom, C (2011) Plants Used by Carnaby's Black Cockatoo. Department of Environment and Conservation; Birdlife Australia (2012) Carnaby's Black Cockatoo foraging and nesting plant species; Valentine, L & Stock, W (2008) Food Resources of Carnaby's Black Cockatoo in the Gnangara Sustainability Study Area. Edith Cowan University

#Corymbia maculata is considered a roosting tree for CBCs as per the DEC species list. It has still been included in the overall CBC tree count as it is a habitat tree but exclud

**POS A, D, F, F1, F2 PAW, G, J, O, P, R, S, U

***Planting targets for future parks are indicative only and no. may change depending on the availability of plants at the time

CBC Parks

Cond 12I	Parks A,D,F,G,S,U Total CBC (existing	13,845
	Parks J,O,P,R Total CBC (future)	77,170
	A,D,F,G,S,U Total all trees and shrubs	62,639
	J,O,P,R Total all trees and shrubs	96,457
	Parks A,D,F,G,S,U % CBC (existing)	22%
	Parks J,O,P,R % CBC (future)	80%

CBC Parks - Total CBCs	**91,015**
CBC Parks - Total CBC & non CBC	**159,096**
% of CBC species across 5ha plantii	**57%**

Precinct	Park	Status	Actual Area	Planting Area (m2)[1]	Planting Area		Use	Classification	Trees		Shrubs		Total	Total	Total	Comments
					(ha)	(%)			CBC	Non-CBC	CBC	Non-CBC	CBC	Non-CBC		
1	A	Complete	1,966	786	0.079	40%	Local	Passive Open Space	18	45	297	1,405	315	1,450	**1,765**	
1	D	Complete	921	461	0.046	50%	Local	Passive Open Space	41	13	243	608	284	621	**905**	D & E built as one stage
1	F	Complete	12,658	6,962	0.696	55%	Neighbourhood	Passive Open Space	150	129	700	19,393	850	19,522	**20,372**	F, F1 & F2 built as one stage
1	F1	Complete	1,071	643	0.064	60%	Local	Passive Open Space								F, F1 & F2 built as one stage
1	F2 PAW	Complete	843	801	0.080	95%	Local	Passive Open Space								F, F1 & F2 built as one stage
2	G	Complete	2,425	2,183	0.218	90%	Local	Natural - Conservation Interface	455	63	927	4,133	1,382	4,196	**5,578**	
3	J	Future*	11,195	9,516	0.952	85%	Neighbourhood	Reflect and Restore - Dune Link	1,136	18	26,390	7,544	27,526	7,562	**35,088**	~80% of plantings to POS portion are CBC feeding species
3	O	Future*	1,818	1,727	0.173	95%	Local	Passive Open Space	710	-	5,154	1,166	5,864	1,166	**7,030**	~80% of plantings to POS portion are CBC feeding species
4	P	Future*	12,058	4,582	0.458	38%	Neighbourhood	Active Park - Include area of high natural value	10	15	12,210	3,040	12,220	3,055	**15,275**	~80% of plantings to POS portion are CBC feeding species
4	R	Future*	13,100	10,742	1.074	82%	Neighbourhood	Natural - Conservation interface	1,570	20	27,221	7,172	28,791	7,192	**35,983**	~80% of plantings to POS portion are CBC feeding species
2	S	Complete	20,372	6,926	0.693	34%	Neighbourhood	Reflect and Restore - Dune Link	1,513	33	949	9,405	2,462	9,438	**11,900**	
1	U	Complete	39,862	5,182	0.518	13%	Neighbourhood	Active Park - Include area of high natural value	1,297	75	7,255	13,492	8,552	13,567	**22,119**	
Totals			**118,289**	**50,510**	**5.05**				**6,900**	**411**	**81,346**	**67,358**	**88,246**	**67,769**	**156,015**	

Summary 'CBC parks' only (Cond 12a & 12b)			**Cond 12b**		**Cond 12a**				**Cond 12b**		
Parks and planting areas i.e. allocated to CBCs (in ha)					**Total Trees (CBC)**	**Total Trees (non CBC)**	**Total Shrubs (CBC)**	**Total Shrubs (non CBC)**	**Total trees & shrubs (CBC)**	**Total trees & shrubs (non CBC)**	**Total trees & shrubs**
Existing Parks A, D, F, G, S, U:		2.394			**3,474**	358	10,371	48,436	13,845	48,794	62,639
			% of CBC primary feeding species - existing parks						22%	78%	
Future Parks J (partial), O, P, R:		2.657			**3,426**	53	70,975	18,922	74,401	18,975	93,376
			% of CBC primary feeding species - future parks						80%	20%	
Total ha		**5.051**	**Total CBC tree species across 5.051 ha park area**		**6,900**				**88,246**	**67,769**	**156,015**
			% of CBC primary feeding species across 5.051 ha park area						**57%**	**43%**	

Key

Parks dedicated to CBCs species and included in the calcualtions above

*Planting targets for future parks are indicative only and no. may change depending on the availability of plants at the time