COTTESLOE FORESHORE RENEWAL MASTERPLAN

October 2016

Town of Cottesloe

APPARATUS
PUBLIC ART + CULTURAL SERVICES

Cardno
Shaping the Future

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1. Executive Summary

The Cottesloe Foreshore Renewal is a project advanced by the Town of Cottesloe with the aim to revitalise the Cottesloe Foreshore Precinct with improved amenities, pedestrian accessibility and the effective planning of the public open spaces.

This Report and the masterplan drawings act as a guiding document for future works to the Cottesloe Foreshore between Forrest Street and Eric Street. The designs herein are loosely based on the Cottesloe Foreshore Redevelopment Plan, developed in 2012 following an extensive Enquiry by Design process.

The Report and Masterplan were developed with inputs from Elected Members of the Town of Cottesloe, government departments and local stakeholders. A copy of the engagement schedule about the public consultation is enclosed as Appendix 2.

The critical elements that form the Masterplan design, are illustrated in further detail in this report include:

- A coastal promenade to connect the public spaces along the foreshore and provide for ocean viewing areas at key points;
- Transformation of Marine Parade into an urban promenade whereby vehicles, pedestrians and cyclists share the streetscape;
- Generous areas of shaded parklands, equipped with recreational infrastructure such as fitness equipment, a play space, picnic settings and barbecues; and
- The integration of elements of the local history and culture through interpretive design.

While the designs presented herein are landscape focussed, the approach is underpinned by a sequence of research and technical studies. These cover issues such as Noongar significance, universal access, vehicular activity, hard and soft materials, sustainability, storm water and drainage, lighting, heritage and culture, place making and the long term maintenance and management of the precinct.

The Masterplan proposes small moves and design interventions that will enhance the foreshore precinct, unify the different zones along the foreshore, and provide a renewed and integrated environment while respecting and maintaining the character and identity of Cottesloe Foreshore and Cottesloe Beach.

The Rocks Markets, Sydney

2

2. Design Approach

The Cottesloe Foreshore Renewal Masterplan (the Masterplan) offers the opportunity to enhance the existing condition of the Cottesloe foreshore and beach to create an asset that is the most notable point of pride in the community.

The proposed works will better the experience of the activities enjoyed by residents and visitors to Cottesloe, whilst being sympathetic to Cottesloe's heritage and coastal environment.

Beach

The focus and pride of Cottesloe is the beach. The Masterplan proposes little change to this area. Some shade structures on the sand toward the Groyne are proposed with one shelter having universal access from the adjacent path.

The dunes will continue to be rehabilitated by Coastcare, and will be protected by formalised beach access and viewing areas.

Promenade

A new promenade in the form of boardwalk is proposed along the upper edge of the dunes. As the busiest area for walkers, runners and cyclists, the new boardwalk will be of generous width to accommodate for its high usage, as well as extending out at points to create breakout areas with seating, shade and showers.

The boardwalk will be constructed from a sustainable, low maintenance material.

Public Open Space

A seamless transition between the boardwalk and adjacent parklands, the public open space will provide amenity such as a renewed playground, updated outdoor exercise equipment and generous grassed areas. The public open space will be well shaded by new and existing trees. The existing limestone terraces will remain in their current format.

Marine Parade

The Masterplan proposes the stitching together of the east and west sides of Marine Parade by creating a unified slow traffic environment where cars would proceed below a posted speed limit of 30km/h. This creates a streetscape which is a part of the foreshore, rather than being separated from it. A treatment of high quality paving, planting and street furniture is to be applied along Marine Parade between Forrest and Napier Streets, and at the intersection of Eric Street and Marine Parade.

A slight diversion of Marine Parade is proposed for the section in front of John Black Dune Park to create a more generous area of parkland adjacent the coast.

Tel Aviv Port Public Space Regeneration
Image source: Adi Branda

Methods of Approach

The Masterplan was developed as a framework to identify and addresses key challenges of the urban and landscape settings that is within Cottesloe Foreshore Precinct. The method of approach includes review of previous studies of the foreshore area, and understand the aspirations of the Town of Cottesloe, the local community and stakeholders. The methodology adopted is as follows:

1. Review findings from Enquiry by Design exercise

   The Enquiry by Design document was commissioned by the Department of Planning and Infrastructure in association with the Town of Cottesloe. The process involved a series of workshops with the local community, to draw out their aspirations for the Cottesloe Foreshore Precinct. The key findings from the Enquiry by Design exercise, and which formed the Cottesloe Foreshore Redevelopment Plan (pictured right) are:

   - Provide wider pathways for improved pedestrian experience and opportunities for alfresco dining;
   - Provide universal access to the beach and grass terraces;
   - Reduce the impact parking along Marine Parade and enhance visual amenity; and
   - Retain and preserve the interface between the foreshore and the beach.
2. Identify sites of significance
3. Conduct a site analysis including identification of opportunities and constraints
4. Develop key design principles
5. Develop the Masterplan drawing including a set of concept diagrams illustrating the design rationale
6. Outline the design considerations that were taken into account in the development of the Masterplan, including the development of a palette of materials, finishes, trees and planting.

COTTESLOE FORESHORE REDEVELOPMENT PLAN

TOWN OF COTTESLOE

The overall objective is to transform the Cottesloe Beachfront into an attractive public asset which people can be proud of by focussing on the following:

- Providing appropriate and well-defined gateways
- Re-establishing pedestrian priority
- Intensifying and upgrading landscaping
- Developing a delightful public domain
- Providing interesting and useful public spaces
- Providing the opportunity to develop lively sidewalks
- Installing informative social and cultural interpretive stations
- Ensuring the existing casual character is not lost
- Devising logical and practical projects

RE-DEFINING THE TWO KEY FORESHORE ELEMENTS

MARINE PARADE

Marine Parade should become a combined pedestrian and vehicle space where pedestrians have the obvious right of way. Traffic speed should be reduced to between 20 and 30kph and the use of kerbing should be minimised so that there is no apparent separation between road and footpath.

There should also be no major kerbing where lawn and road surfaces meet. The so-called 'naked street' approach is intended to reinforce pedestrian priority. This approach is very well used in European cities to great effect. A more casual environment can be created using this technique.

The actual vehicle carriageway should be no more than 7m wide and kerbside parking should be reduced to the few areas shown on the plan. The current road reserve is 20m wide which allows for a new 7m carriage way and up to 13m of additional development area on the eastern side of Marine Parade.

THE UPPER PROMENADE

The upper promenade is one of Cottesloe's greatest assets. It is however too narrow and and constrained in parts. The promenade should be widened to between 5 and 6m.

It should be capable of being used by all forms of pedestrian activity as well as slow-speed cyclists. It needs to become the 'great experience' of the foreshore. Its surface materials should be simple and there has to be a large number of comfortable seats spread along its path.

It is very important not to resort to using dotted line markings and the like along the promenade as if it were a road. The promenade should not be seen as a dual-use path with all the associated surface markings. There are so many examples of wonderful, wide people-focussed promenades around the world which are free from traffic markings.

Shade trees need to be planted along the promenade's edges particularly near seating otherwise the experience of sitting and take in the view will be too harsh.

THE IMPORTANCE OF THE PUBLIC DOMAIN

PUBLIC DOMAIN LANDSCAPE

The entire strip between John Street and Eric Street is too barren. An examination of most coastal environments of Australian seaside towns will show the use of trees to great affect. The Norfolk Island Pine trees, already characterising Cottesloe, are used extensively in most seaside towns along Australia's southern coast from Adelaide to Point Londsdale. There are also many other tree species of a smaller form which can be used in harsh coastal environments.

The concern is often voiced that planting more trees on the Cottesloe foreshore will compromise the wonderful view. Trees in fact will enhance the view because the viewer is offered a pleasant foreground through which the view is revealed. This is well-demonstrated looking down Forrest Street.

Apart from relating to views, trees are needed on the foreshore to provide shelter from both wind and sun. What is needed is a well-considered landscaping plan that can be realised in stages. The plan needs to balance the wind protection and shade considerations with the overarching need to maintain views.

There are also areas where the natural coastal landscape needs to be expressed and appreciated in its own right. More resources need to be applied to intensify the natural vegetation areas along the foreshore. The area directly in front of the current promenade in one area which requires major upgrading with intensification of native vegetation.

OBJECTS IN THE PUBLIC DOMAIN

One of the very important tasks to be undertaken along the foreshore strip from Forrest Street to Eric Street is to unify and simplify the choice of objects used in the public domain. These objects include rubbish bins, signage, seats, lights, handrails, bus shelters, playground equipment, barrier fencing, drinking fountains, sun shading structures and any kiosk-like structures.

The overall impact of a coordinated public object theme cannot be over-estimated. Visitors will not necessarily reflect on these everyday objects however their overall benefits will create a sense of cohesion. A very good example is the children's water playground area in Kings Park where a great deal of care has been taken to coordinate all the public objects, including the paving materials and soft landscape.

To achieve a coordinated theme of public objects does not necessarily have to involve the use of the most expensive designs and materials but it most definitely involves the application of good design principles. These principles include simplicity, robustness, as few different materials as possible, delightful and fit for purpose. Signage should be minimised and when objects are grouped it is essential that the elements harmonise.

It is also important to develop highly activated people spaces at street level. This is the responsibility of building owners. When building owners face onto public reserves they have an obligation to ensure that they make a positive contribution to the townscape. The materials and design of these spaces should be reviewed for consistency and harmony with the overall theme of any other public object. This should apply to canopies, landscape containers, temporary barriers and signage.

Cottesloe Foreshore Redevelopment Plan prepared in February 2012, forming part of the Enquiry by Design process

3. Sites of Significance

Key

1. Mudurup
2. Mudurup Rocks *
3. Cottesloe Beach Precinct #
4. Norfolk Island Pine Precinct #
5. Vestige of Original Jetty and Site of Pavilion #
6. Cottesloe Beach Pylon #
7. Peter's Pool
8. Cottesloe Commercial & Recreational Precinct

Refer Appendix 1 for details on the proposed methods of interpretation for the above sites of significance.

** - Aboriginal heritage sites*

 # - Listed heritage sites

1

Mudurup

Mudurup is the place name given by the Whadjuk Noongar people to the Cottesloe Coastal strip.

Meaning ‘place of whiting’, it derives from the Noongar *mudu* meaning whiting + *up*, meaning ‘place of’.

Noongar oral history states that Mudurup was one of the traditional haunts (or in Noongar terms the ’run’) of the Australian Raven or *Wardung*.

Moonderup (commonly called Mudurup) is listed on the Department of Aboriginal Affairs Heritage Site Database as a place of ceremonial and mythological significance. It was a significant place for Whadjuk Noongar people as a seasonal hunting ground and place for food gathering.

2

Mudurup Rocks

Mudurup Rocks are currently used as a fishing spot and is a popular surfing and paddling area.

On the foreshore and in the cliffs at Mudurup Rocks is a sequence of beach and prograding shoreline deposits. Exposed on the beach is a development of thick beach rock that extends from below water level to the high tide mark. The beach rock contains large broken shells of gastropods and other molluscs, and some coral fragments set in a hard, cemented shell matrix.

3

Cottesloe Foreshore Precinct

The Cottesloe Foreshore Precinct is both a local and regional beach environment within an established and historic seaside suburb. It is internationally recognised for its clean, sandy beaches, Norfolk Island pine trees, shaded lawns and grassed terraces close to the water.

It is also well known for its beach front strip along Marine Parade which includes the Indiana Teahouse, the Cottesloe Beach Hotel and the Ocean Beach Hotel. The foreshore offers a range of public and recreational activities while remaining a tranquil place with a sense of openness.

The coastline, landform and vegetation of Cottesloe provide a distinctive natural landscape setting, which underpins its identity as a suburb with prime ocean frontage. Marine Parade and the beach front buildings are set above the beach providing a unique character, offering views from vantage points back toward the ridge and limiting the impact of built form along Marine Parade when viewed from the beach. The coastal landscape is a mix of revegetated dunal areas and grassed terraces and verges.

One of the distinct character of the beach is that it is part of the suburb of Cottesloe, compared to other Perth beaches where the beach quite distant to the residential and commercial areas. Visitors travelling by car, bus or train will journey through the suburb before reaching the beach. It is this close

relationship between beach and town that most likely gives rise to the local feeling that this is a local community beach and highly sought after residential suburb.

Cottesloe Beach is however a regional asset to be enjoyed by all. The rail service to the Town Centre provides access to the beach for a significant number of Perth’s residents and visitors who use Forrest Street as a pathway to the beach.

A portion of the Cottesloe Reef has also been declared a Fish Habitat Protection Area under the Fish Resource Management Act (1994), reinforcing the value of its marine environment and its importance to the community.

The foreshore and beach area, over the years, have been host to various cultural and sporting events which has become an integrated part of the local culture and contributes to the history and contemporary character of Cottesloe.

4

Norfolk Island Pine Precinct

Cottesloe Foreshore Precinct is very often associated with its iconic rows of Norfolk Island pine trees planted along the residential street verges and beach front. Even though these iconic trees are not native to the area, they have helped to define and establish the character of the Precinct. In addition to the Cottesloe Foreshore Precinct, a Norfolk Island Pine Precinct has been identified and included as part of Cottesloe heritage sites. The portions of the Norfolk Island Pine Precinct that forms part of the Masterplan are the sections along Napier and John Streets.

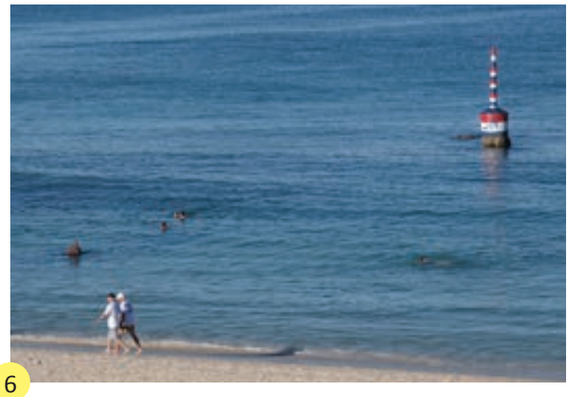
5

Vestige of Original Jetty and Site of Pavilion

Despite the growing attraction of Cottesloe's clear waters and pristine sands, it was not until the completion of a wooden English-type pier that Perth's favourite beach reached new heights of popularity. With the official opening of the jetty and the carnival-like atmosphere created on the beaches alongside of it, people flocked from all corners the State to spend their summer holidays on that pleasant section of the coast. The Jetty was completed in 1906 and located on the beach front facing Forrest Street.

The Jetty was demolished in the early 1950's due to being unsafe after being continually affected by environmental and climatic factors .

The Jetty and its popularity drew more visitors to Cottesloe Foreshore Precinct, which in turn led to the growth of commercial and recreational activities such as stalls, kiosks, tearooms and the Bathing Pavilion. The Pavilion was built following an architectural competition and became an icon of Cottesloe's foreshore.



6

Cottesloe Beach Pylon

The Beach Pylon also known as Foreman's Folly is one of three pylons built to anchor a shark net following a fatal attack in 1925. Two were destroyed by storms in 1937. Since then it has become an iconic landmark and popular diving platform for beach users. The Pylon is currently stated as suffering from concrete erosion.

7

Peter's Pool

The place known as Peter's Pool is a 860 meters length of beach stretching from Eileen Street to Overton Gardens. Peter's Pool is a popular swimming spot at Cottesloe Beach because of the protective reef surrounding the gap between the reefs, one of the nicest places to swim along the northern portion of Cottesloe Foreshore Precinct.

8

Cottesloe Commercial & Recreational Precinct

Key buildings and 'institutions' have developed and thrived as part of the Cottesloe Foreshore Precinct. The businesses and hotels in turn provide the facilities and amenities to support the recreational activities generated by their proximity to the beach and urban environment adjacent to the Cottesloe Foreshore Precinct.

4. Site Analysis

Analysis Diagrams

Existing Elements to be Retained

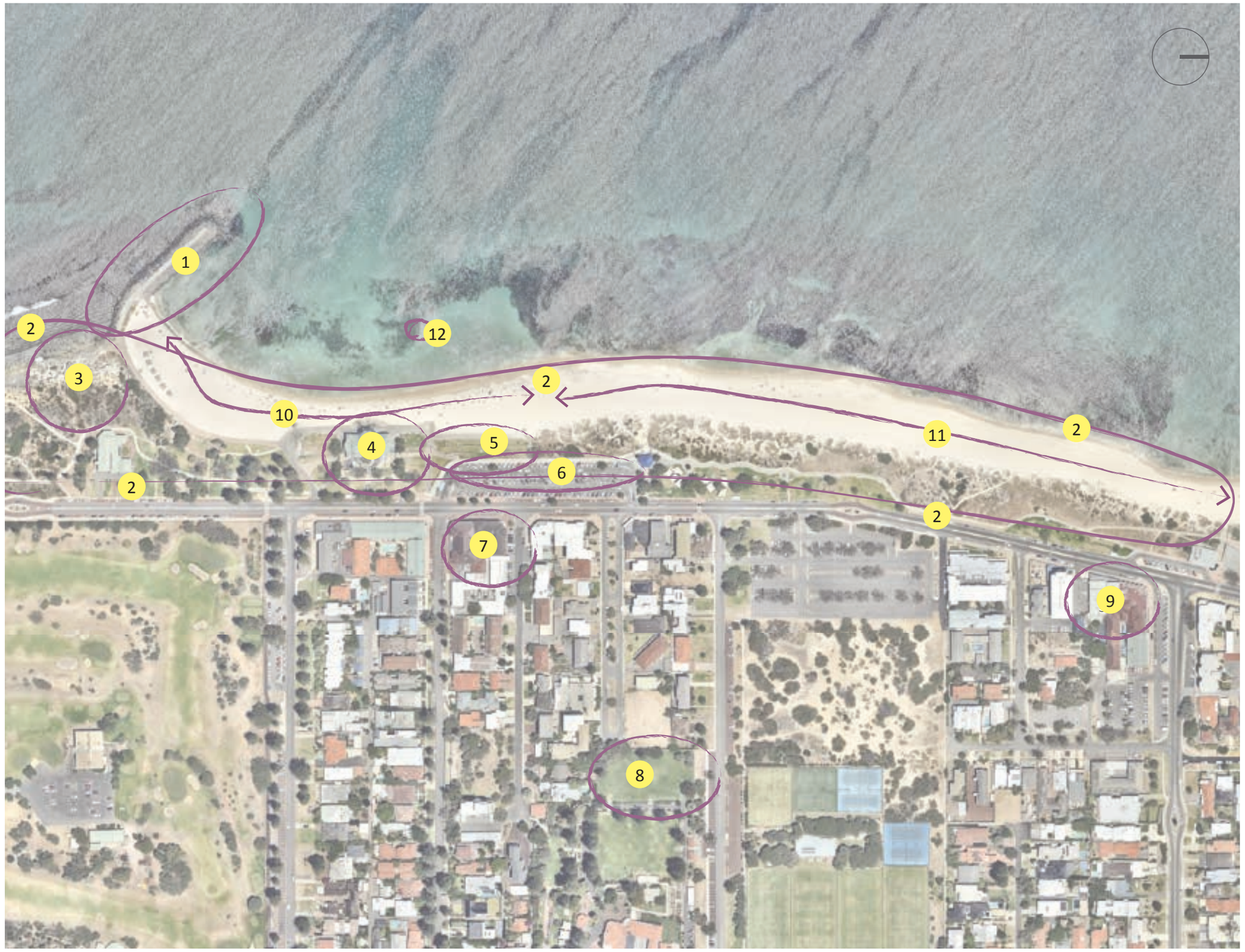
Legend

- General extent of works area
- Don't touch | Do very little change

Key

1. Cottesloe Groyne
2. Mudurup Rocks
3. Cottesloe Surf Life Saving Club
4. Lottery-west funded terraces
5. Groups of existing trees
6. Forrest Street car park
7. Indiana Tea House
8. Historic Terraces
9. Existing buildings
10. Dune vegetation

Points of Interest



Key

1. Cottesloe Groyne
2. Mudurup
3. Mudurup Rocks
4. Indiana Tea House
5. Historic Terraces
6. Views from car park
7. Cottesloe Beach Hotel
8. Cottesloe Civic Centre Gardens
9. Ocean Beach Hotel
10. Cottesloe Beach
11. North Cottesloe Beach
12. Pylon

Opportunities

Key

1. Provide interpretation throughout. Refer Interpretation Plan
2. Enhanced coastal promenade
3. Reinvigorate Historic Terraces & Indiana Tea House
4. Stitch together east & west side of Marine Parade
5. Create an alfresco zone along Marine Parade
6. Connect foreshore with Civic Centre Gardens
7. Generous availability of car parks and John Black-Dune Park, located on higher area with coastal views

5. Key Design Principles

The Masterplan seeks to embed the overall design principles into the approach for the paving, urban furniture and structures design within the streetscape and wider public realm environment through:

Consistency

Ensure a sense of coherence and legibility through a consistent approach to the design and detailing of the spaces.

Create a well-balanced, consistent palette of materials and design responses to simplify and reduce costs of subsequent maintenance/ replacement activities.

Understand that consistency still leaves room for place-specific distinctiveness where appropriate.

Consider the number and variety of streetscape and public realm elements to achieve a balance between providing for the needs of all users and maintain overall visual order and coherence.

Materials

Use robust and durable materials and construction methodologies to deliver high quality, attractive and durable spaces.

Select materials and design responses that embody simple, classic solutions that are enduring and provide a 'timeless' aesthetic.

Use materials that have been sourced with due regard to their environmental impact in their performance and manufacture.

Use materials that exceed the performance specifications attributes including structural and tensile strength, water absorption, and anti-slip resistance within a coastal environment.

Use materials and sign responses that are flexible and adaptive to change.

Seek to minimize the number and variety of materials used.

Maintenance

Deliver durable design responses that utilise fit for purpose, low-maintenance materials and componentry.

Ease of cleaning and cost of reinstatement.

Ensure that those tasked with subsequent maintenance and management of the streetscape and public realm are included in the design process and understand the expectations for ongoing maintenance performance levels.

Streets for the People

To create safe, accessible and pleasant streets and public spaces for people through a consistent streetscape layout, traffic calming interventions and incorporation of CPTED design principles and national standards.

Promote Activity

To encourage a wide range of activities to enhance vibrancy and diversity to achieve safe, accessible and legible streetscapes and public open space design.

Visual Appearance

To avoid visual clutter through a consistent approach of streetscape design and to establish an attractive environment that promotes clear messages for pedestrians, cyclists and drivers.

Identity and Information

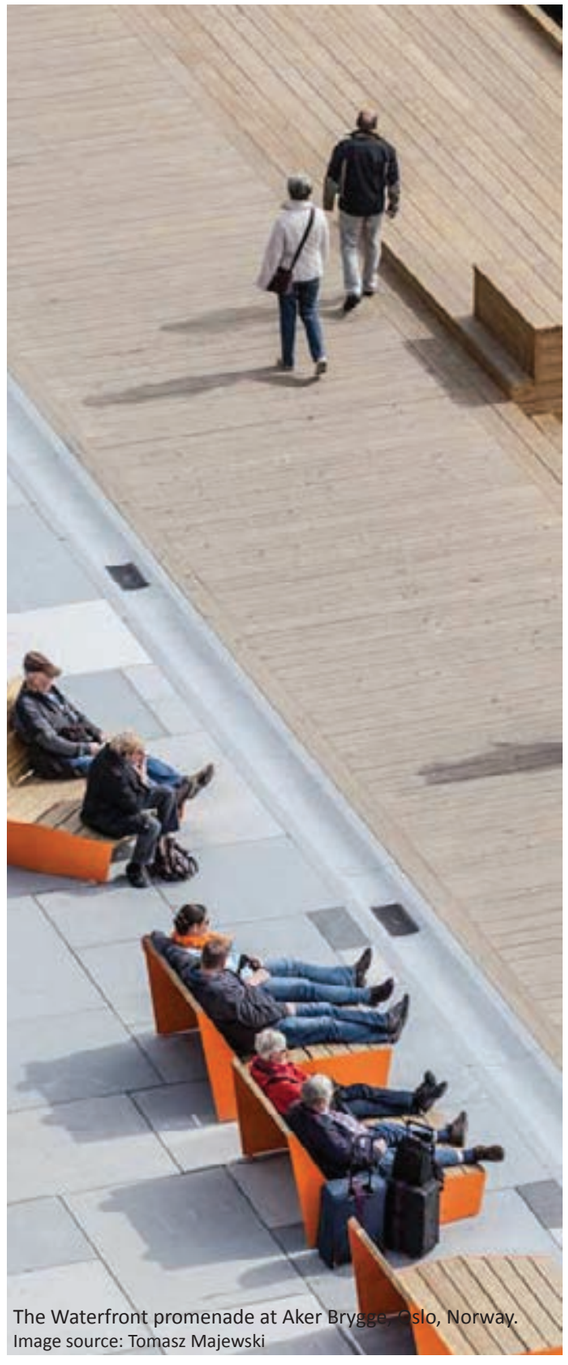
To enhance the distinctive and recognisable identity for the Cottesloe Foreshore Precinct through consideration of the character of the streetscape and development of the base grid to provide a cohesive context for the key precinct areas.

Sustainable Design

The underlying design principle adopted in the development of the concept plan is that the design is culturally appropriate, environmentally considerate, cost effective and functional.

Sugar Beach, Toronto, Canada.
Image source: Nicola Betts

Vinaròs Promenade, Valencis, Spain.
Image source: Guallart



The Waterfront promenade at Aker Brygge, Oslo, Norway.
Image source: Tomasz Majewski

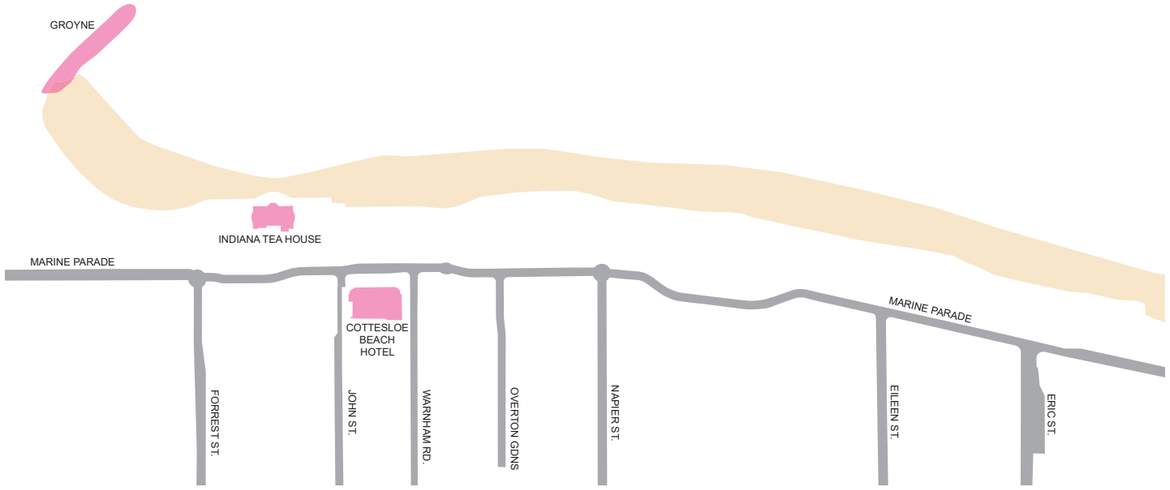
Murray Street, Perth

6. Masterplan Concepts

Concept Design Diagrams

Beach Precinct Renewal

Cottesloe Beach is an iconic recreation experience and was crucial in the development of the suburb of Cottesloe. Renewal of the beach foreshore and adjoining precincts will be achieved by:



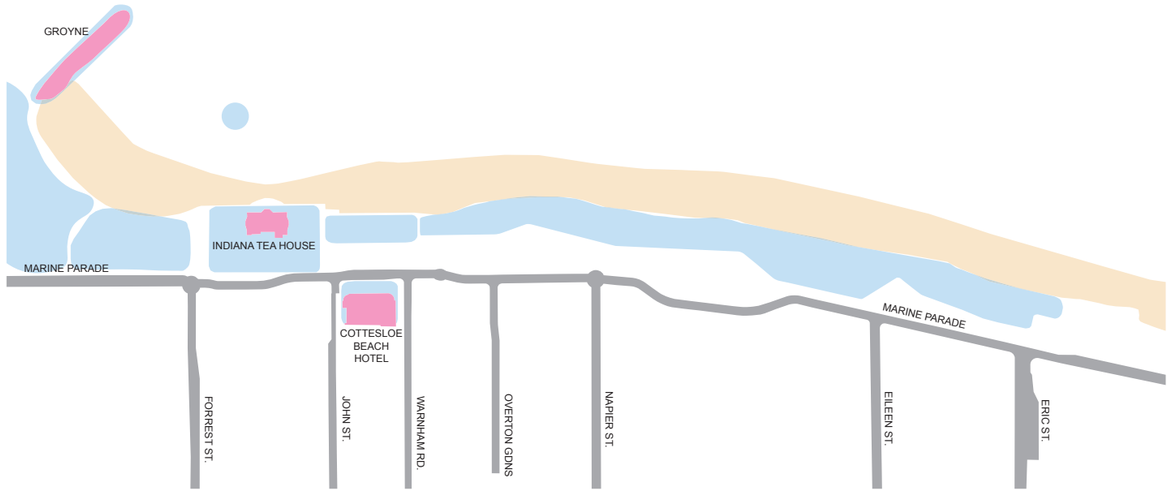
- Creating a sense of arrival into the Cottesloe Foreshore Precinct
- Providing greater integration between the beach, the adjacent parklands, and Marine Parade
- Celebrating and strengthening Cottesloe Foreshore's character as a signature experience

Legend

- Cottesloe Beach
- Key Built Form

Character and Culture

New recreational infrastructure will be sensitively retro-fitted to the existing foreshore by:



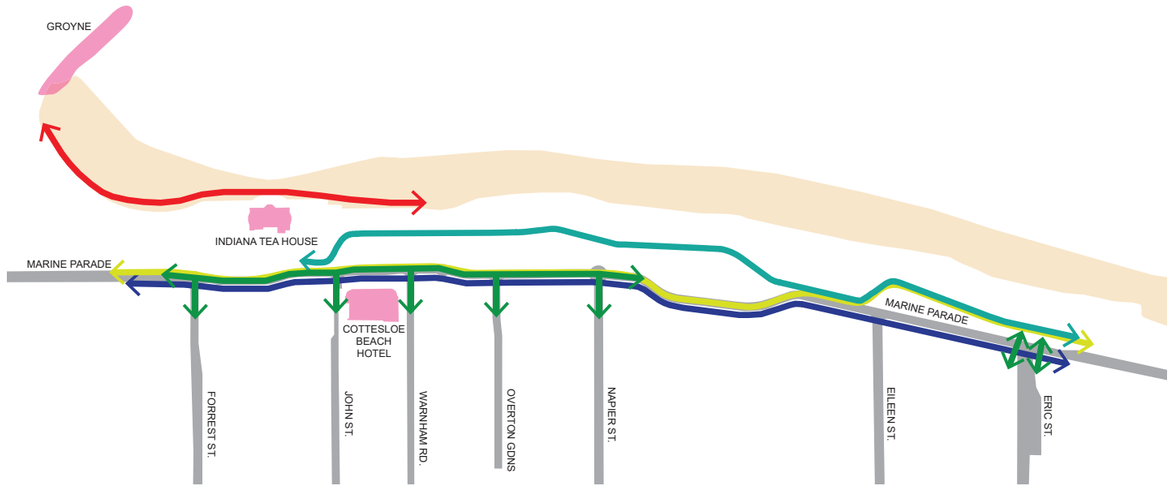
- Maintaining the character of the beach and foreshore environment and associated streetscape setting including the iconic Norfolk Island pine trees
- Enhancing key natural landscape and urban setting of key heritage and character features and built form
- Interpretation of Noongar significance and the natural and cultural histories and stories of Cottesloe Foreshore

Legend

- Cottesloe Beach
- Key Character/Cultural Elements
- Key Built Form

Journeys

The foreshore precints will be enhanced expression of a series of ‘journeys’. This will be achieved by:



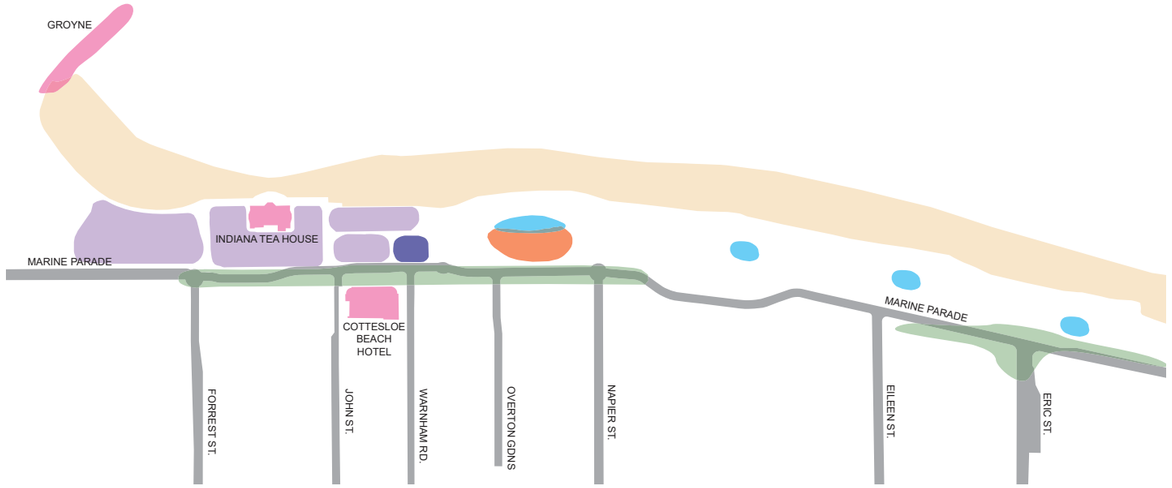
- Developing a coastal promenade along Cottesloe Foreshore, connecting all recreational zones and key connection points for beach access
- Providing shared spaces to key areas of Cottesloe Foreshore Precinct incorporating innovative approaches to the transport design including road alignment and width, parking arrangement and strategic location of planting and urban furniture
- Maintaining a generous Urban Corridor on the building side of Marine Parade, that also accommodates alfresco dining

Legend

- Cottesloe Beach
- Beach Promenade
- Dune Promenade
- Shared Space
- Urban Corridor
- Shared Path
- Key Built Form

Destinations

The renewal of Cottesloe Foreshore Precinct provides an opportunity to enhance and highlight a range of destinations, either existing or new. This will be achieved by:



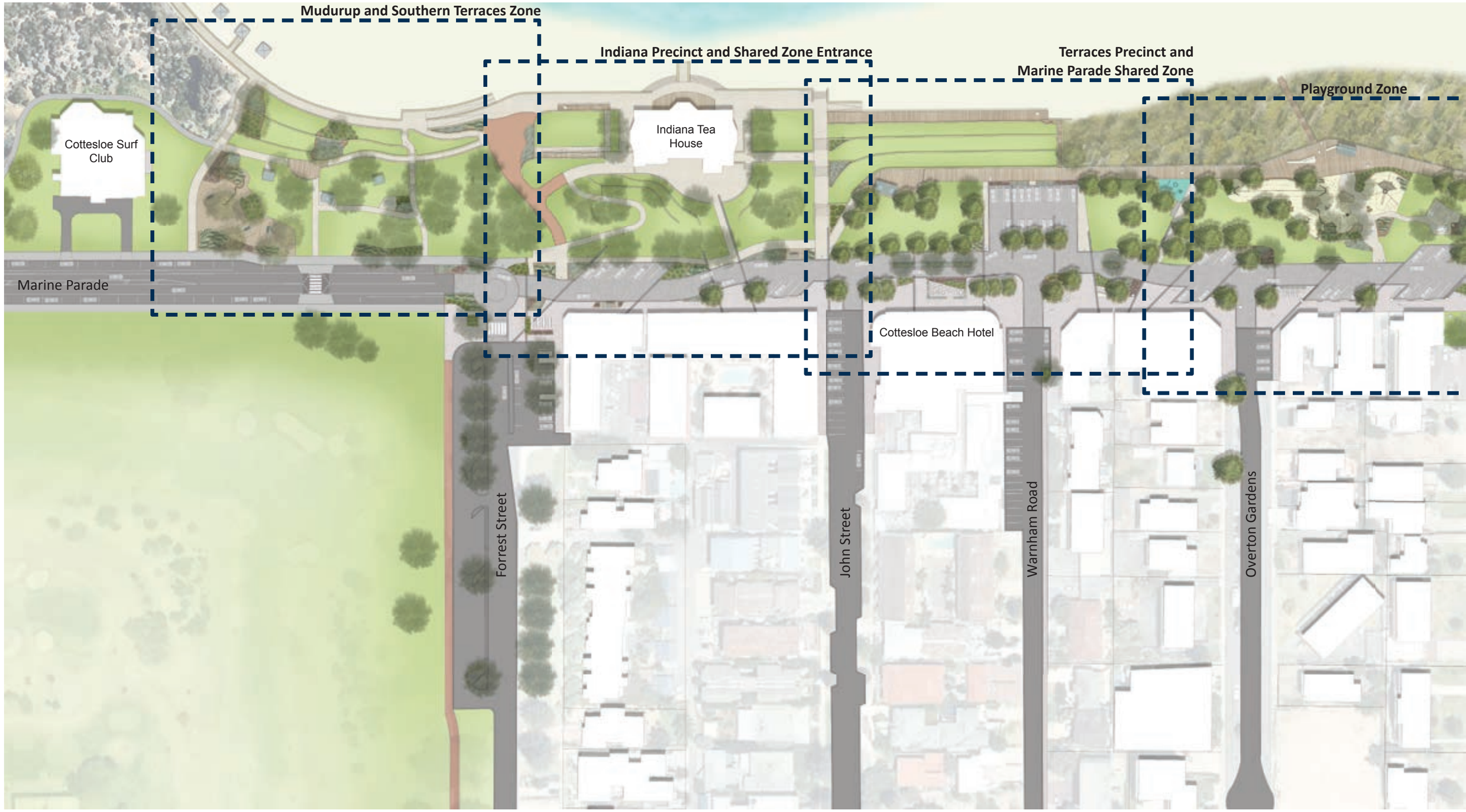
- Enhancing the existing parklands by providing additional picnic amenities, shading and access paths through the area
- Creating a picnic lawn adjoining Marine Parade to complement the north terraces as well as enhancing the beach front view in front of the Cottesloe Hotel
- Providing a suitably located and compact beach front car parking space that can be adapted to host organised events
- Enhancing and relocating the playground, so that is integrated in the landscape setting adjoining open lawn areas for passive recreation and overflow play zones
- Improved streetscape setting enhancing the character of Marine Parade with potential for alfresco areas with the aim to boost and support beach front business opportunities

Legend

- Cottesloe Beach
- Beach Public Open Space
- Beach-side Parking/Event Space
- Playground
- Decks and Viewing Areas
- Commercial Precinct
- Key Built Form

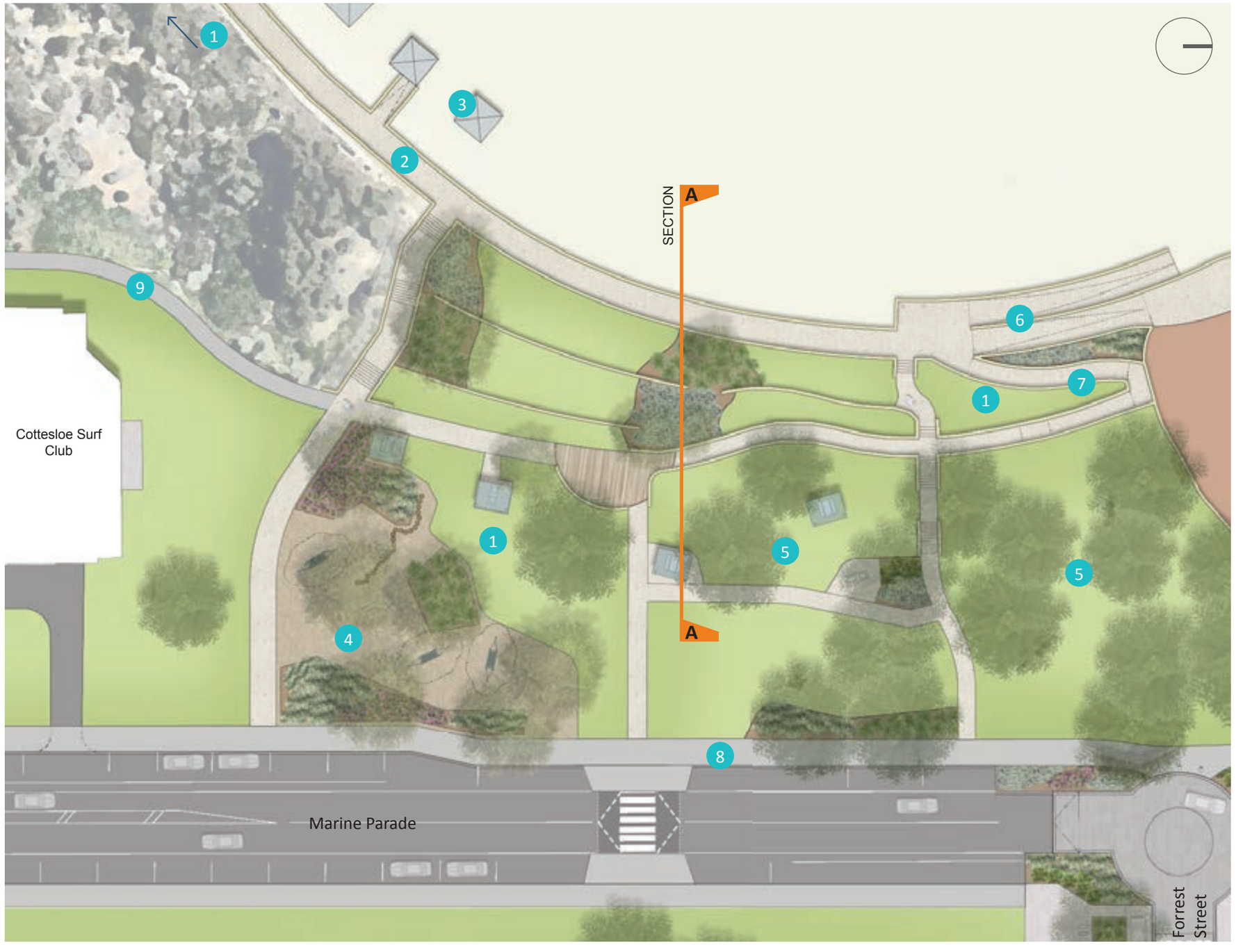
- Provide a series of pockets of elevated decks that overlooks the beach at key vantage points along the foreshore promenade

Concept Design Drawings




Central Parklands
Northern Parklands
Napier Street
Eileen Street
Eric Street
Marine Parade
John Black Dune Park
N.T.S

Mudurup and Southern Terraces Zone



Key

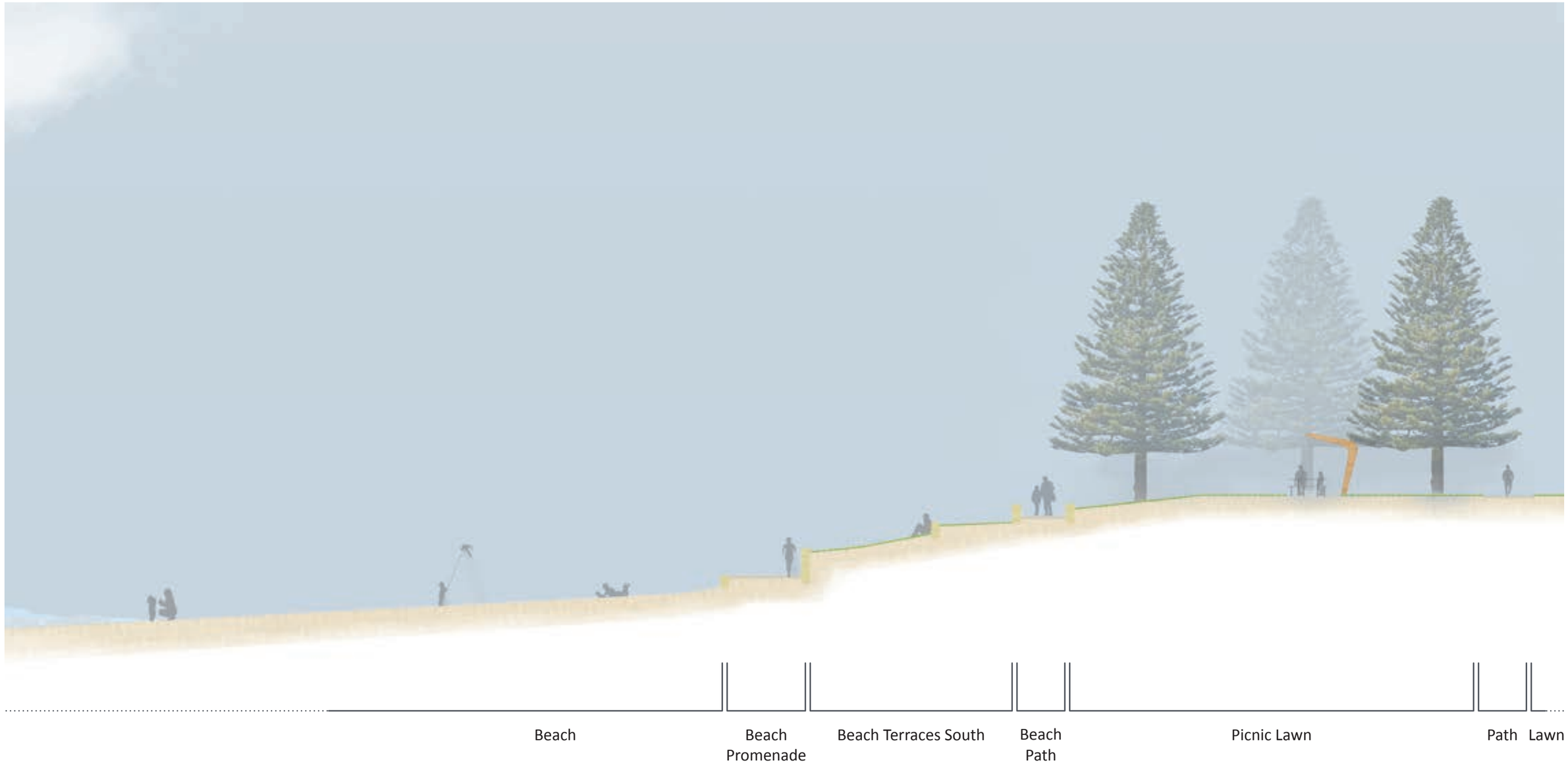
1. Interpretive elements, refer Interpretation Plan
2. Upgrade to existing path surface
3. New beach shelters (to replace existing). One shelter will be accessed via a path to facilitate universal access
4. Mulched area around existing trees with informal play elements and planting.
5. Picnic area with shade shelters, seating and BBQ
6. New universal beach access ramp
7. Realignment of pathway to achieve universal access
8. Cycle path
9. Realigned footpath to improve visibility to rear of Surf Club.

0 10 20m

SCALE 1:400 @ A3

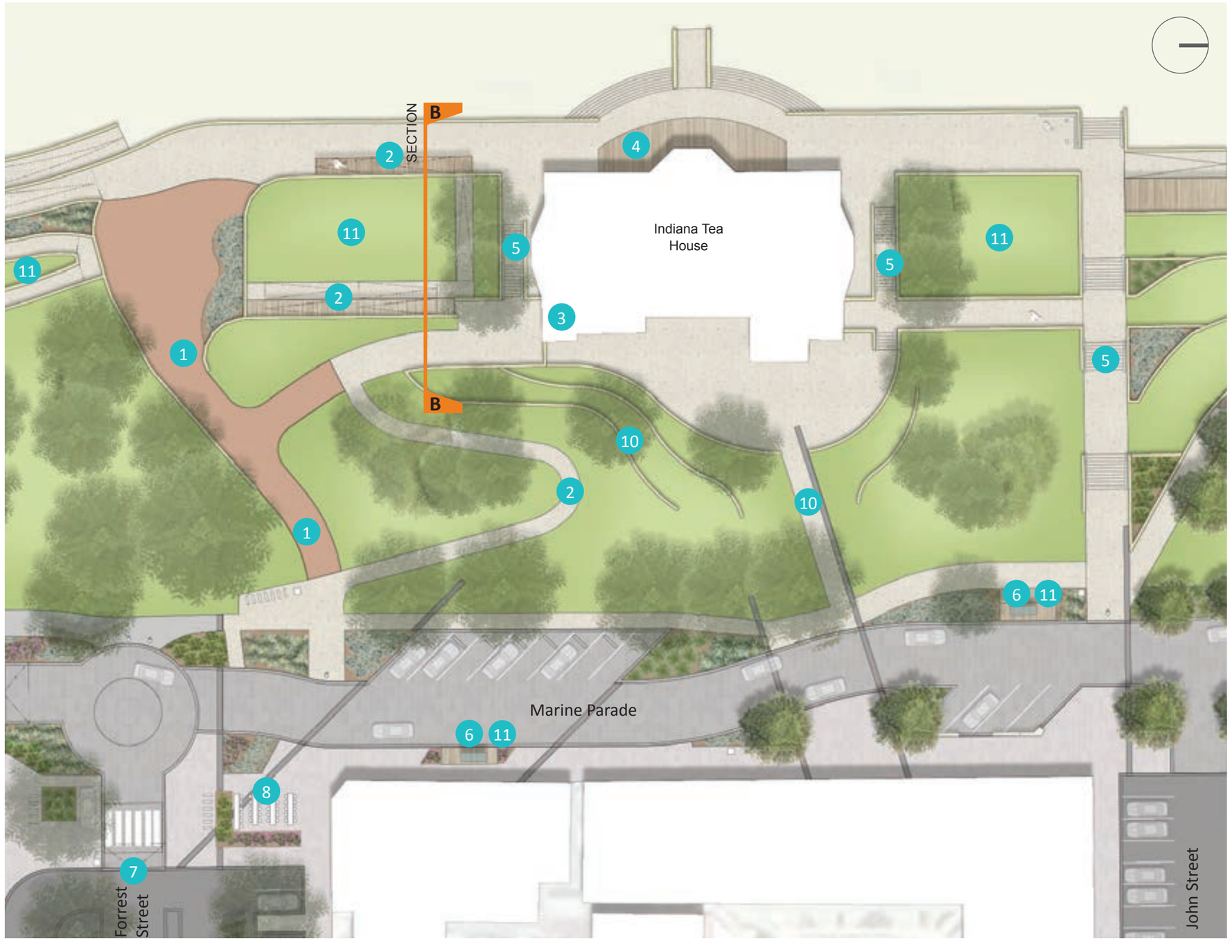
Location Diagram

Section A



N.T.S

Indiana Precinct and Shared Zone Entrance



Key

1. Beach access for authorised vehicles
2. Universal access ramp
3. Public toilets
4. Flush deck outside the Surf Club storage area
5. Upgrade to existing staircase
6. Bus stop
7. Ramp up to Marine Parade shared zone
8. Marine Parade alfresco zone
9. Roundabout marks southern entrance to shared zone
10. New terracing and pathways to the front of Indiana Tea House
11. Interpretive elements, refer Interpretation Plan

0 10 20m

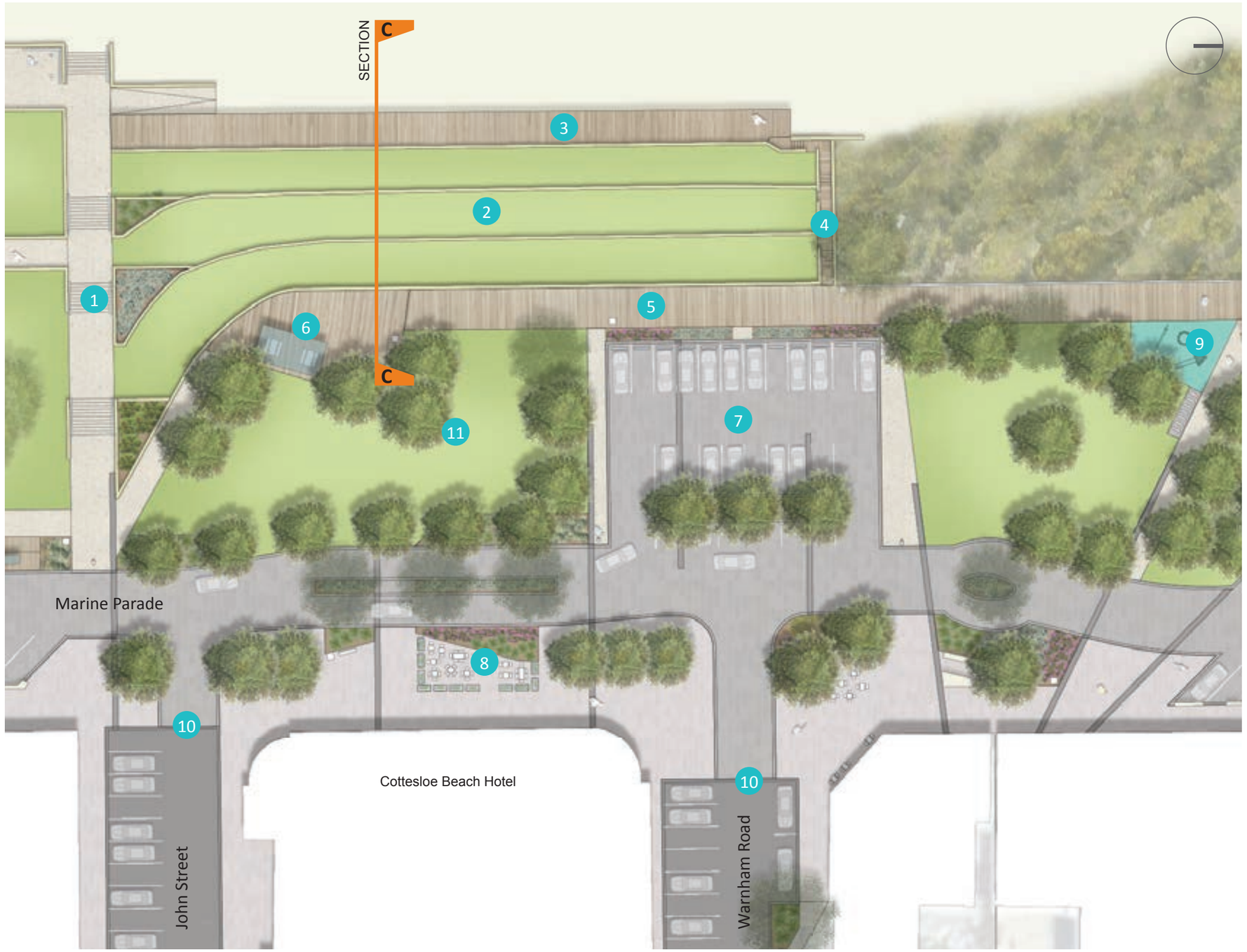
SCALE 1:400 @ A3

Location Diagram

Section B


Accessible
Ramp
Beach
Beach
Promenade
Lawn
Accessible
Ramp
Lawn
Path
Lawn
Path
Lawn

Terraces Precinct and Marine Parade Shared Zone



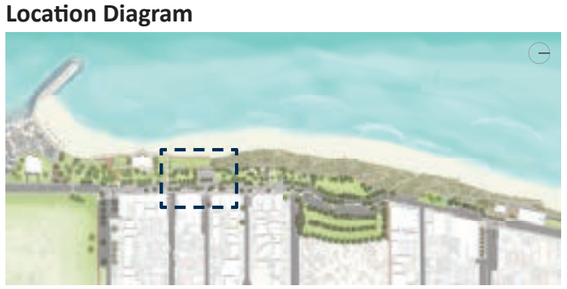
Key

1. Upgrade to existing staircase
2. Existing limestone terraces
3. Lower level deck
4. Stair connection, upgraded with decking
5. Upper level boardwalk/promenade
6. Breakout node with shade and seating
7. Carpark with 20 bays
8. Alfresco zone
9. Exercise station with outdoor fitness equipment
10. Ramp up to Marine Parade shared zone
11. Interpretive elements, refer Interpretation Plan

0 10 20m

SCALE 1:400 @ A3

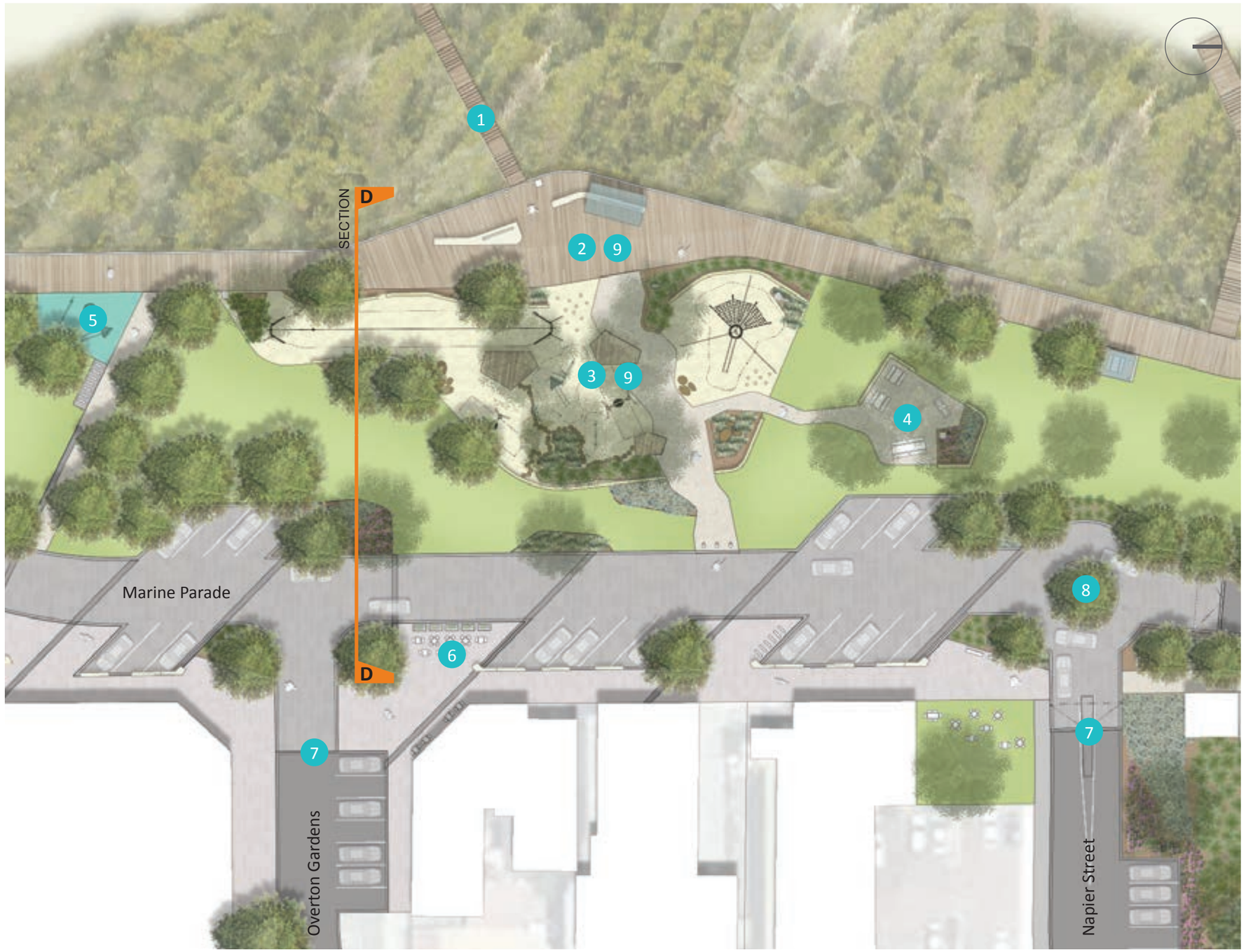
Location Diagram



Section C

N.T.S

Playground Zone



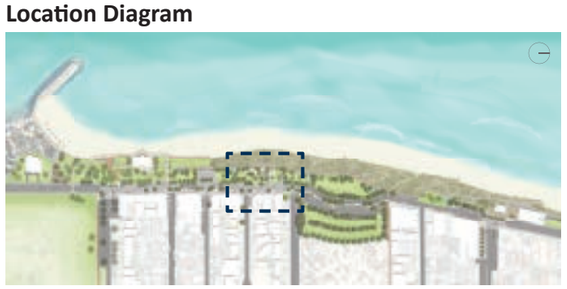
Key

1. Beach access staircase
2. Breakout area with shade, seating and showers
3. Conceptual playground arrangement
4. Picnic area with seating, shade and barbecues
5. Exercise station with outdoor fitness equipment
6. Alfresco zone
7. Ramp up to Marine Parade shared zone
8. Roundabout marks northern entrance to shared zone
9. Interpretive elements, refer Interpretation Plan

0 10 20m

SCALE 1:400 @ A3

Location Diagram



Section D

N.T.S

Central Parklands

Key

1. Roundabout marks entrance to shared zone
2. Exercise station with outdoor fitness equipment
3. Beach access
4. Grassed kick-about space
5. Breakout node with shade, seating and showers
6. Limestone terraces with shade shelters, picnic settings and barbecues
7. Deviation of Marine Parade
8. Public amenities
9. Parking for 90 cars
10. Overflow carpark for 200 cars
11. Interpretive elements, refer Interpretation Plan

0 15 30 45m

SCALE 1:750 @ A3

Location Diagram

Section E

N.T.S

John Black Dune Park

Key

1. Overflow carpark for 200 cars
2. Boundary of existing carpark
3. John Black Dune Park
4. Boundary of expanded Cottesloe Tennis Club

0 15 30 45m

SCALE 1:750 @ A3

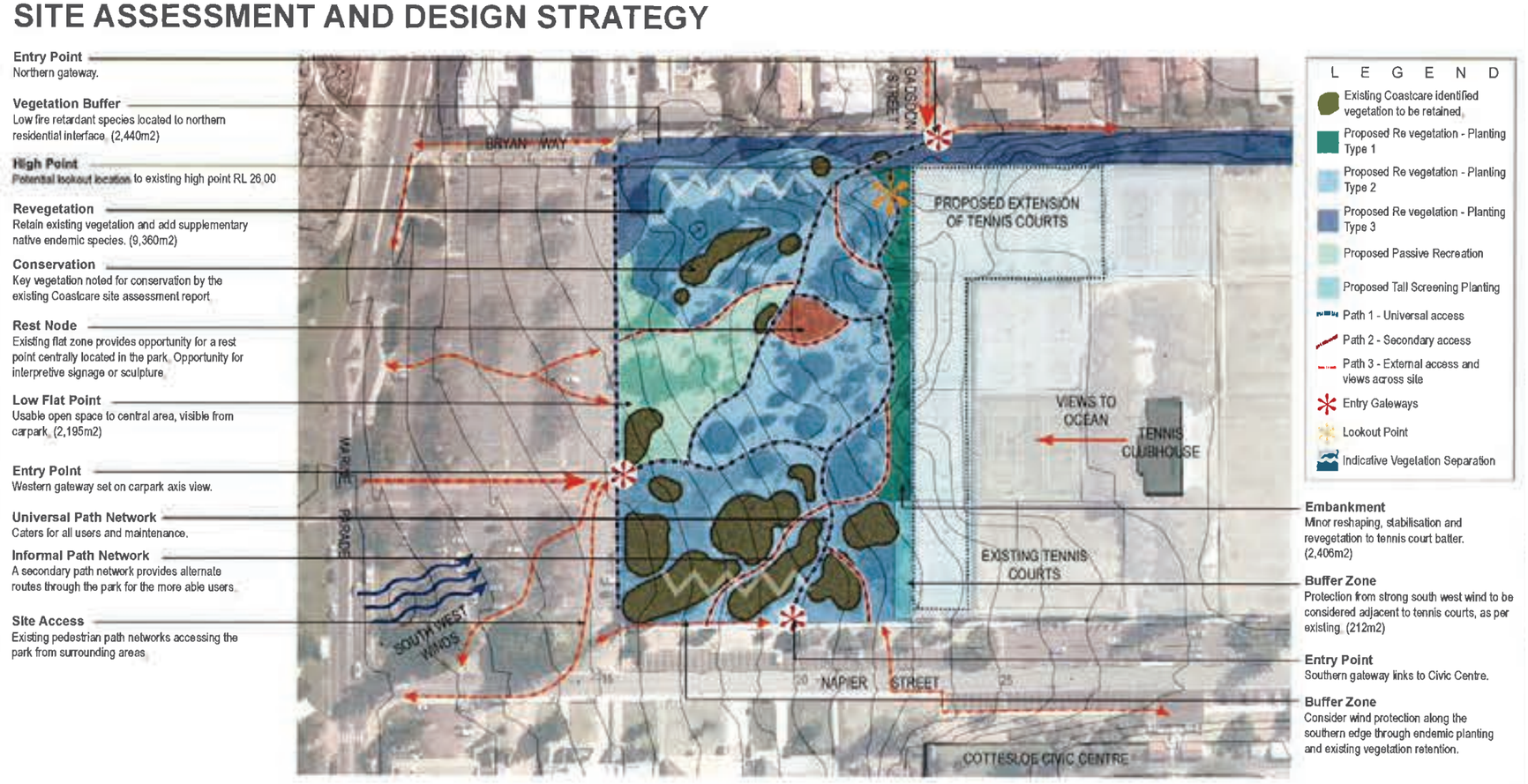
Location Diagram

Emerge Associates were engaged in 2014 to produce a concept design for John Black Dune Park. The following is from the Site Analysis and Preliminary Landscape Concept document as provided by the Town of Cottesloe.

The design aims to

- Rehabilitate the dune system with native endemic dune species
- Maintain and enhance the coastal dune character of the park
- Cater for a safe, broad range of park uses and park users
- Highlight the historical and ecological significance of the dune park
- Consider and cater for an appropriate interface to adjacent land uses
- Interpretation of Noongar significance and the natural and cultural histories and stories of Cottesloe Foreshore

SITE ASSESSMENT AND DESIGN STRATEGY



Site Analysis and Preliminary Landscape Concept. As designed by Emerge Associates, 2014

Current site condition of John Black Dune Park

Northern Parklands

Key

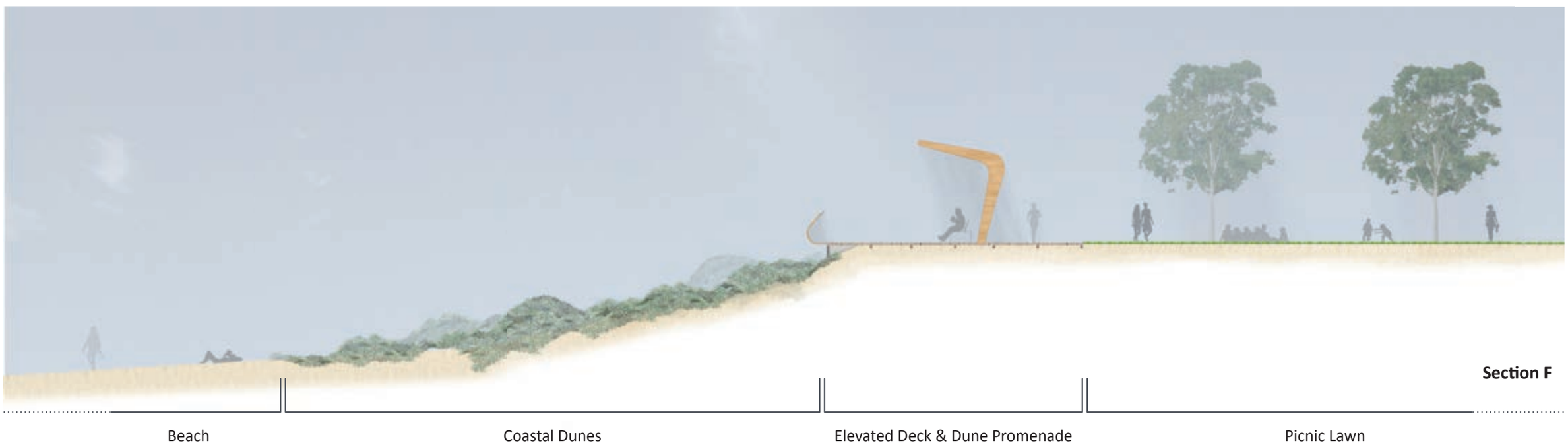
1. Breakout node with shade, seating and existing sculpture '*Centrefold*' by Mark Grey-Smith
2. Beach access
3. Exercise station with outdoor fitness equipment
4. Reconfigured parking
5. Bus stop
6. Raised crossing zone
7. Termination of boardwalk
8. Urban square at western end of Eric Street
9. Alfresco and public gathering space for future development of Ocean Beach Hotel
10. Interpretive elements, refer Interpretation Plan

0 15 30 45m

SCALE 1:750 @ A3

Location Diagram

Sections F & G



Section F

Beach | Coastal Dunes | Elevated Deck & Dune Promenade | Picnic Lawn

Section G

Coastal Dunes | Path | Embankment Planting | Path | Embankment Planting | Elevated Deck & Dune Promenade | Shared Space | Footpath

N.T.S

Visualisations

1 **View of deck and seating area looking towards the beach from playground**

2 **View of shared space looking towards Cottesloe Hotel**

7. Design Considerations

Universal Design

Legend

- Shared space (level access and accessible to all)
- Ramp access (AS1428 compliant)
- Staircase access
- Informal access (existing tracks with varying grades permitting access for able bodied)
- Beach front pedestrian and cyclist accessible route
- Urban accessible route

Vinaròs Promenade, Valencis, Spain.
Image source: Guallart

People of all abilities should be free to access and enjoy Cottesloe Foreshore Precinct.

The Masterplan has been developed cognisant of providing universal access across the parklands, along Marine Parade, and importantly, to the beach. This is achieved through path networks, and ramps that have been designed in accordance with AS1428 Design for access and mobility.

Access to the beach

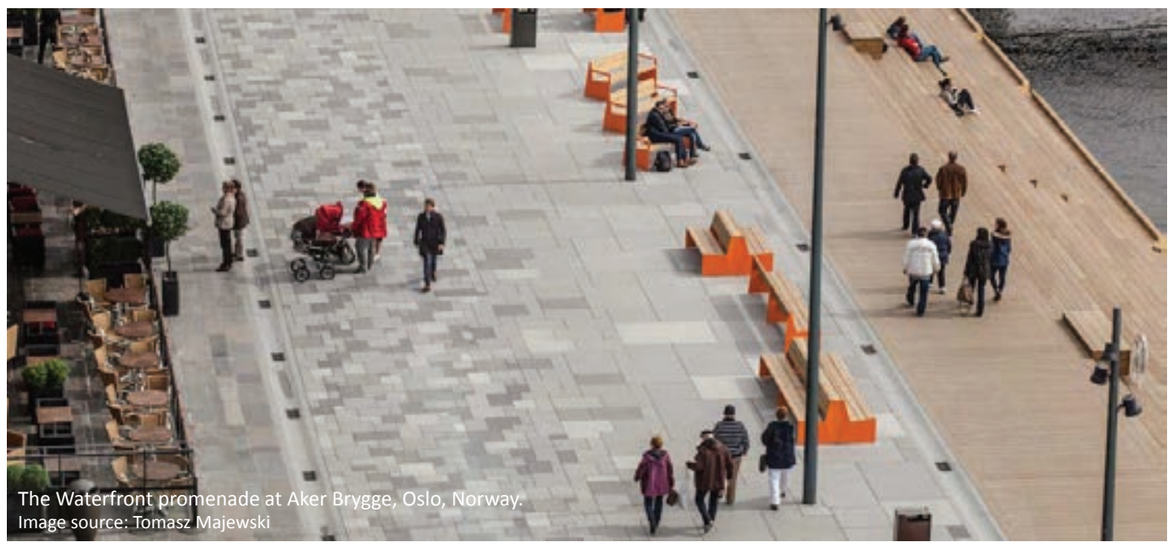
Cottesloe Beach has been the focal point for visitors to the Cottesloe Foreshore Precinct and has become one of the most popular seaside destination for local and international visitors. Despite the steep topographical conditions along the foreshore, access to the beach has been a key consideration for the development of the Cottesloe Foreshore Renewal designs. This includes establishing accessible paths to the beach at key locations and ensuring intuitive navigability throughout the foreshore precinct.

A Shared Zone Environment

A crucial part of the renewal process was to address the barrier presented by Marine Parade to the function and usage of Cottesloe Foreshore Precinct. The Masterplan design investigates the potential to ‘unify’ key areas of the Cottesloe Foreshore Precinct as a shared space environment facilitating pedestrian accessibility. This is achieved by providing a level access path throughout as well as implementing innovative interventions of traffic calming measures to achieve a safe and equally functional shared zone environment without significantly impacting on the social and economic dynamic of the area.

Traffic and Transport Design

New Road, Brighton, United Kingdom.
Image source: Gehl Architects



The Waterfront promenade at Aker Brygge, Oslo, Norway.
Image source: Tomasz Majewski

The Masterplan design has an important interface with transport function along and across the Marine Parade Corridor. Marine Parade is currently used for trips to recreation and social destinations along the foreshore and as a local connection from the south into Cottesloe's residential areas.

Marine Parade currently provides connectivity for private vehicles, pedestrians, cyclists and buses. All of these transport components are important to the function of the area, and must be maintained into the future. However, the current function of Marine Parade constrains the activity along the corridor, as well as the connection between built-form on the eastern side, and the natural, recreational uses along the foreshore. The transport component of the Masterplan has therefore focused on designing a corridor that maximises the utility of Marine Parade for the community by enhancing its attractiveness for destination and leisure trips, while reassigning other forms of trip function to alternative routes.

General Design Concept

The upgrade of Marine Parade is intended to create a highly attractive shared zone for mixed-traffic at prevailing speed of 20-30km/hr, between Forrest Street to the south and Eric Street to the north. This speed is consistent with shared use of the road surface by buses, cars and bikes, and with safe pedestrian crossing at all points along the corridor.

This environment intentionally disadvantages through-traffic by commuters and high-speed cycling groups. These demographics are expected to reroute to alternative north-south links including Broome Street and Curtin Avenue.

Destination trips by cars are still maintained, and supported through on-street and improved off-street parking facilities. The existing Transperth bus route and ongoing use of Marine Parade by coaches are both desirable functions that will be maintained.

The speed environment is to be maintained through vertical and horizontal Local Area Traffic Measures, maintaining a meandering road alignment along the project length, narrow pavement cross-section, compact roundabouts and slow points. In addition, surface textures and pavement differentiation is proposed to delineate vehicular areas from pedestrian and activity zones. The road meander is to be accentuated through the placement of planter boxes, urban furniture, trees and other vertical elements to reduce the visual width of the road, and truncating forward visibility. These factors are known to contribute to slow speeds through a 'Self-Explaining Streets' method.

Specific Design Components

Road Alignment

The road alignment has been chosen to restrict the view corridor along any road segment to less than 100m. This has been achieved by changing the existing straight alignment and creating a substantial 'meander' for approximately 500m of the project area, between Forrest Street and Eileen Street.

The section of Marine Parade north of Eileen Street is projected to act as a transition zone in this plan, operating at a slow speed but without the aggressive restrictive devices included in the highly active zone. There are opportunities to continue the slow-speed treatment through to Eric Street and beyond in later stages of development.

Compact Roundabouts

An alternative roundabout form has been proposed at two locations: Forrest Street and Napier Street. The geometry of these roundabouts has been modelled on the Transport for London's Compact Roundabout Standard and are intended to be trafficable by buses as required to support existing Transperth bus routes.

A compact roundabout is designed to slow traffic considerably, effectively requiring vehicles to stop at the approach and continue through the intersection at 10-20km/hr. The narrow circulating width creates an impediment for buses, particularly where right-turning movement is required. For this reason, the central island is proposed to be fully trafficable at Forrest Street, with the vertical geometry maintained to support the desired movement while still promoting adherence to the road rules.

Road Width

The road envelope is proposed to be maintained at a narrow 6.0m cross-section to promote low speeds. A clearance envelope of 500mm will be maintained on both sides of the road, defined by a differentiated pavement surface will allow buses to pass without risk of conflict. This envelope will be maintained clear of any vertical obstructions, with such elements including planters, street furniture and trees located hard up against the envelope to create vertical friction and further narrow visual width. In some locations it is expected that buses and other large vehicles may need to use the clearance zone to navigate corners or around obstructions.

Kerbing

No kerbs are proposed as part of the road cross-section. This maximises crossing opportunities in clear sections of the road, though pedestrians will be directed towards particular crossing locations by landscaping, planters, car parking or other obstructions.

Road Surface

The road pavement surface texture is extremely important to provide tactile feedback to drivers and cyclists and maintain slow speeds. In particular, surface texture promotes cycling speeds within the desired 20-30km/hr range, reducing potential conflicts between bikes and pedestrians.

This surface must be chosen carefully; aggressive surface texturing such as the granite cobbles is uncomfortable to cycle on as well as for pedestrians crossing with prams or mobility devices. High quality segmental pavements with a some small insets can be used to maintain the desired 'feel' for the roadway.

Tiered Cycling Environment

The Cottesloe Foreshore Precinct is an attractive destination for cyclists, as well as a route for recreational cycling activities. The use of the Cottesloe Foreshore Precinct for appropriate cycling will be encouraged through selection of path alignments and surface treatments, integrating the upgraded foreshore segments into the wider network.

High quality shared path facilities have recently been completed along Forrest Street, at the southern extent of the project area. This creates a strong link between the Cottesloe Foreshore Precinct and the Cottesloe Train Station / Fremantle Railway Principal Shared Path.

An off-street path environment is proposed for the foreshore side of the project, with cycling permitted only at pedestrian speeds. This includes a boardwalk along the beach front which should be attractive for families and other slow-speed recreational cycling trips. Within the project area, on-street cycling on Marine Parade is expected to be comfortable and safe for cyclists of all experience levels.

The traffic environment outside of the project area is less pleasant for cyclists, with higher speed traffic and 'door zone' issues from parallel parking. The on-road environment is therefore likely to be used by group riders and experienced cyclists. These on-road riders can continue along Marine Parade on-road, at the 30km/hr design speed, or redistribute to Forrest Street or Broome Street.

Care has been taken to ensure less confident cyclists can transition safely from the managed speed section to the retained off-street paths outside of the project area. Transition locations have been chosen at the Forrest Street roundabout (effectively creating a 4th leg for cyclists on the western side), and via a mixing zone adjacent to the North Cottesloe Surf Club, north of Eric Street.

Parking

On-street parking is encouraged in specific areas to support the adjacent built-form. This parking is proposed to be provided in angled parking bays to increase the overall supply. The slow speed environment allows for safe movement in and out of parking bays. The 'clearance envelope' is intended to create the visual buffer to allow traffic and cyclists to see parking vehicles and adjust accordingly.

Parking geometry has been maintained in accordance with Australian Standards.

Threshold Treatments

The section of Marine Parade between the Forrest Street and Napier Street compact roundabouts is expected to be raised to verge level, creating a raised threshold at all approaches. The roundabouts will be included in the raised area, creating vertical deflection on the approaches. This is considered vital due to the difference between the design speed of these roundabouts when compared to Austroads standard geometry.

A secondary threshold treatment is located at the northern entry, Eric Street, to define the slow-speed area and create a transition zone to the activated section of roadway.

Signage and Linemarking

Signage will be maintained at an absolute minimum, restricted wherever possible to speed limits on the approach to the project area and parking restrictions. The slow speed nature of the road eliminates the need for statutory or warning signage within the activated zone.

Stormwater Management

Auckland Waterfront
Image source: Metro Green

Proposed Stormwater Management Strategy

The proposed drainage strategy is to retain and infiltrate the 10 year ARI storm event within a series of bio-retention swales and underground storages within the vicinity of Marine Parade. The 100 year is expected to flow overland and discharge to the ocean. A post development hydrological model of the proposed works has been undertaken using XPSWMM[1]. The model was built to characterise the behaviour of the post-development environment.

Post Development Modelling

The post development was modelled as three (3) catchments. The makeup of each catchment is displayed in **Table 1-1**.

10yr ARI Storm Event

During the 10 year ARI storm event a retention volume of approximately 3600 m3 is required across the site. This volume is to be stored in the proposed underground storage basins and ultimately infiltrated into the ground. It is noted that prior to any construction, detailed analysis is required.

Table 1-2 provides further details on the underground storage basin capacity.

Modelling Assumptions

Assumptions adopted for post development surface runoff modelling are as follow:

- Underground storage basin depth of 1.8 m was adopted in the modelling.
- Infiltration rate of 5 m/d2 was assumed for the proposed underground storages (200 mm/hour).
- Fraction impervious of 40%, 80% and 10% was applied for Residential, road and Major Open Space respectively.
- Any flooding over the 10 year ARI storm event will be flowing overland and ultimately discharge into the ocean.

[1] XPSWMM is a sophisticated hydrological and hydraulic software package which has the ability to generate hydrographs to model open channels, pressure flow networks, backwater effects and stage storage relationships using a complex routing package.

[2] In the concept stage, infiltration rate of 200 mm/hr was assumed for Cottesloe. It is highly recommended that this infiltration is confirmed and further assessed in the detailed design.

Table 1-1 Catchment Areas Breakup

Catchment ID	Total Area (Ha)	Residential (Ha)	Road and Car Park (Ha)	Public Open Space (Ha)
1	8.72	5.22	1.79	1.71
2	10.68	2.89	3.23	4.56
3	12.87	8.17	2.10	2.60

Table 1-2 10 Year ARI Storage Retention Volumes

Catchment ID	Infiltration Rate [2] (mm/hour)	Storage Area (m2)	Storage Depth (m)	Total Retention Volume (m3)
1	200	600	1.8	980
2	200	700	1.8	1260
3	200	840	1.8	1390

Water Quality Treatment

Eric Street

The flow from Eric Street would be captured at the junction of Eric Street and Marine Parade via side entry pits sized to capture the 100 year ARI event and directed into the underground storage. The flow from the underground storage should then infiltrated into the ground (10 year ARI) or directed to the ocean for discharge generated from events greater than the 10 year ARI.

Car-Park (corner of Napier St and Marine Pde)

The flow from the 1 year ARI storm event within the carpark area at the junction of Napier Street and Marine Parade is proposed to be treated onsite within the proposed rain gardens. Treatment area required for this site is 200 m2.

Napier Street

The flow from Napier Street would be captured at the junction of Napier Street and Marine Parade via side entry pits sized to capture the 100 year ARI event and directed into the underground storage. The flow from the underground storage would be infiltrated into the ground (10 year ARI) or directed to the ocean for discharge generated from events greater than the 10 year ARI.

John Street

The flow from John Street would be captured at the junction of John Street and Marine Parade via side entry pits sized to capture the 100 year ARI event and directed into the underground storage. The flow from the underground storage would be infiltrated into the ground (10 year ARI) or directed to the ocean for discharge generated from events greater than the 10 year ARI.

Forrest Street

The flow from Forrest Street would be captured at the junction of Forrest Street and Marine Parade via side entry pits sized to capture the 100 year ARI event and directed into the underground storage. The flow from the underground storage would be infiltrated into the ground (10 year ARI) or directed to the ocean for discharge generated from events greater than the 10 year ARI.

Marine Parade

Rain gardens are proposed alongside Marine Parade for water quality treatment purposes. The total area of treatment required to treat the flow from the 1y 1hr ARI storm event is assumed to be 2% of the equivalent impervious road surface runoff area. Total required treatment area along Marine Parade is approximately 80 m2. It is estimated that flows generated from events larger than 1yr 1hr ARI and smaller than 10 year ARI storm events will bubble down to underground storage units and infiltrate. Events larger than the 10 year ARI storm event are expected to be directed to the ocean for discharge.

Stormwater retention basin Cottesloe

Structures

A visual assessment was conducted to determine the condition of the retaining walls at all of the grassed terraces adjacent to the Indiana Tea House building. The assessment includes the structural integrity of the walls, condition of handrails to the adjacent carpark and recommendations for repair and maintenance.

Visual Assessment and Recommendations

It was observed that all stone retaining walls were generally in good and stable conditions. Shrinkage cracks were observed on the mortar joints between the stone, however in general, the mortar is still firmly intact to the stone. It is recommended that the mortar joints are inspected, and any loose parts are removed and patched with repair mortar.

Vertical crack along the height of the wall were observed at some location. Thought it seems that those cracks were not excessive, and have been addressed on previous repairs, it is recommended that observation to be made on those cracks, and the cracks patched with repair mortar.

The concrete retaining wall at the base of the northern terraces was generally in good condition. Shrinkage cracks were observed along the height of the wall at regular intervals. Exposed reinforcement was observed at some location. This reinforcement is badly corroded and need to be replaced, and covered.

The galvanised steel railings at the carpark area are generally in good condition. Corrosion was observed at the joints between the post and horizontal railing. Some connection points between the post and horizontal railing were missing, and are a hazard. It is recommended that the missing connections are reinstated, and corrosion protection applied to the railing.

A copy of the full assessment report is enclosed as Appendix 3.

Coastal Hazard Risk Management

Cardno have developed a Coastal Hazard Risk Management and Adaptation Plan (CHRMAP) in accordance with Western Australian Planning Commission (WAPC) guidelines to demonstrate that current and potential future coastal hazards have been considered. This report addresses the initial steps in the CHRMAP process; namely establishing the context and identifying risks through a coastal vulnerability assessment.

The context for coastal management has been established through assessment of previous investigations, initial stakeholder consultation and the review of environmental conditions and processes at the site. This has allowed the determination of success criteria, against which identified risks will be evaluated. These criteria are:

- Environment and sustainability;
- Maintain and protect public safety;
- Protect and enhance the local economy and growth; and
- Protect community and lifestyle.

A site investigation was undertaken to assess the environmental setting of the study area and the layout of existing infrastructure at the site. This site visit, in conjunction with a review of existing coastal investigations in the area, allowed a preliminary assessment of coastal hazards and their associated risks.

Coastal hazards within the study area have been quantified and mapped through a coastal vulnerability assessment. This assessment follows the guidelines set out the State Planning Policy No 2.6 - State Coastal Planning Policy (SPP2.6) (WAPC, 2013). The coastal vulnerability of the study area now and for the future planning horizons 2040 and 2070 has been considered. Overall planning setbacks for erosion were developed by combining the potential for short-term (storm induced) erosion with potential long term erosion; comprising historical shoreline movement trends and that due to predicted sea level rise. Coastal inundation due to water level variations and wave setup has also been considered for current and future sea level rise scenarios.

In the next phase of the project, accompanying the finalisation of the concept design, risks will be evaluated in detail by analysing the likelihood and consequence of impacts due to the determined coastal hazards. This evaluation will draw on the success criteria to assess the acceptability of each risk. Advice will then be provided as to the most appropriate locations for various land-use proposals, and any adaptation options required to mitigate the risks of these hazards. Adaptation options will follow the SPP2.6 ‘Avoid, Retreat, Accommodate and Protect’ hierarchy.

A copy of the full report is enclosed as Appendix 4.

Hardscape Palette

A palette of materials and products has been developed to ensure a consistent approach across the Cottesloe Foreshore Precinct. Recommendations are provided on paving, furniture and structures, signage, wayfinding and lighting.

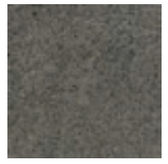
The palette has been developed with consideration for quality, value and maintaining the 'look and feel' of the suburb of Cottesloe.

Paving

Concrete pavers

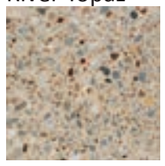
Concrete pavers will be used to define the shared space and pedestrian pathways on the building side of Marine Parade.

Urbanstone Concrete Pavers
Shared Space Roadway
Gunmetal



Swinbourne Black

Marine Parade Pathways
River Topaz



Estuary Grey

Natural stones and cobbles

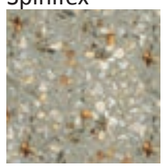
High quality locally sourced stones and cobble units will be used as features, traffic calming and texture differentials to selected areas of the shared spaces.

In-situ Concrete Paving

A high quality exposed aggregate finish will provide a subtle and cost-effective ground treatment using locally sourced aggregates which complements those selected for the concrete pavers to the shared spaces.

Holcim Aggregate Mix
Jarrah

Spinifex



Watte

Decking

High quality synthetic decking boards will be used to define paths and platforms on the beach side of Marine Parade.

Millboard Enhanced Grain
- Golden Oak

Asphalt

Red asphalt will be used to highlight key access ways and black asphalt to define the surfacing of car parking bays and road ways.

Street Furniture & Structures

A site specific suite of seating, handrail and shade structure elements is proposed for the Masterplan. These elements provide the greatest opportunity to contribute to the new identity and character of Cottesloe Foreshore Precinct.

Design Concepts

The furniture suite reinforces the overarching design concept established in the Masterplan. The form and design rationale of the furniture suite reflects the natural qualities associated with the beach combined with the distinctive features of iconic built form characteristic to Cottesloe Foreshore Precinct.

Urban Furniture palette

The proposed palette of furniture items combines slated hardwood timber, stainless steel and concrete into a simplistic and refined design language.

The selected materials have been chosen to ensure sustainability, longevity and ease of maintenance. Where possible details, fixings and finishes will be standardised across the project.

Proprietary Products

Examples of Bespoke Designs

Bench seating

Feature lighting integrated with furniture

Bollard seat

Proposed Bespoke Designs

Handrail design with interpretation opportunities

Seating and shade structure

Planting Palette

Plant species selection will be determined by a combination of site specific requirements,e.g. soil, exposure and landuse) and application of design intent.

The proposed palette of plant species is based on promoting and showcasing vegetation that is native to the Cottesloe coastal region and in combination with exotic species to complement existing planting and trees in reflecting the local and cultural character of the Cottesloe Foreshore Precinct.

The final species selection will be sourced from this proposed palette.

Trees Palettes

Shade Trees for Public Open Spaces

Native Palette

Eucalyptus gomphocephala, Tuart

Large tree growing 10-30m high with rough bark. Flowers are white during January to April.

Eucalyptus rudis, Flooded Gum

Large tree growing 5-20m high with rough bark. Flowers are white during July to September.

Casuarina obesa, Swamp Sheoak

Small tree growing 1.5-10m high. Flowers during January to December.

Melaleuca lanceolata, Black Paperbark

Small tree growing 5-10m high. Flowers are white-cream, during January to September.

Exotic Palette

Metrosideros exselsa, NZ Christmas tree

Medium tree growing 8-12m high. Flowers are red bottlebrush like, during November to March

Street Trees

Native Palette

Eucalyptus platypus, Moort

Small tree growing 4-10m with smooth bark. Flowers are white/cream-yellow-green, during September to December or January to March.

Melaleuca lanceolata, Black Paperbark

Small tree growing 5-8m high. Flowers are white-cream, during January to September.

Exotic Palette

Metrosideros exselsa, NZ Christmas tree

Medium tree growing 8-12m high. Flowers are red bottlebrush like, during November to March

Screening and Car Park Trees Palette

Eucalyptus gomphocephala, Tuart

Large tree growing 10-30m high with rough bark. Flowers are white during January to April.

Casuarina obesa, Swamp Sheoak

Small tree growing 1.5-10m high. Flowers during January to December.

Melaleuca lanceolata, Black Paperbark

Small tree growing 5-10m high. Flowers are white-cream, during January to September.

Banksia menziesii, Menzies' banksia

Small tree or large shrub growing 2-8m high. Flowers are pink/red/yellow, during February to October.

Agonis flexuosa, Sweet Peppermint/ Willow Myrtle

Small tree or large shrub growing 5-10m high. Flowers are white, during July to December.

Source information and photos are from Cottesloe Coastcare Association and FloraBase

Plants Palettes

Street Shrubs and Groundcovers Palette

Austrostipa elegantissima, Feather spear-grass

Perennial grass growing 0.13-2m high, 1.5m wide.

Banksia dallanneyi, Couch Honeypot

Small shrub growing to 0.3m high. Flowers are cream-yellow-brown-pink-green during May to October.

Conostylis candicans, Grey Cottonhead

Small shrub growing to 0.4m high. Flowers are yellow-brown during July to november.

Eremophila Glabra, Kalbarri Carpet

Small shrub growing 0.1-0.3m high, 1-1.5m wide. Flowers are green-yellow-orange-red-brown during March to December.

Grevillea crithmifolia (prostrate), Green Carpet

Small dense shrub growing 0.3-0.6m high, up to 3m wide. Flowers are white/white-pink during August to November.

Hibbertia hypericoides, Yellow Buttercups

Small twiggy shrub growing 0.2-1m high. Flowers are yellow during April to December.

Kennedia prostrata, Scarlet Runner/ Running Postman

Prostrate or twining shrub growing 0.1-0.15m high. Red flowers during April to November.

Leucophyta brownii, Cushion Bush

Erect, compact shrub growing to 1m high, 1m wide. Flowers are yellow during December to January.

Rhagodia baccata, Berry Saltbush

Spreading shrub growing 0.3-2m high. Flowers are cream-yellow/green during February or April to May or October to December.

Scaevola crassifolia, Thick-leaved Fan-flower

Small shrub growing 0.1-1.5m high. Flowers are blue/white during July to December or January to February.

Park and Playground Shrubs and Groundcovers Palette

Banksia dallanneyi, Couch Honeypot

Small shrub growing to 0.3m high. Flowers are cream-yellow-brown-pink-green during May to October.

Carpobrotus virescens, Coastal Pigface

Prostrate shrub growing 0.1-0.3m high, 0.5-3m wide. Flowers are purple-pink/white during June to December or January.

Conostylis candicans, Grey Cottonhead

Small shrub growing to 0.4m high. Flowers are yellow-brown during July to november.

Eremophila Glabra, Kalbarri Carpet

Small shrub growing 0.1-0.3m high, 1-1.5m wide. Flowers are green-yellow-orange-red-brown during March to December.

Grevillea crithmifolia (prostrate), Green Carpet

Small dense shrub growing 0.3-0.6m high, up to 3m wide. Flowers are white/white-pink during August to November.

Grevillea preissii (prostrate), Sea Spray

Small shrub growing to 0.5m high, 3m wide. Flowers are red during June to September.

Hemiandra pungens, Snakebush

Small shrub growing 0.5-1m high. Flowers are white/blue-purple/pink during January to December.

Hibbertia hypericoides, Yellow Buttercups

Small twiggy shrub growing 0.2-1m high. Flowers are yellow during April to December.

Leucophyta brownii, Cushion Bush

Erect, compact shrub growing to 1m high, 1m wide. Flowers are yellow during December to January.

Rhagodia baccata, Berry Saltbush

Spreading shrub growing 0.3-2m high. Flowers are cream-yellow/green during February or April to May or October to December.

Perth

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