Double Bay, Australia

Public Domain Lighting Strategy

Adopted 27 June 2016

Contents

1 Introduction

1   Introduction

This document outlines the lighting
Masterplan for Double Bay. It provides
the strategy and plan to guide the overall
vision, and site wide connecting elements
of the environment after dark, it also
provides further guidance on the relevant
projects.

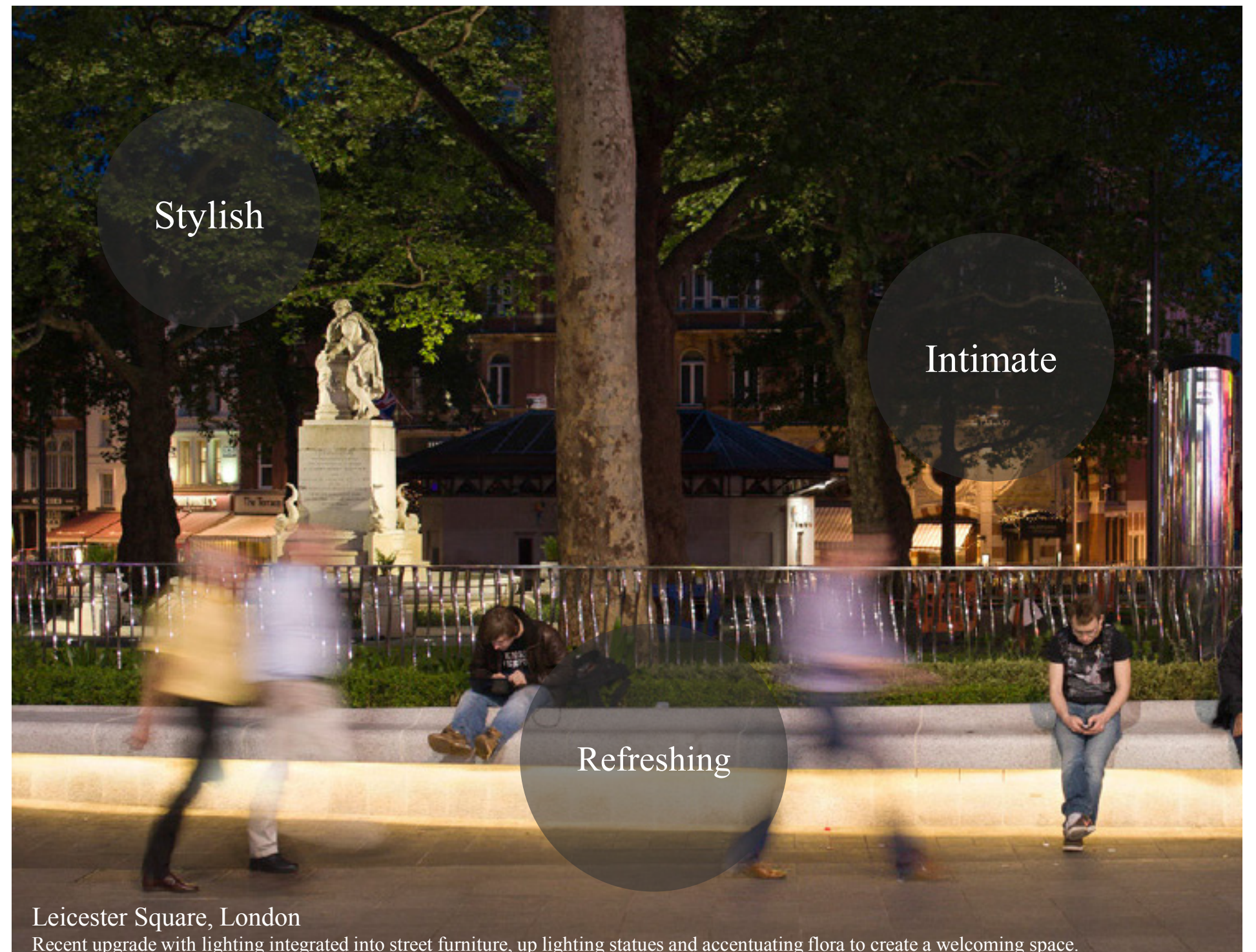# 2 Executive Summary

Stylish, Intimate, Refreshing

This Strategy and Plan makes recommendations for how future lighting projects are to be developed and delivered to create a cohesive night-time experience within the Double Bay precinct. It provides guidelines for new lighting infrastructure projects and strategies that will enhance visitor experiences and support creativity in the community.

To achieve this, both functional and creative lighting overlays have been developed; these are to be the basis of future lighting projects. In compiling this document a number of sites within the precinct have been identified as pilot projects, and some priorities have also been targeted for consideration of more immediate lighting interventions.

Double Bay is a stylish bay side village that at night-time is defined by its dining and social economy, along with a blend of natural landscaping and architectural features. A post-top lantern redesign is recommended in this report. It is expected that this new signature will play a significant role enhancing the prestige and unique character of Double Bay.

The public domain lighting strategy has been developed to create a distinctive and elegant night-time experience and to complement the natural beauty of the area. This strategy has been developed over nine months and included key stakeholder workshops and meetings.

This process has been informed by and developed to support the Double Bay Place Plan 2014 and is consistent with the principles of place-making in order to maximise Double Bay's distinctive brand.

Stylish

Intimate

Refreshing

Leicester Square, London
Recent upgrade with lighting integrated into street furniture, up lighting statues and accentuating flora to create a welcoming space.

3 Key Understandings

This section identifies and outlines background knowledge and the existing conditions of Double Bay. These have been used to inform the key objectives for the Double Bay business area.

The design process for this strategy began with a NightSeeing™ program held as part of the Future Cities program. The workshop, and a series of site visits, identified the key understandings of the current night-time conditions, the desires of a range of stakeholders, and a number of objectives for future illumination projects.

Key Understandings

•   Transport links are dark, unsafe and unintuitive

•   Identify the town centre as Knox St, the car park or Guilfoyle Ave

•   Post-top lanterns are bright and glary

•   Cars don't change speed as they drive through Double Bay

•   Lack of lighting hierarchy to guide sight-lines through the streets

New South Head Road

Cross Street

Know Street

Kiora Lane

Kiora Lane

Arcade

Ground level lighting only

Pathway to Ferry

Heritage lighting

4 Key Objectives

This section outlines the desires and goals for the Double Bay business area and all future lighting projects.

The images to the right include those that were chosen by participants in the NightSeeing™ workshop. These represent the collective aspirations for Double Bay at night.

Following this Arup worked with stakeholders, and consultants within the client team, to identify and agree these key objectives.

Key Objectives

- Develop distinctive gateways from land and water

- Build on the bay's natural beauty

- Connect Guilfoyle Ave to the centre

- Activate streets with footpath dining and attractive, vibrant displays

- Creating a distinctive and elegant after dark ambience in the public domain of Double Bay
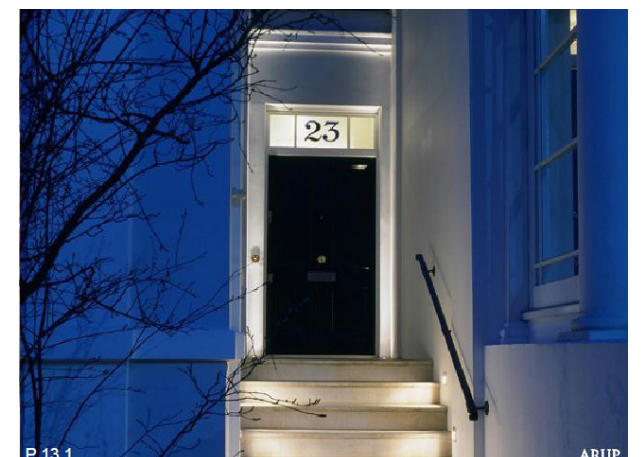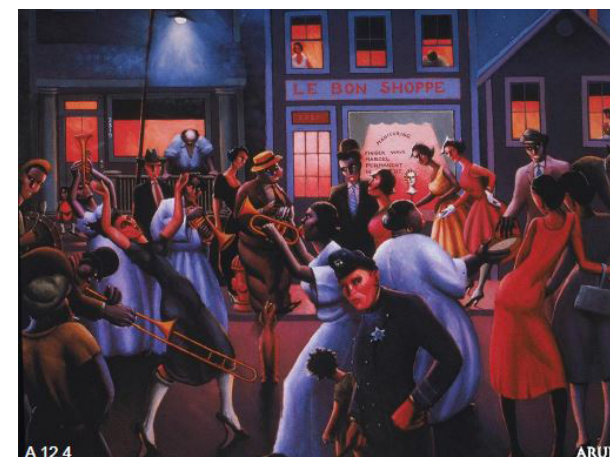
5 Lighting Vision

'Stylish is the very centre, defined by the lanterns. Refreshing is a layer of soft light - something like a breeze. Intimate is strolling with a friend from the walkways into the centre' Leni Schwendinger Arup, Leader Nighttime Design

To meet the key understandings and objectives the design principles below have been developed.

Design Principles

- Accentuate gateways from land into the centre and from water into the suburb

- Design iconic and distinct lanterns

- Vertical lighting to heritage and notable buildings

- Uplighting to trees and central islands to accentuate central nodes and gathering spaces through light, after dark

- Create nodes along axis street by accenting trees and furniture

- Integrate smart lighting and controls for precinct scene setting

Vertical illuminatine to facades above ground retail

Variable lighting temperatures for dinning and pedestrian traffic

Lighting incorporated into furniture

6 Functional Overlay

6.1 Hierarchy of roads and streets

The functional overlay provides guidance regarding compliance with relevant design codes and the hierarchy which defines the ambient brightness of individual streets and how they relate to one another.

Vehicular and pedestrian routes

A clear and consistent, simplified hierarchy of illuminance and brightness is to be employed along with energy efficient, warm white light being utilised for all secondary and tertiary roads and cool light for primary streets.

Primary routes

The primary routes consist of the perimeter roads and the main vehicular and pedestrian axis within the site. Where applicable lighting poles at approximately 8-10m high are typically used, providing a sense of regularity and formality defining these key axes.

Secondary routes

The secondary routes are both vehicular and pedestrian, primarily two lane roads with either landscaping or colonnades on either side. The lighting for these roads is to be developed to use either staggered single lantern columns or building-mounted luminaires where appropriate. The formality of the street lighting is therefore reduced in the secondary routes with mounting heights of luminaires between 6-8 metres.

Tertiary routes

The tertiary routes are pedestrian only and incorporate the primary pedestrian routes through the suburb. Where appropriate building-mounted luminaires are to be considered at a human scale of 4-6 metres in height.

Code		Level
P1	▬	7 lux
P2	▬	3.5 lux
P3	▬	1.75 lux
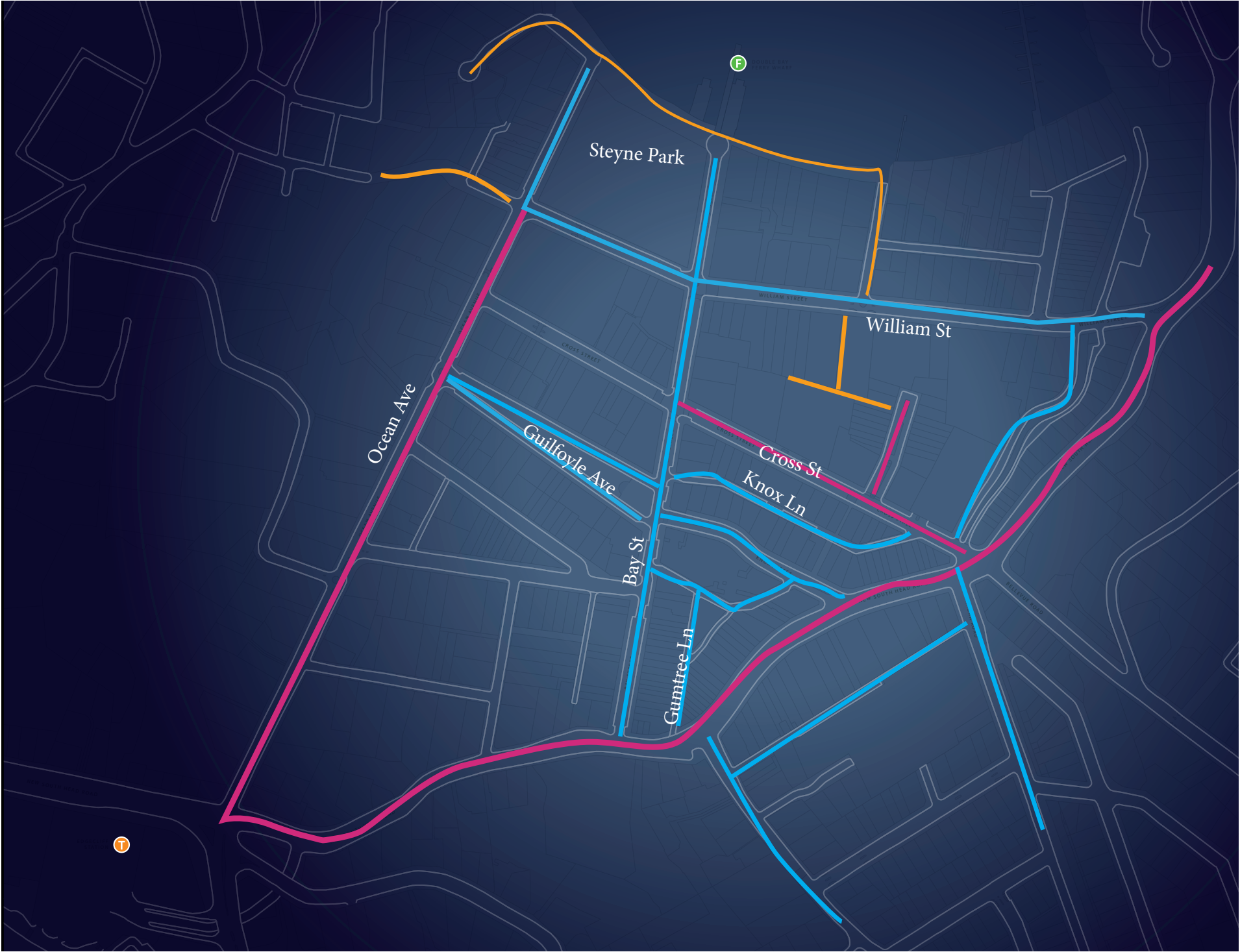
6 Functional Overlay (cont.)

6.2   Hierarchy of public spaces

A clear hierarchy of spaces will be employed and reinforced through the use of light after dark. General lighting shall be developed using warm white, while the detailed elements and landscape features may use contrasting cool white light or coloured accent lighting.

Primary spaces

The primary spaces are to be bright, dynamic and function as large scale gathering or event spaces. The primary spaces are to be further considered through accentuated building facades and colonnades; and an inventive, celebratory approach is envisaged. The primary spaces will cater both for local users and visitors.

Secondary spaces

The secondary spaces are district centres and decorative architectural lighting should be considered carefully but not to the same intensity as the primary spaces. These spaces are local meeting places and are to support gathering and meeting rather than large scale events. As such, landscaping and furniture is to be highlighted where possible.

Tertiary spaces

The tertiary spaces are primarily in residential areas and are to be more subtle with a focus on main pathways and building entrances. They are to be quiet reserves that are visually appealing when catching a glimpse through a doorway. Small landscapes, sculptures and features are to be highlighted to support private and semi public/private meeting places as well as areas of rest and solitude.

Code	Level
▬	Primary
▬	Secondary
▬	Tertiary
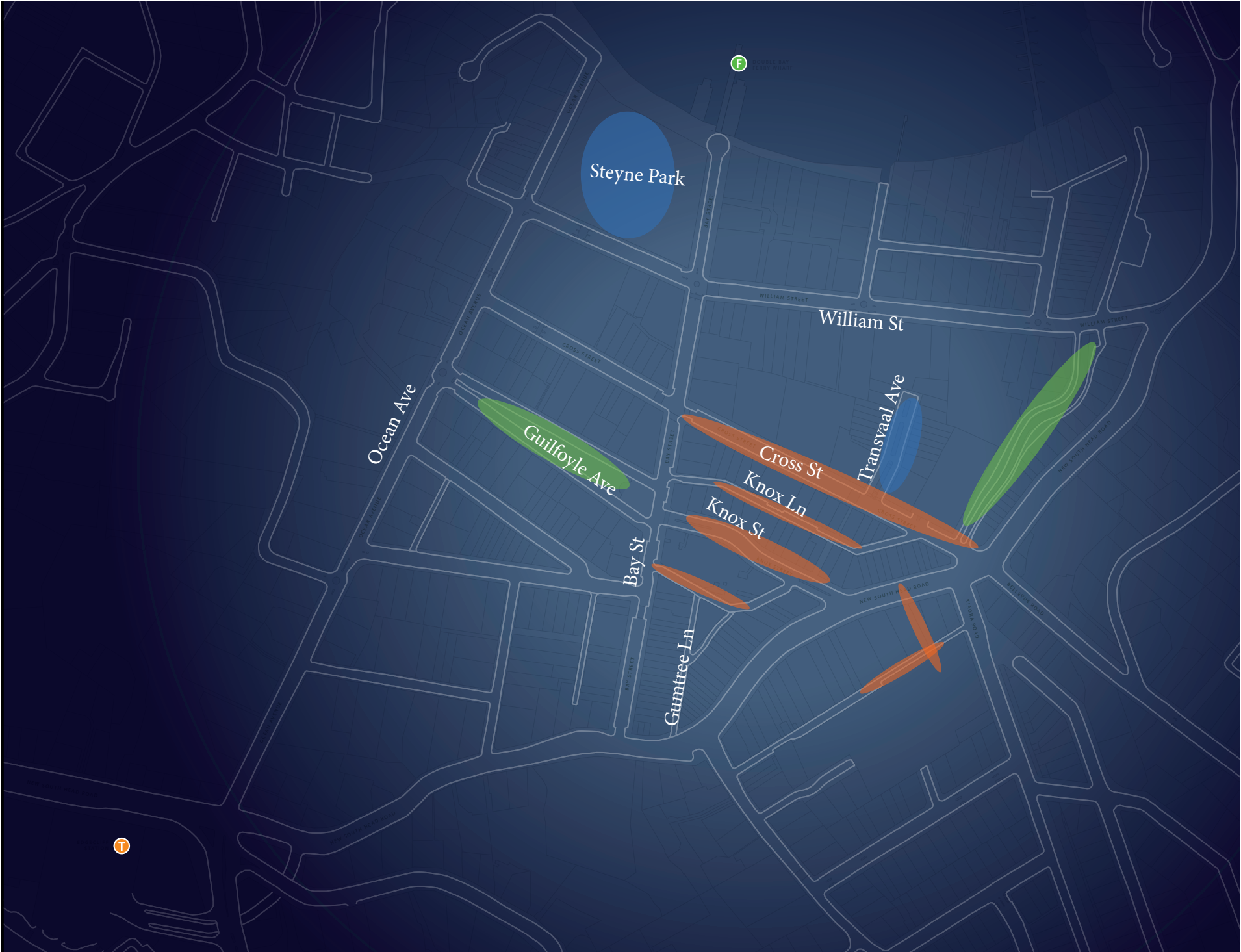
7 Creative Overlay Strategy

The creative overlay of the lighting strategy provides guidance for the illumination or modification of agreed night-time assets within Double Bay. These range across natural features, architectural elements and existing lighting equipment.

Key elements

The key elements of Double Bay are the existing assets and attributes of the area that can be further enhanced to encourage visitors to enter and move through the suburb.

Gateways

There are currently five significant gateways identified via land and one from water. These gateways can be further enhanced to contribute to distinctive and memorable sense of arrival and departure to Double Bay at night.

Trees and Furniture

To emphasise and reinforce the key public spaces as nodal meeting and gathering points, lighting for furniture and trees is to be explored in the primary, secondary and in careful consideration tertiary spaces.

Sculpture and Art

The illumination of public art after dark can serve to enhance the work of art itself, create a form of 'light art' or simply improve the everyday experience of those moving in and around Double Bay.

Axis and Vistas

The vistas into Double Bay provide glimpses through to buildings and spaces within the suburb. These then create axis which can be further enhanced to encourage people to move through Double Bay and enjoy the night-time atmosphere.

GATEWAYS

EXISTING TREES

EXISTING SCULPTURES

AXIS AND VISTAS

Harbour Gateway

Steyne Park

William St

Ocean Ave

Guilfoyle Ave

Cross St

Knox St

Knox Ln

Transvaal Ave

Bay St

Gumtree Ln

Eastern Gateway

Western Gateway

8 Creative Overlay Plan

The Overlay Plan proposes different lighting strategies, techniques and styles to highlight the key elements, creating an holistic nighttime experience.

Vertical illumination

Double Bay has a number of unique and significant buildings and sandstone walls that are distinctive to the suburb.

The sandstone retaining walls of different eras and style are a unique feature within the area and line the valley from both East andwest; approaches. Illuminating the sandstone retaining walls and notable building facades at gateways will add to the sense of arrival at night, with an aspiration that drivers slow down and appreciate the night-time vistas through the suburb.

Lanterns

The lanterns redesign will provide a stylish and recognisable aesthetic to Double Bay. It is proposed that they are installed the full length of Bay St to link the ferry terminal and the Double Bay centre.

These new lanterns will have the ability to incorporate Smart Lighting Controls and functionality, flexibly and control.

Trees and furniture lighting

To emphasise and reinforce the gateways, key public spaces and gathering spaces illuminate the trees and plants using a combination of in ground up lighting where possible and stake uplighting in cool white light to highlight the green foliage and provide brighter, safer places.

Sculpture and art lighting

The existing sculptures within Double Bay should be lit using a combination of light cool white light. New catenary lighting at gateways and consideration of light art installations for key public areas.

Axis and Vistas

In-conjunction with upgrading of lanterns, vertical illumination, tree lighting and illuminating to existing art, catenary lighting is included in key areas to create interest and provide a sense of discovery for visitors to Double Bay.

LANTERNS

VERTICAL ILLUMINATION

TREE LIGHTING

SCULPTURE LIGHTING

CATENARY LIGHTING

8.1   Lanterns

This investigation would fit neatly into the key concepts: Stylish, intimate, refreshing.

To provide a distinctive, stylish and cohesive wayfinding and links with transport hubs, the lanterns should be extended to connect the Ferry and Double Bays centre.

Lanterns are universally beloved. Post-top light elements symbolize the very first public lighting. The collective memory of the candle and gas flame colours our psychological vision of the lantern.

In Double Bay spherical lanterns line the main streets - creating a effective through-line, a rhythm of illumination. Here, it is suggested that a refreshingly new take on lantern forms are explored to create a new emblem for the centre.

Refurbishing or replacing the existing lanterns will enhance the lighting functionality, quality and aesthetics. This is approached with an understanding of the existing asset ownership. Currently the lanterns and poles are owned by different organisations therefore an appraisal of this ownership structure should be completed prior to this work being carried our.

• Extend lanterns from Ferry along Bay St to centre of Double Bay
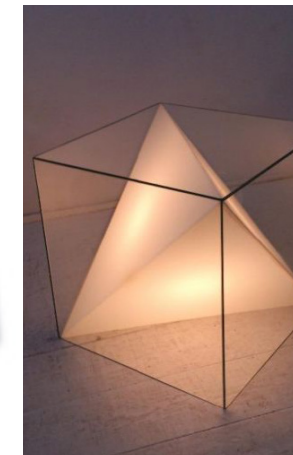
• Lanterns on one side of Knox Ln
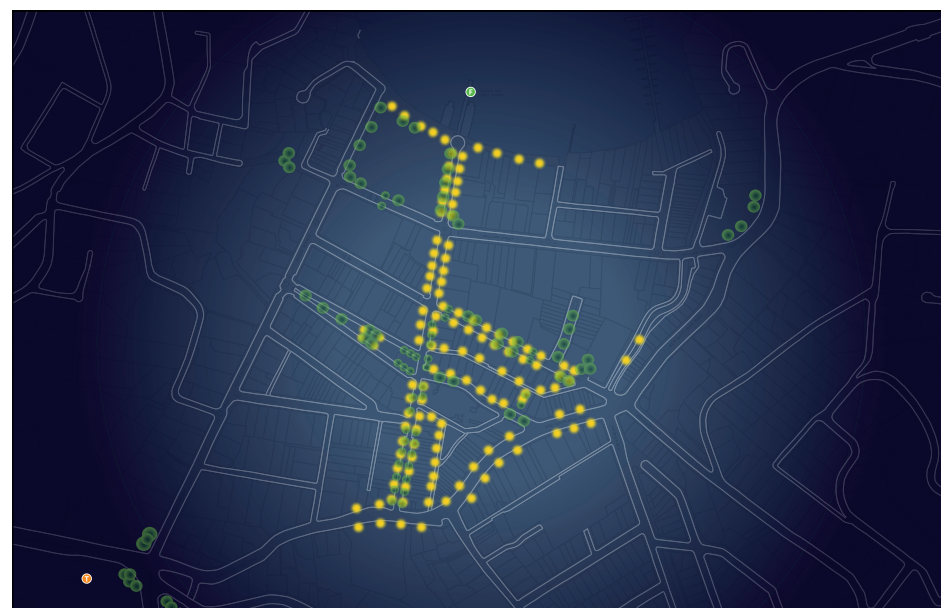
Tall modern torches, Melbourne

Creative Overlay
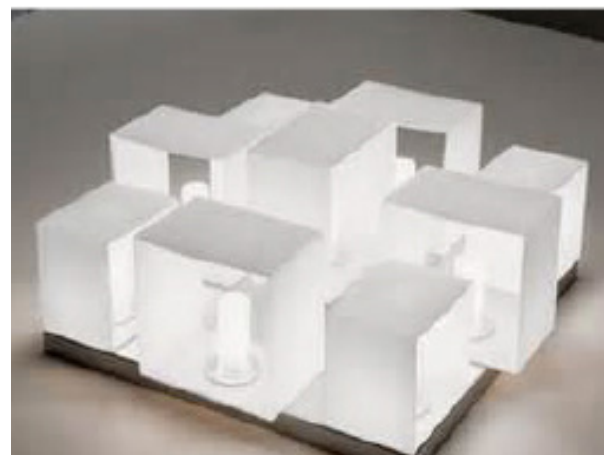
Geometric and unexpected
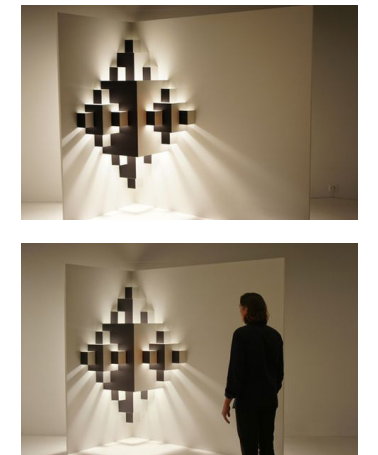
8.2   Catenary Lighting

The lighting of permanent public art is to be considered from the onset, along with the possibility for permanent and temporary light festivals to encourage social interaction for historic, religious or civic events and dates.

Permanent catenary lighting is to be located within primary and secondary locations of the Double Bay business area to be agreed with the Council. The lighting will factor in control for dimming and colour change. Colour scenarios will allow for flexibility. Programmatic possibilities might include artist curation of the scenarios.

Primary locations for consideration for permanent catenary lighting are

• Western Gateway

• Eastern Gateway

• Knox Lane

Catenary lighting can also be considered for other locations such as entertainment and eating hubs, e.g. Kiaora Lane and Transvaal Ave.

Creative Overlay Gateway

Catenary lighting to main gateways approaching Double Bay cent
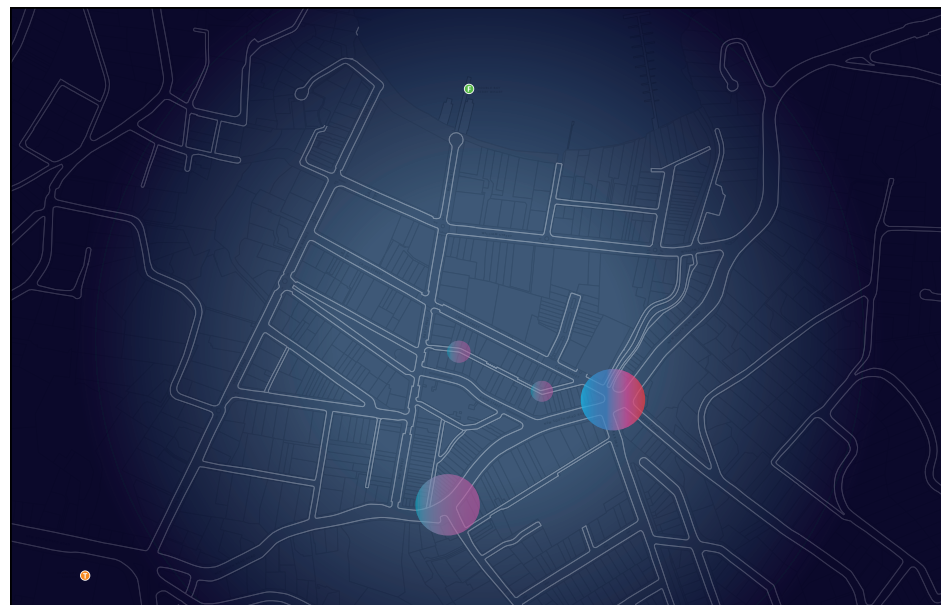
Artist Interpretation New South Head Rd festival or artist curation

Programming and ability to colour
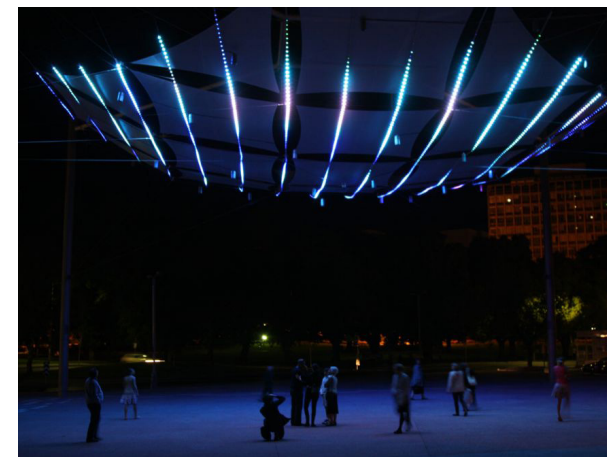
Turin Lighting festival

Turin Lighting festival

8.3   Vertical Illumination

It is envisioned that gateways will be further enhanced by accentuation of existing assets, such as notable buildings. Here, architectural lighting would enhance details and vertical walls.

The sketches on this page show various Double Bay architectural assets. It is proposed that modified or additional lighting would enhance the nighttime character of the suburb.
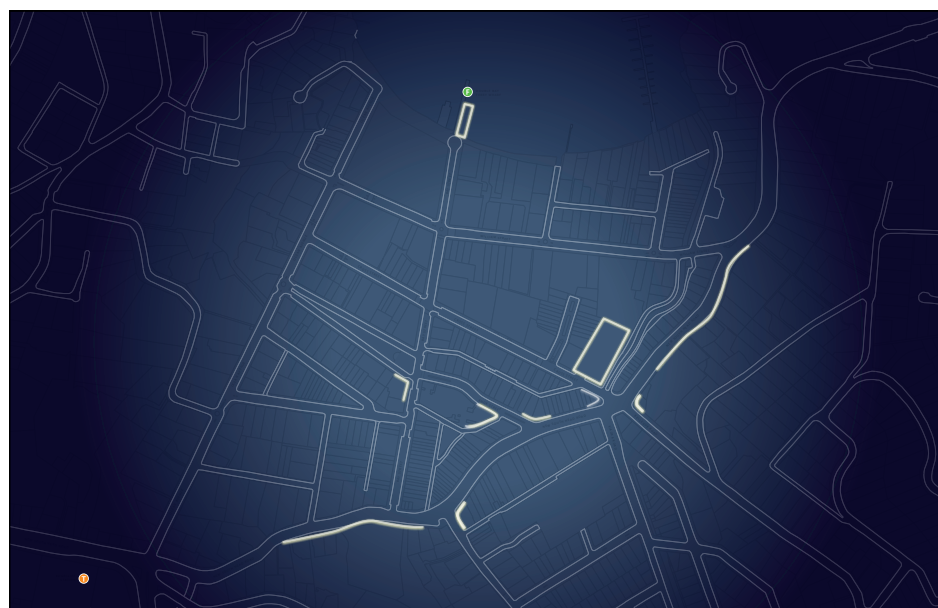
- 18 Footers
- Ferry Wharf
- Coopers Corner
- Clock Tower
- Sandstone retaining walls NSH Road
- Corner of Knox St and NSH Road
- Cosmopolitan

18 Footers

Ferry wharf approach from water

Creative Overlay Vertical Illumination

Illuminate facade of boat house with variation in brightness

Double Bay approach from water. Consider lighting to handrail and building facade

8.3   Vertical Illumination (cont.)

The intersections streets of New South Head Road with Cross Street and Gumtree Lane have been identified as main gateways into Double Bay. It is proposed to illuminate the vertical faces of the buildings on this page. This would highlight their appeal and provide a welcoming entry to the precinct.

The illumination of private buildings façades is to be done in consultation with building owners.

Cooper's Corner

Clock corner

Creative Overlay Vertical Illumination

Illuminate facade of Coopers Corner with variations in brightness

Illuminate facade of Clock Corner with variations in brightness to accentuate hierarchy

8.3   Vertical Illumination (cont.)

Gateways can be further enhanced by accentuating existing assets within Double Bay through architectural vertical lighting to notable buildings and vertical walls.

The sandstone retaining walls line the accent into Double Bay. Illuminating these walls will add to the nighttime experience and atmosphere.
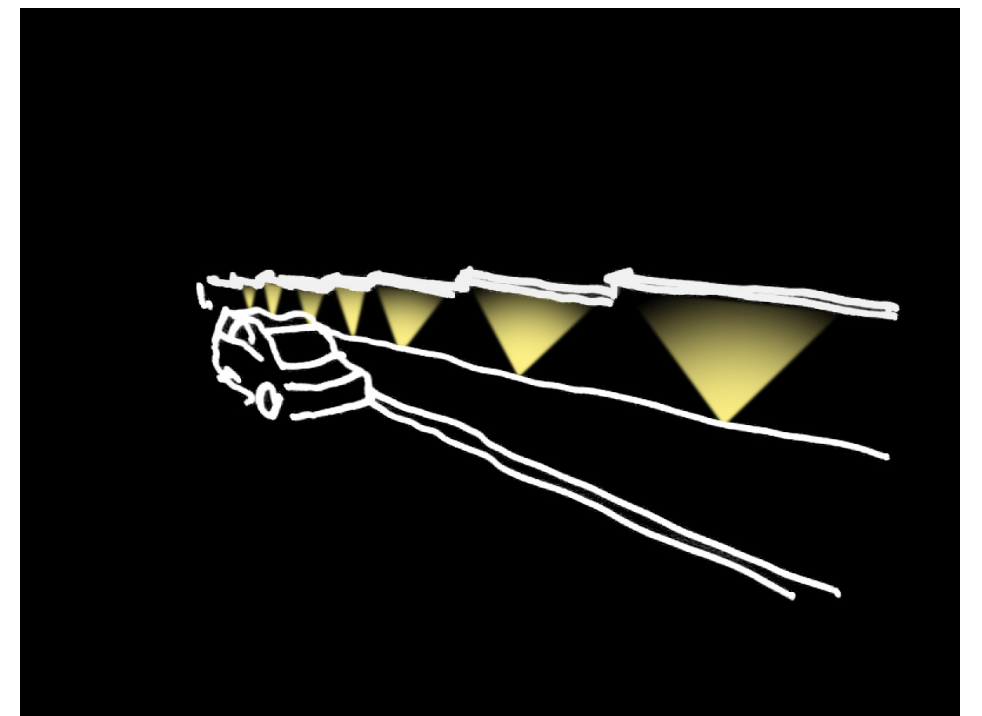

Textured facades on Knox St

Sandstone walls on New South Head Road
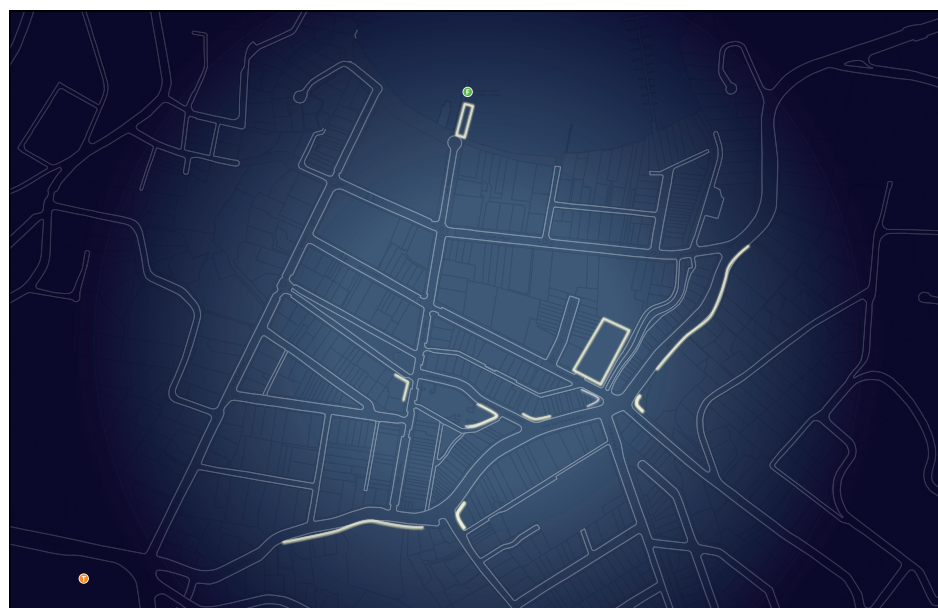
Creative Overlay Vertical Illumination
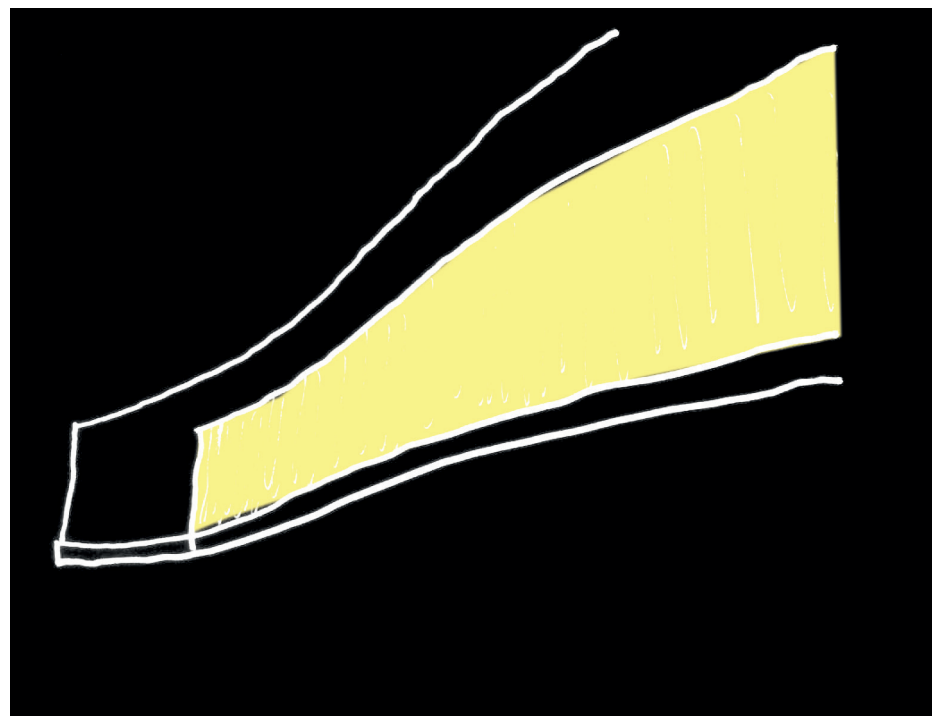
Illuminate textured facade

Uplifting sandstone walls on New South Head Road to create texture at night

8.4   Furniture and Trees

Double Bay's trees have been identified as one of the key differentiating elements for the suburb. At night the character of trees may be transformed to create soft luminous features. These illuminated trees will accentuate the rhythm of the crossing streets while providing more intimate spaces. Lighting to trees can be successfully achieved using one or a combination of different techniques. These range from large scale projectors through to small scale "bud lights" or suspended catenary systems. Illuminating trees should be completed with input from an arborist, or suitable expert, to ensure that both the roots and structure above ground are not damaged.

Lighting to street furniture should be integrated to provide a nighttime punctuation and, where applicable, supplement the requirement lighting with pattern.

Whether designing lighting into furniture or integrating lighting elements into existing pieces, the functionality of the furniture should be the primary consideration. Glare should be eliminated and physical access from vandal to the luminaires should be reduced.
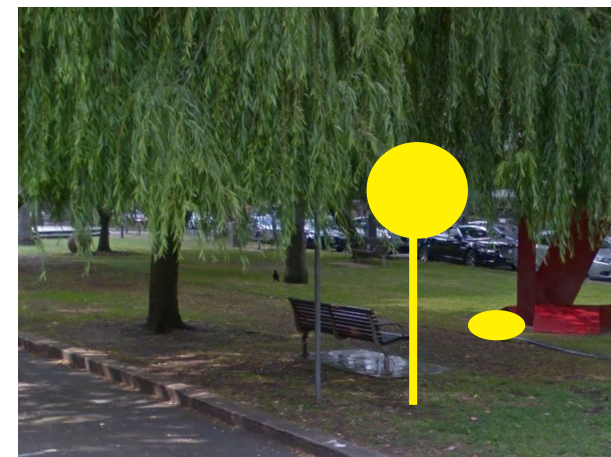
- Illuminate trees at outer gateways
- Illuminate tree foliage where ever street furniture is located
- Illuminate pergola hut in Styene Park
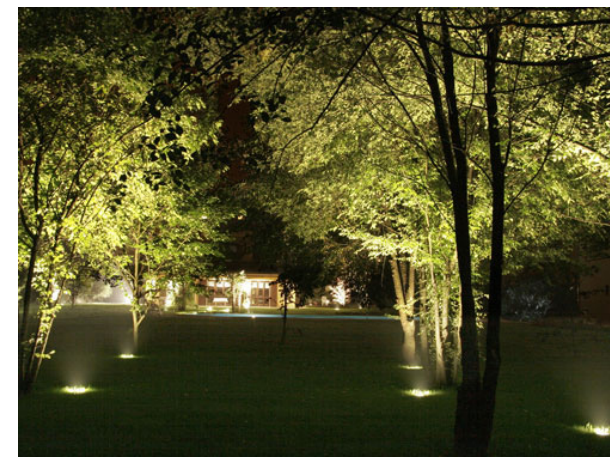- Illuminate playground in Styene Park
- Guilfoyle Park

Incorporate up lighting to garden bed and trees

Upgrade existing lanterns

Artist Interpretation Goldman Lane
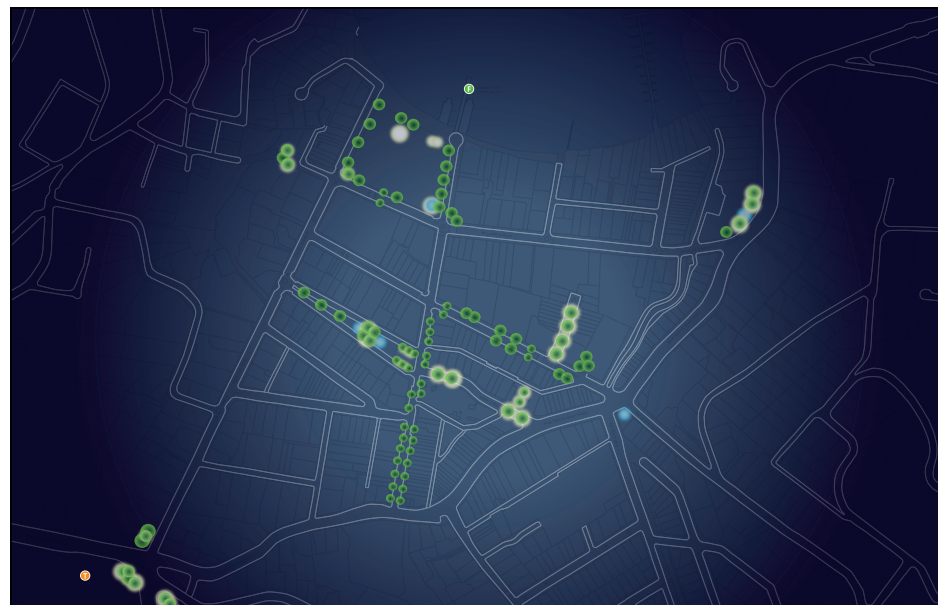
Creative Overlay Trees and Furniture

Illuminate sculptures and lanterns used for furniture task lighting

Uplighting to trees

8.5 Public Art

Illumination

Once in Double Bay the nighttime experience for pedestrians should be carefully crafted to accentuate the urban landscape, create an inclusive environment for everyone and stimulate the night-time character of the suburb. The intent is to create a greater level of intimacy in some areas to encourage activities such as outdoor dining or simply taking a night-time walk.

At this scale future lighting projects should investigate the existing assets within the site including the trees and existing art. New night-time features could also be created via integrated lighting within street furniture. Separate sections regarding these elements follow below:

- Illuminate memorial sculpture in Steyne park

- Illuminate with dynamic lighting to sculpture on corner of NSH Road and Cross St

- Consider light art installation to Steyne Park and Transvaal Ave

Illuminate existing sculptures

Illuminate existing sculptures
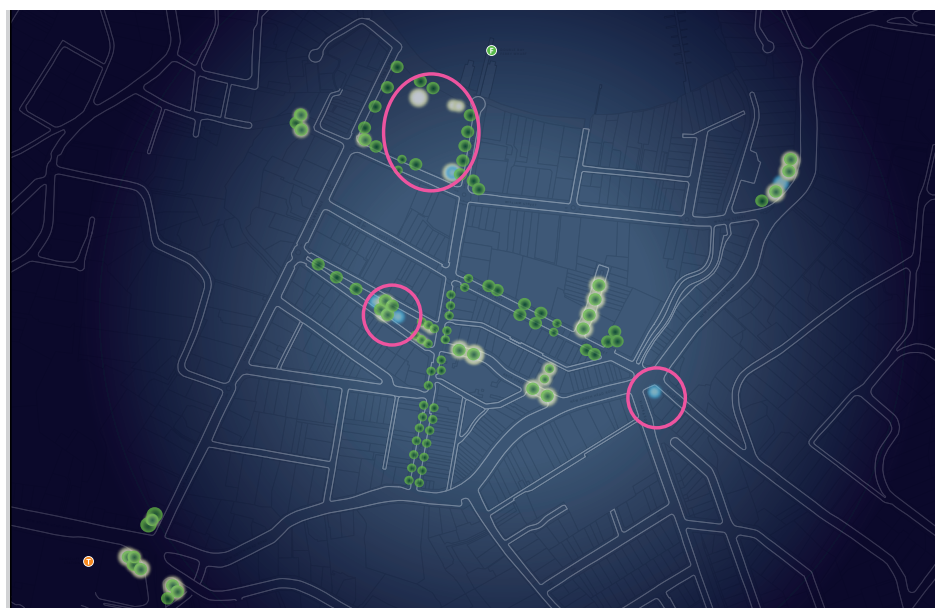
Creative Overlay Sculpture and Art


Reference image

Reference image

9 Urban Projects

The locations identified below are an agreed list of sites and opportunities within Double Bay that should take priority for permanent lighting solutions. Each have been selected for a number of reasons including a required need to increase the sense of safety, to assist in improving foot fall or provide a new night-time public amenity. A summary of solutions is noted below:
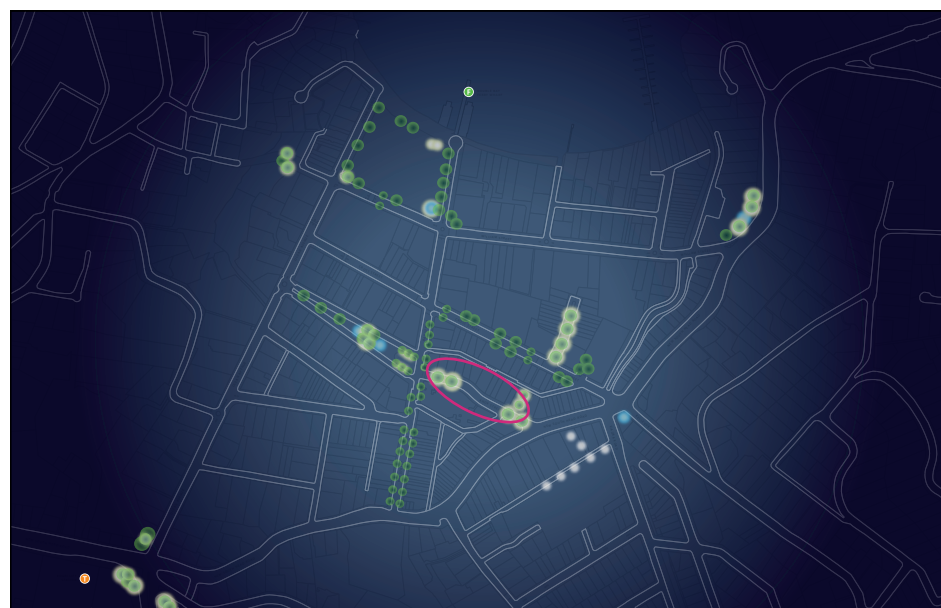
1 Knox Street (tree bud lighting, Cosmo)

2 Lantern redesign

3 Steyne Park (Tree lighting, hut and furniture)

4 Public Gateways (Tree up lighting, ferry terminal)

5 Knox Lane (Catenary)

6 Statue Lighting

7 Private Gateways (18footers, Coopers building, Clock tower)

8 Marathon Road stairs

9 NSH Catenary lighting

10 Bay Street (continue lanterns)
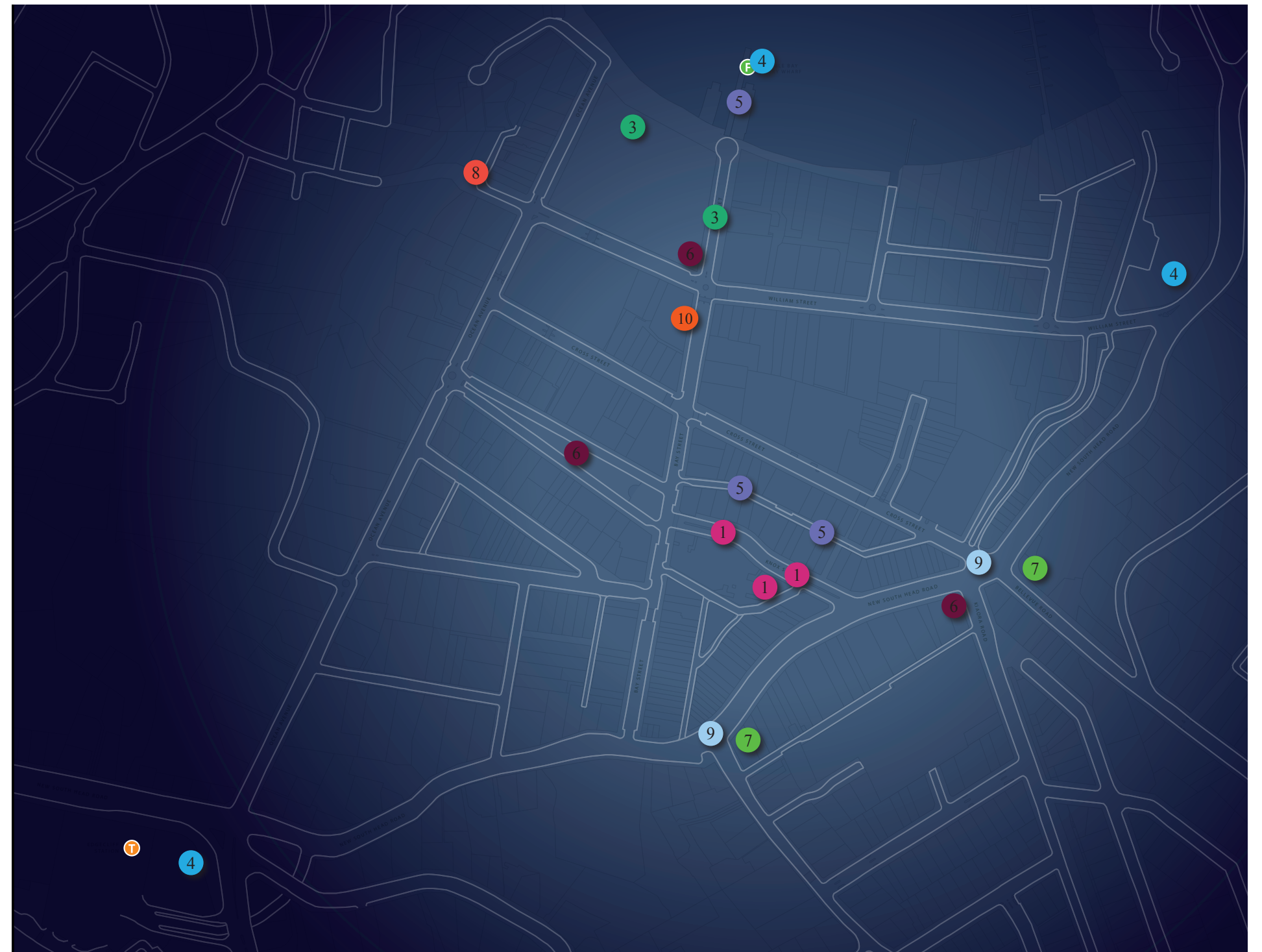
9.1   Knox Street

Knox Street is one of the main vistas and axis into the heart of Double Bay. This streets activation is essential for success and should consider multiple strategies to create a layered and stylish approach.
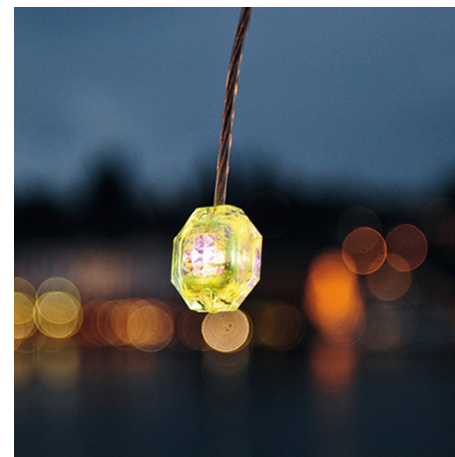
• Up lighting to trees and central islands

• Review Double Bay lamp post design
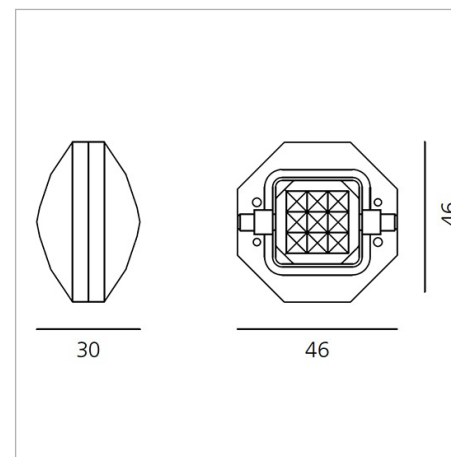
• Vertical lighting to notable buildings
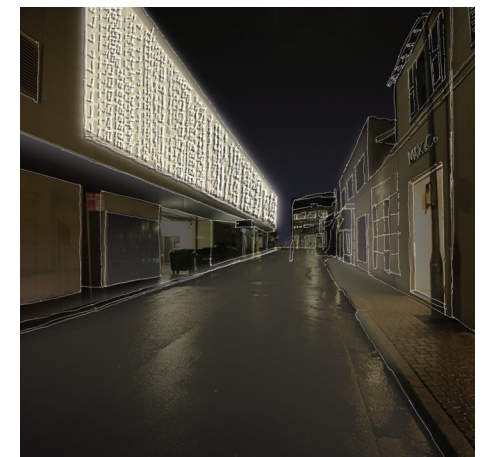

Creative Overlay Tree illumination

Illuminate interesting facades

Upgrade existing lanterns

Node lighting through trees
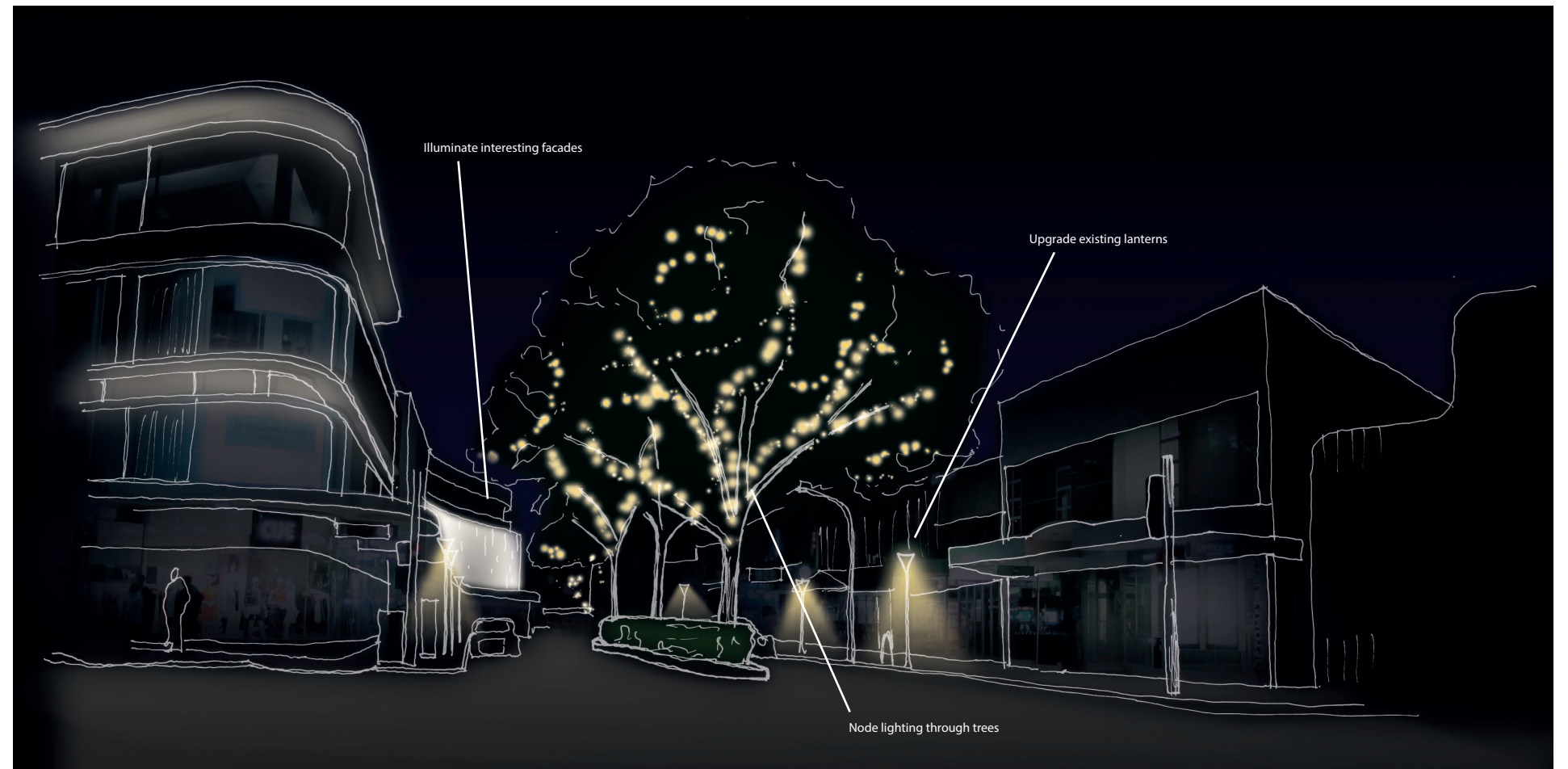
Artist Interpretation


Node lighting through trees

Lantern upgrade

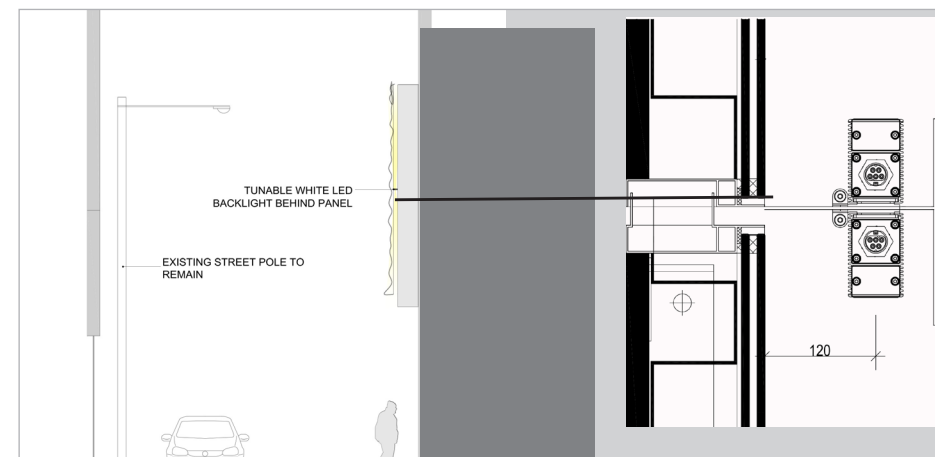Short St - facade lighting

9.2   Short Street

Short Street currently has a high level of pedestrian traffic during the later hours of the evening. The design will increase safety and improve the nighttime experience through the street without adding additional street or lighting poles. This can be achieve via the following;

- Tuneable white LED Back lighting to the textured façade.

- Complement and balance lighting levels on the street

These sketches propose different architectural assets within Double Bay that should be considered for modified or additional lighting to enhance the night-time character of the suburb

Backlight textured facade
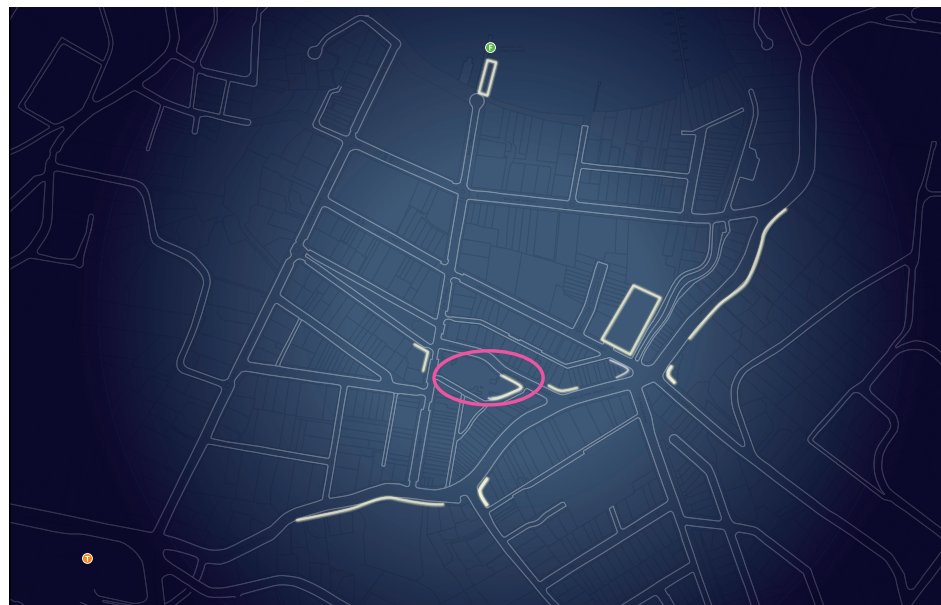
Photomontage Short Street

TUNABLE WHITE LED
BACKLIGHT BEHIND PANEL

EXISTING STREET POLE TO
REMAIN

120

Short Street   Lighting detail

Exterior facade luminaire

Existing Short Street

9.3   Lantern Design

Pilot Projects

The lanterns in Double Bay should act as a new emblem for the centre. The new design will create a strong sense of place that reflects the creativity and artistic characteristics of the site.

The work flow for the design for the lanterns should be;

Stage 1: Develop brief
Prepare a detailed brief to address the asset ownership, functionality, materiality and aesthetic attributes for the new lantern, amongst other relevant matters.
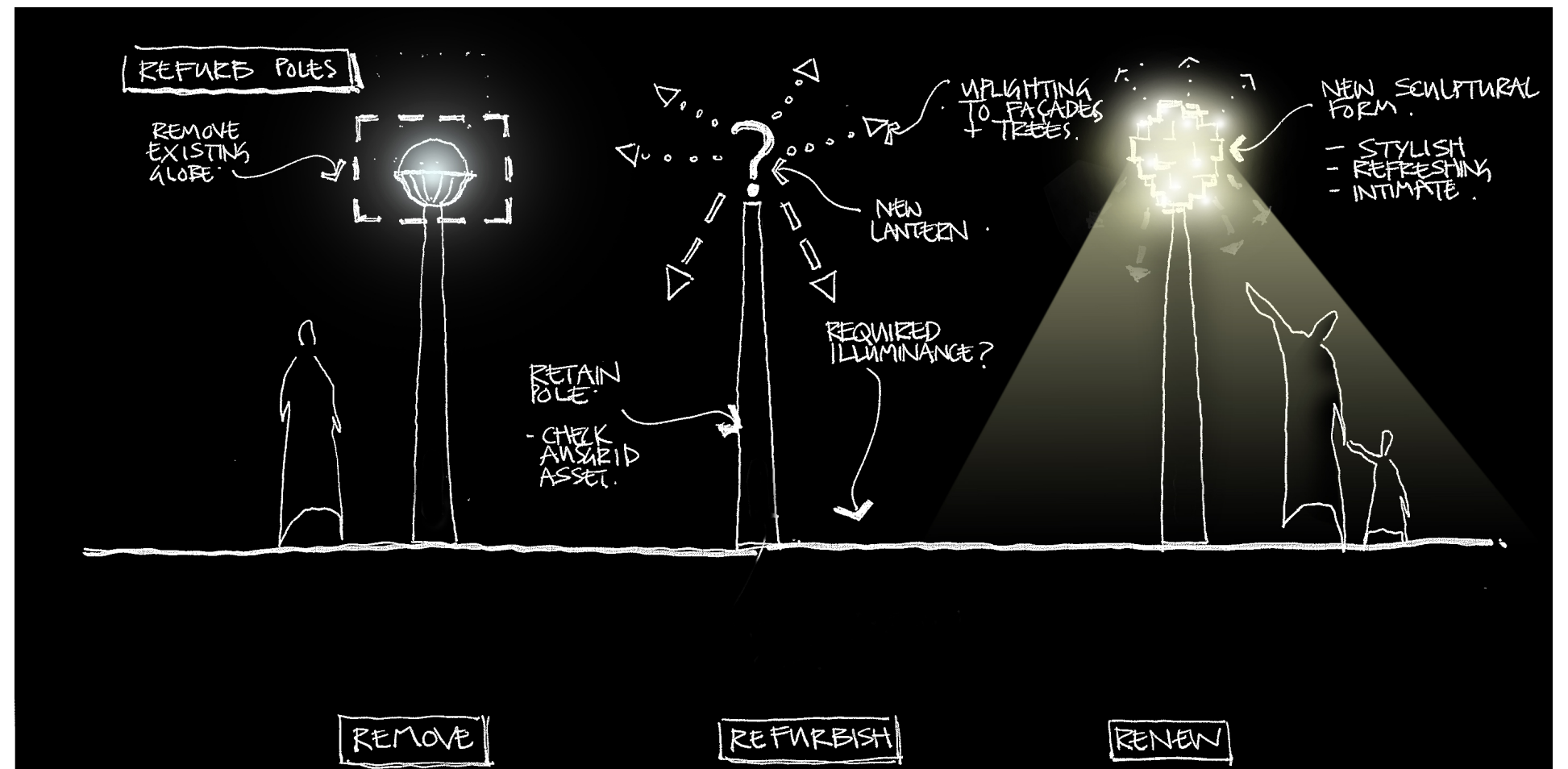
Stage 2:
Council Sign off

Stage 3:
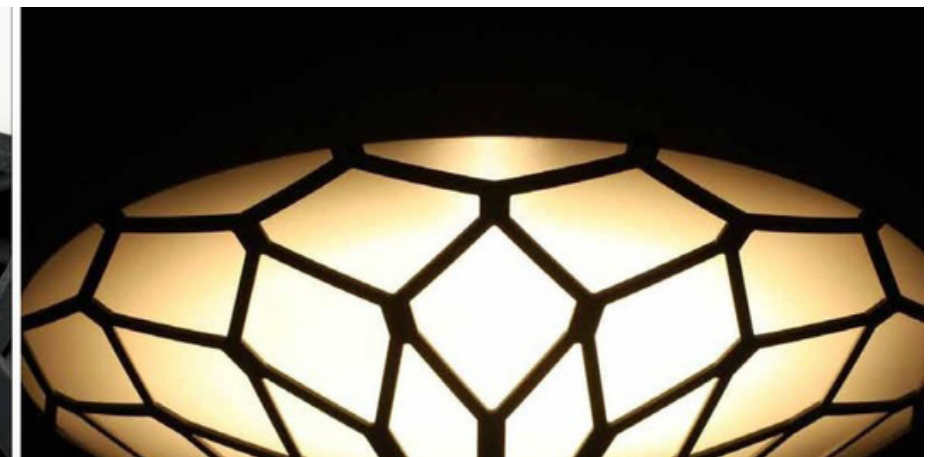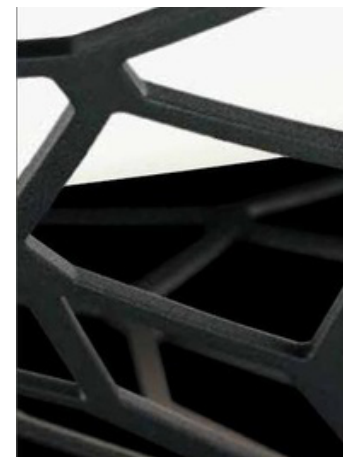Procurement of lanterns

Stage 4:
Installation of lanterns
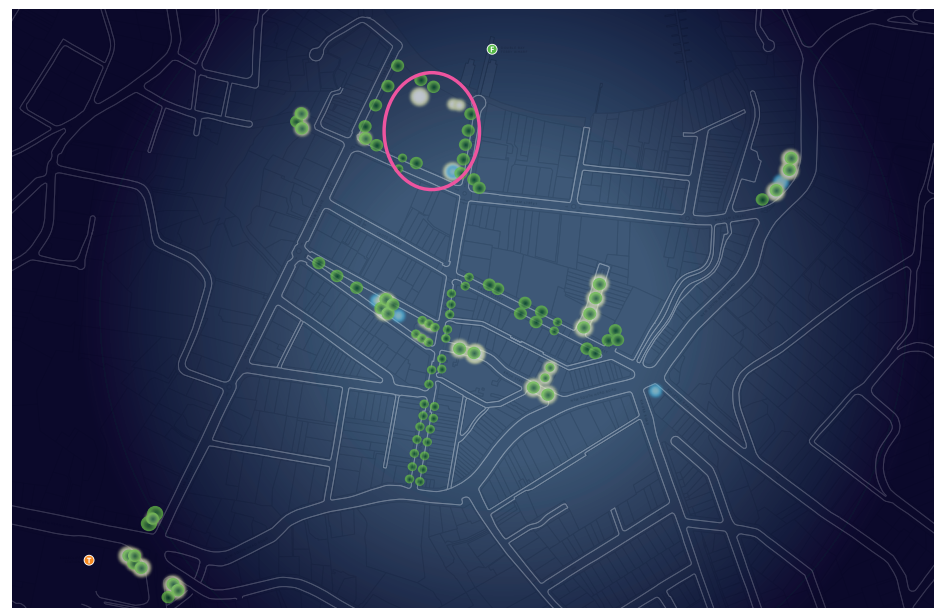

Creative Overlay Gateway

Reference images

9.4   Steyne Park

Steyne Park and Bay Street are at one end of Double Bay's main gateways, it is how people arrive to the suburb by water and would be an ideal location for pilot projects .

To enhance the prestige and improve the nighttime character of this area the following should be considered;

• Illuminate large trees

• Illuminate footpath

• Illuminate playground, hut and war memorial

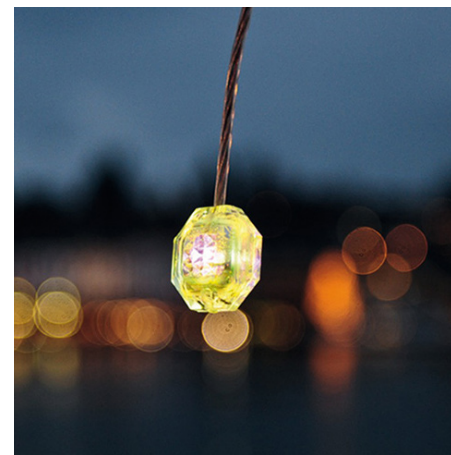• Incorporate lighting into furniture elements
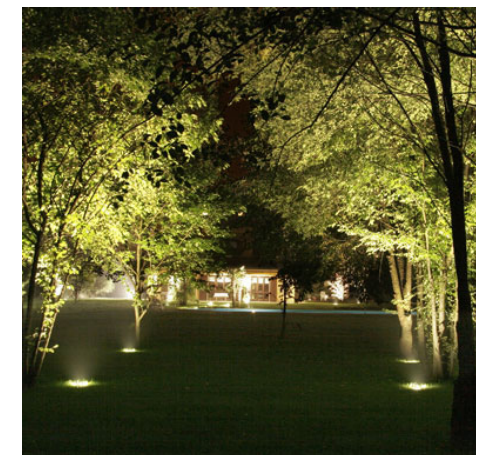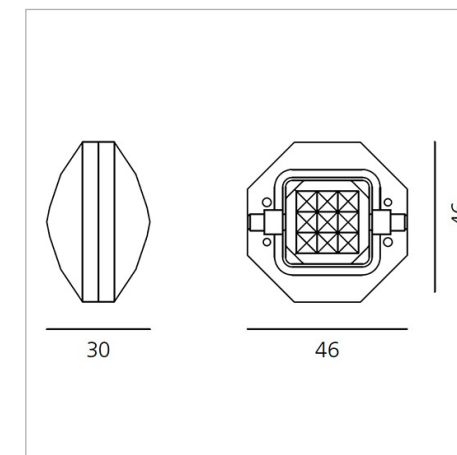

Artist Interpretation

Creative Overlay Tree Illumination

Uplighting for trees

Lighting through trees

Uplighting to trees

9.5   Marathon Rd steps

The existing footpath from Darling Point into Double Bay has been identified as an area in need of increased illuminance. This is primarily to improve ease of circulation.

A number of lighting techniques can be considered to achieve this, and the developed design should provide both circulation lighting to the path and steps, and if appropriate accent lighting to improve the night-time amenity.

In developing a solution for this area the lighting should be carefully considered to control potential light spill into surrounding residential properties
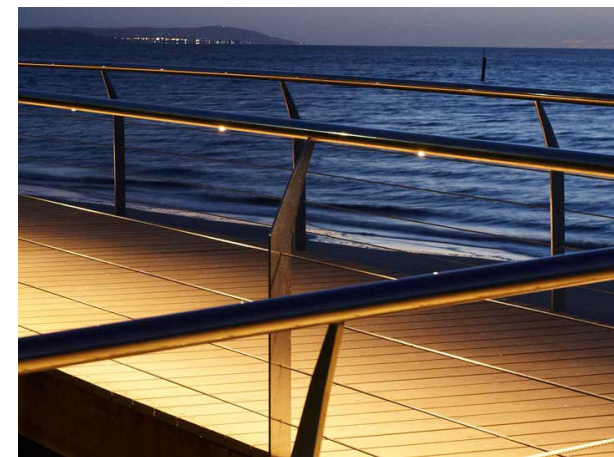
*   Lighting integrated into handrail to reduce lighting spill

*   Uplighting to the under canopy of trees in cool light to contrast the yellow sodium street light

Stake in garden beds to uplighting trees

Upgrade existing handrail and incorporate lighting
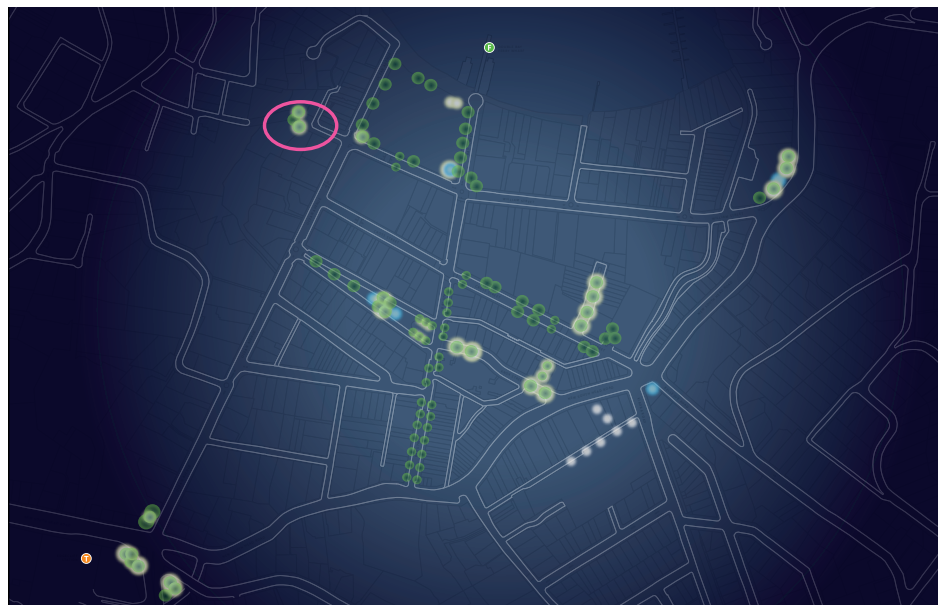
Artist Interpretation Marathon steps

Inground stake lighting in cool white lighting
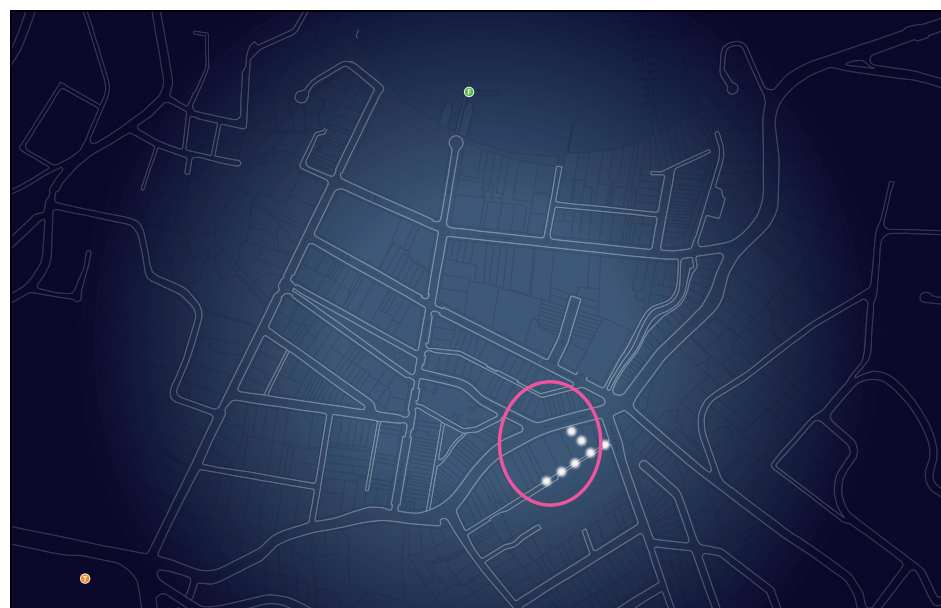

Handrail lighting to stairs
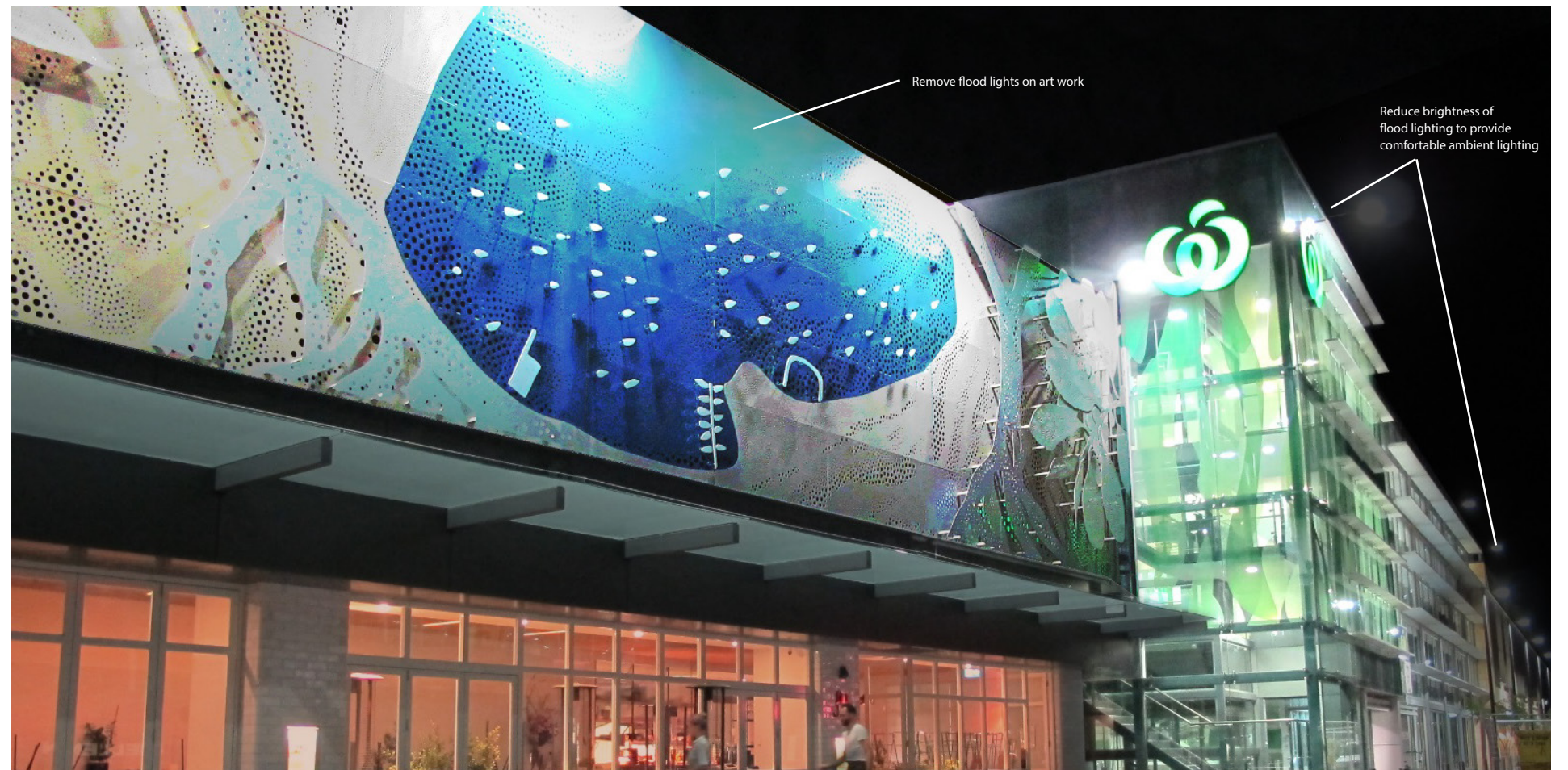

Existing site photos

9.6 Kiaora Lane

Kiaora Lane is in the recently developed area of Double Bay. The desire is to have outdoor dinning, including night time dinning that opens onto the shared lane way from adjoining eateries. Here we suggest the lighting in this area be reviewed and balanced to create a more subtle atmosphere.

- Review brightness and lighting levels

- Provide specific lighting for artwork to enhance the texture and layers

- Consider catenary lighting

These sketches propose different architectural assets within Double Bay that should be considered for modification or additional lighting to enhance the night-time character of the Kiaora Lane.

Remove flood lights on art work

Reduce brightness of flood lighting to provide comfortable ambient lighting

Photomontage Kiora Lane

Creative Overlay Tree Illumination

Existing Kiaora Lane

9.7   Post-top lanterns

The post-top lanterns will become an iconic and defining character to the Double Bay precinct. With the redesign of these post-top lanterns the positioning and spacing of the lanterns is to be reconsidered to create an holistic nighttime experience.

These lanterns are to be installed the full length of Bay St to link the ferry terminal and Double Bay centre. Other areas to considered are;

- Extend lanterns along Bay Street
- Continue lanterns along waterfront
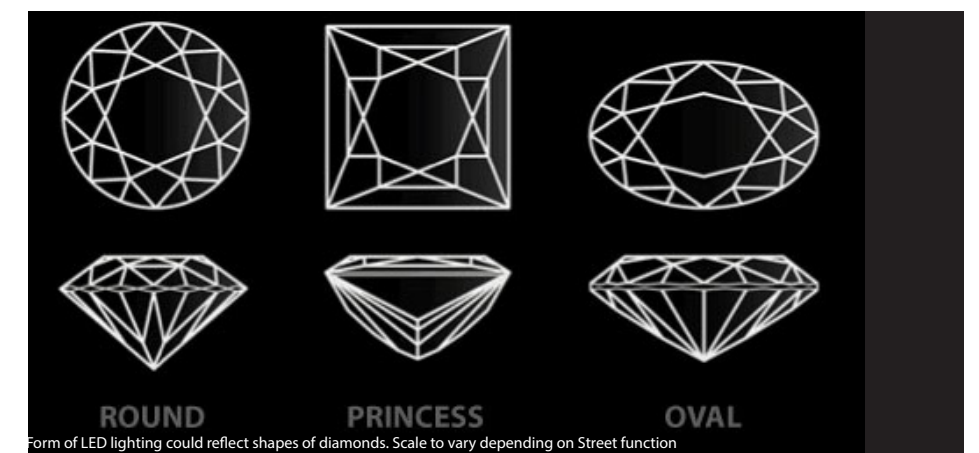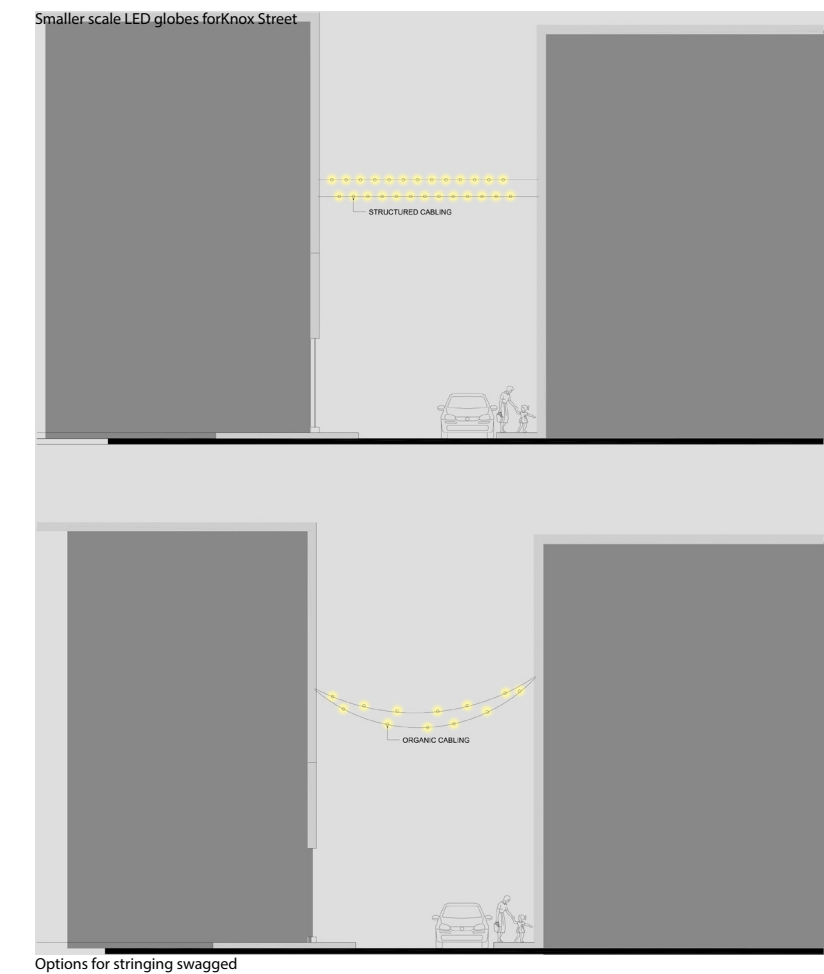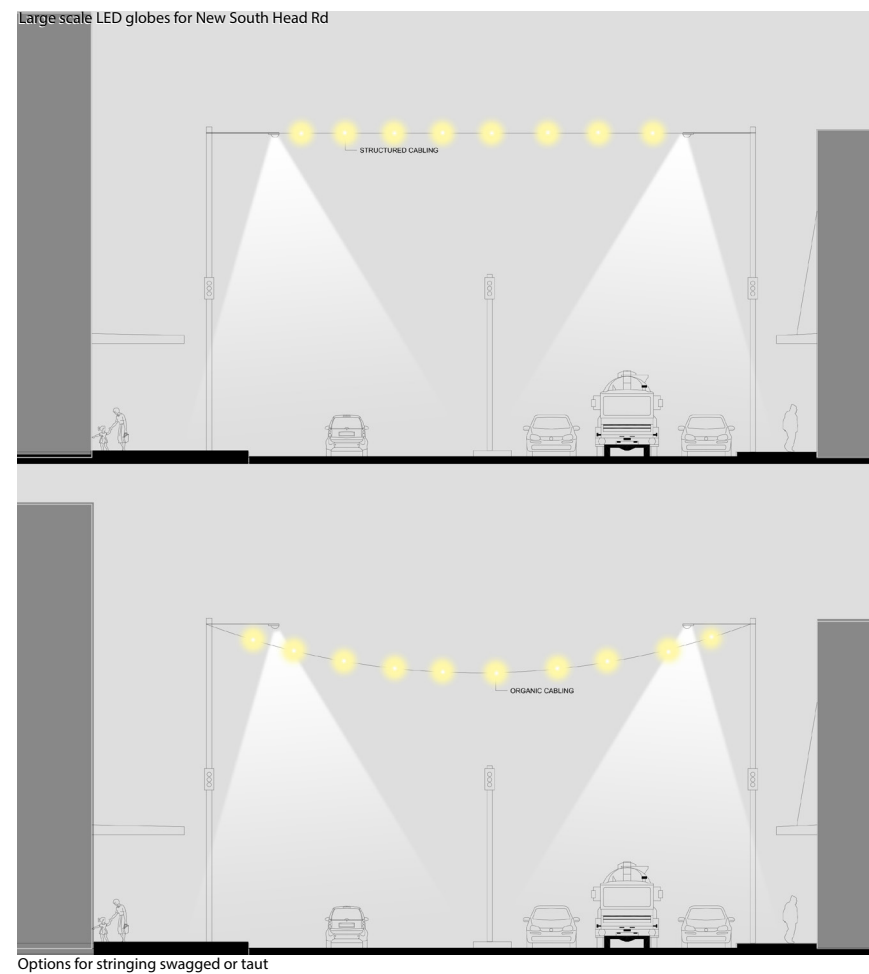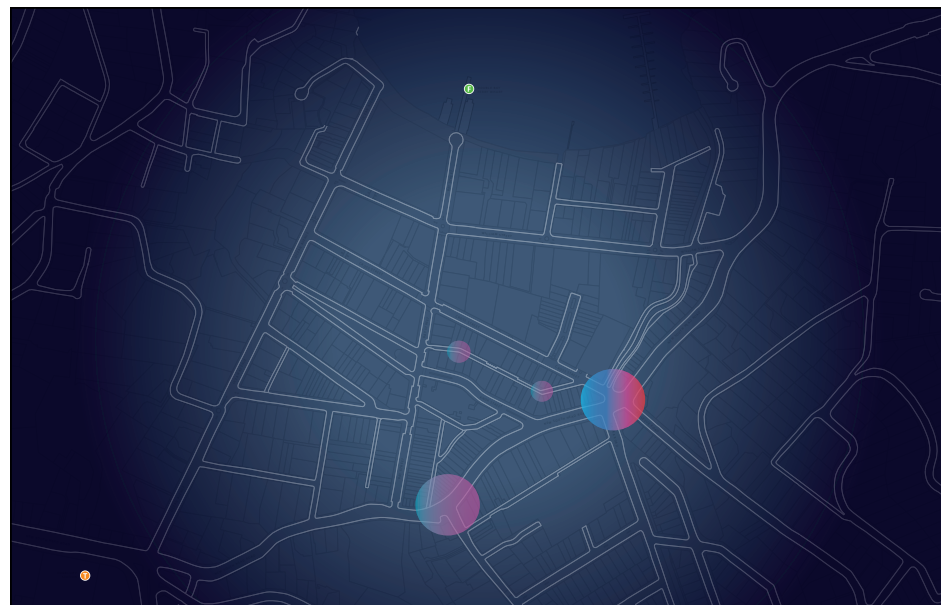- Additional lantern located next to furniture

9.8 Catenary lighting

Catenary lighting allows for non-obtrusive adoption of public spaces luminaires which can be positioned exactly were they are needed and provides an artistic layer.

To enhance the prestige and improve the nighttime character of this area the following should be considered;

• Combination of clear and frosted LED globes

• Small globes for Lane Ways and Avenues

• Large globe for New South head Road

Large scale LED globes for New South Head Rd

Options for stringing swagged or taut

Smaller scale LED globes forKnox Street

Options for stringing swagged

Careful consideration of materials so installation has a day and nighttime qual

Form of LED lighting could reflect shapes of diamonds. Scale to vary depending on Street function

10   Suite of luminaires
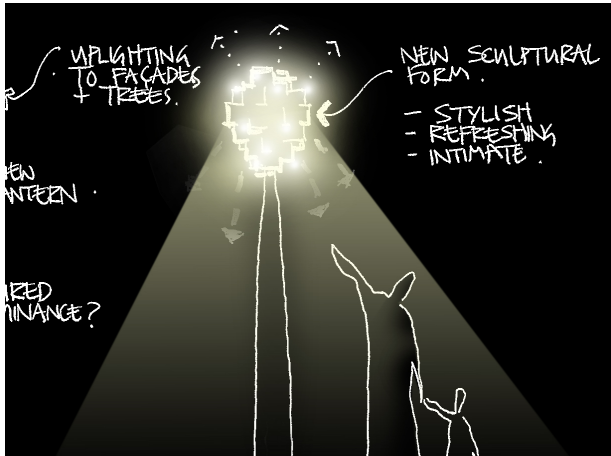
Lanterns

Bud lighting to trees

Handrail lighting

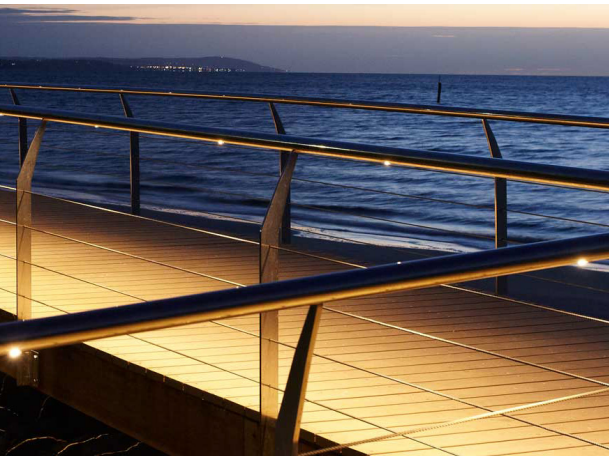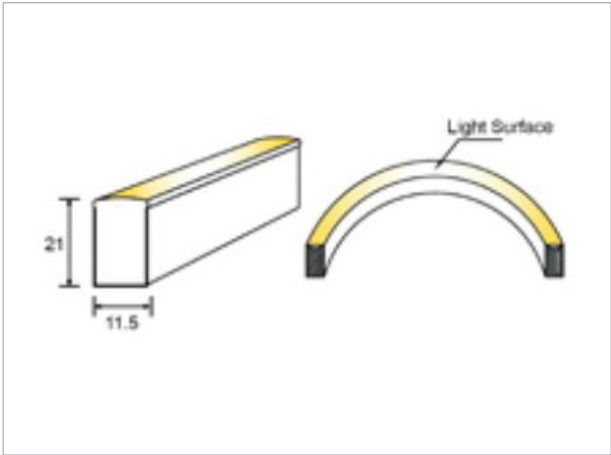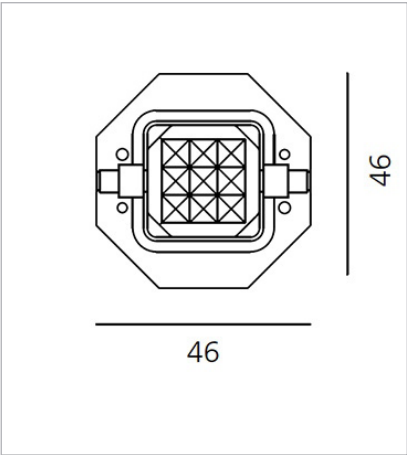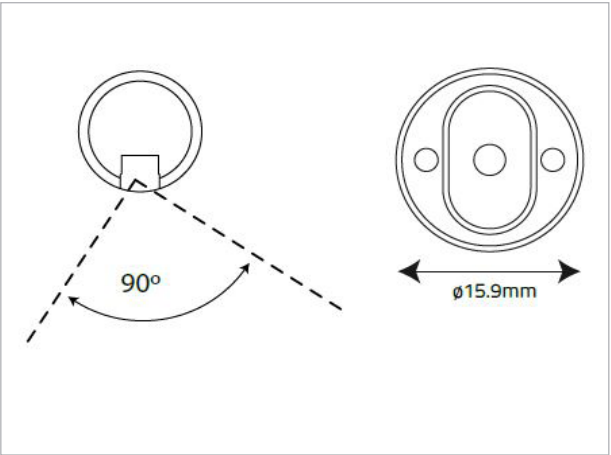Exterior flexible lighting for furniture
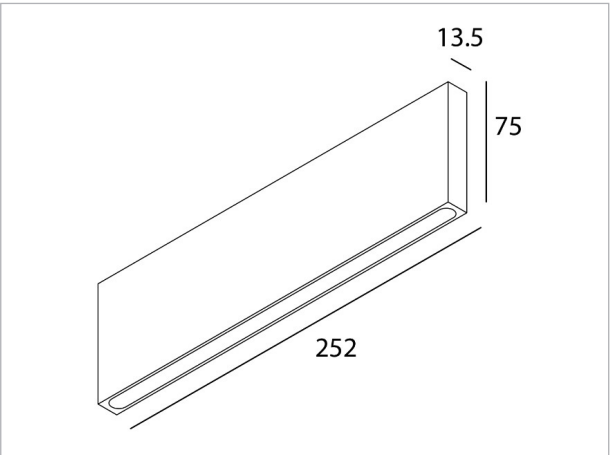

Exterior facade luminare

Node lighting to trees canopies

Handrail lighting

Slim wall lighting to sandstone retaining wall up and down

Ingroup stake lighting

Recessed inground uplighting

11   Lighting and Controls

Typically outdoor lighting in the urban environment is controlled in one of two ways. Firstly photoelectric sensors are often mounted individually to luminaires, these automatically sense the available day light and switch the luminaire or luminaires on when daylight is reduced to a predetermined level. Alternatively luminaires may be linked to an automated time clock controlling luminaires at preprogram times based on dawn, sunset or other activities.

With the advent of greater information and connectivity residing within luminaires and lighting equipment, new possibilities are being developed of integrating with other spheres of technology.

Controls and decision making with regards to the functionality and effectiveness of exterior site lighting will help promote and realise Double Bay's commitment to new levels of public engagement, experiences and vibrancy.

The design of the lighting scheme for Double Bay should explore possibilities to understand how best this approach could benefit the community and council.

Output of programmed control systems designed with community involvement include;

• Expanded public space activity

• More "eyes on the street"

• Natural surveillance by tenants themselves

• Pride of night-time place

• More physical exercise

• Expanded opportunity for social interaction

• Energy savings attributed to adaptive lighting control

Nighttime Design: **Shades of Night**

Light will follow the activities of city districts at night:
from safety to celebration with application of smart lighting and community input

| Dusk | After-work Activity | After-dark Recreation | Night Shift | After Hours | Early Risers | Dawn |
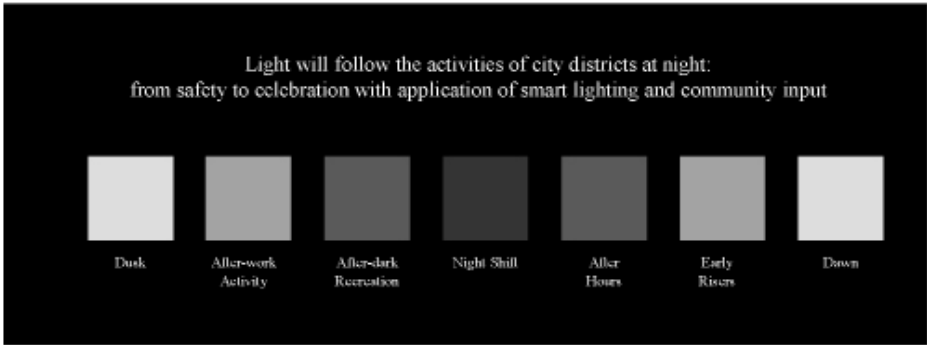
12   Precinct Scene Setting

Dynamic, vibrant and flexible designs.

Precinct scene setting that considers use age patterns. Throughout the course of the day and evening natural lighting qualities vary as do peoples use of spaces and their activities. The lighting strategy has been designed to complement with these changing activities and people movement.

The Double Bay precinct lighting can be controlled and set to a number of predefined modes to respond to environmental cues the users needs.

Dusk - Dusk until 9pm

Lighting levels are at their highest, laneway and catenary lighting set to 100% This is the most busy and vibrant time of the evening

Evening - 9pm till 12am

Lighting levels area warmer and a lighting set to 75% People have sat down to dinner so more intimate lighting required

Afterhours - 12am to dawn

Low level lighting applied 25% intensity still complying with statutory requirements Generally people have moved on, lighting intensity can be more subtle but CCT should be brighter
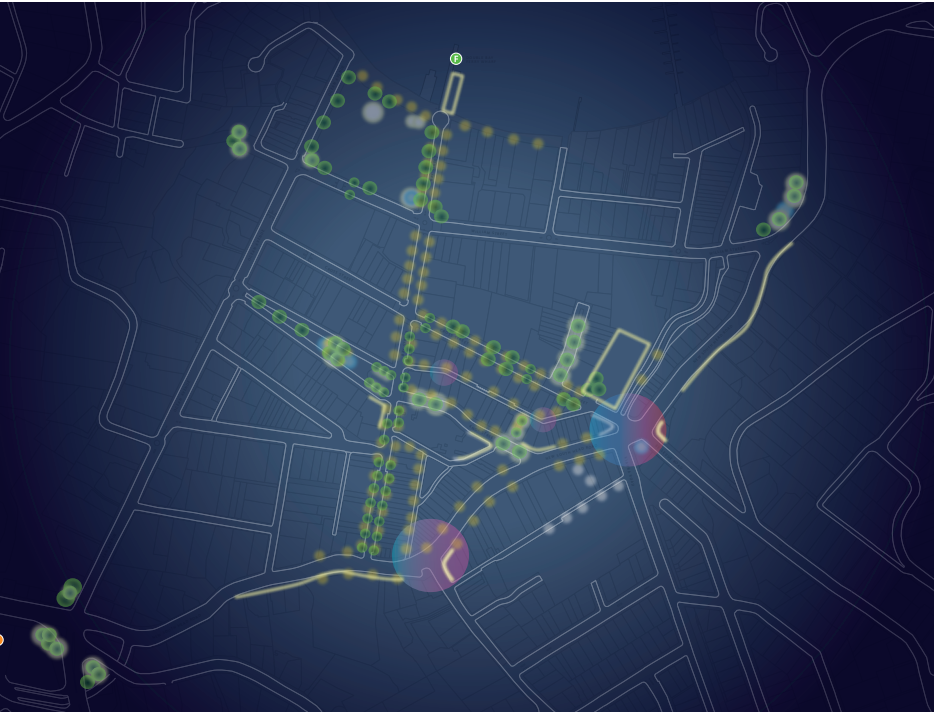
Event Mode

Festive lighting, colour control, temperature and intensity control Through online programming users can set events and artistic overlay of lighting.
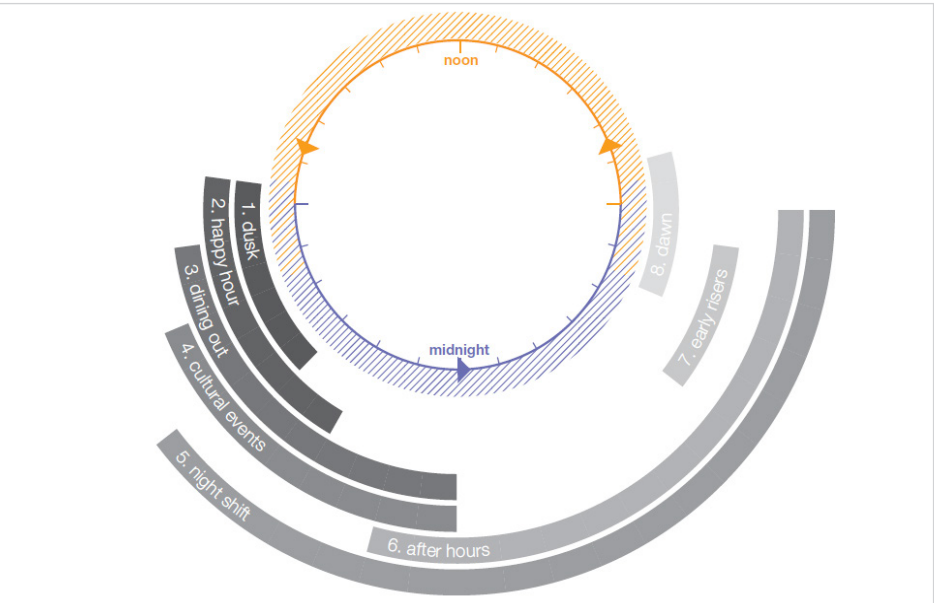
Shades of night

Evening 9pm till 12am

Afterhours - 12am to dawn

Event mode

13 Technical Guidance

AS1158 Outdoor lighting

The categories highlighted have been selected based upon the client briefing, subsequent workshops and project developments. The range has been used to differentiate between the various spaces shown to provide a hierarchy of brightness. These assumptions should be used within the following lighting design stages and clarified through that process.

AS/NZS 1158 Lighting for roads and public spaces

Lighting for roads and public spaces set, helps design, manufacture and install road lighting for the safer use of roads by pedestrians and vehicles

AS/NZS 4282 Control of the obtrusive effects of outdoor lighting

Sets limits to which an exterior lighting installation can reach in regards to the level of potential 'spill light' an installation may create brightness of luminaires and its impact on adjacent residential properties and road users.

TABLE 2.1

LIGHTING CATEGORIES FOR ROAD RESERVES IN LOCAL AREAS

1	2	3	4	5	6
Type of road or pathway		Selection criteria[a,b]			Applicable lighting subcategory[c,d]
General description	Basic operating characteristics	Pedestrian/ cycle activity	Risk[f] of crime	Need to enhance prestige	
Collector roads or non-arterial roads which collect and distribute traffic in an area, as well as serving abutting properties	Mixed vehicle and pedestrian traffic	N/A	High	N/A	P1
		High	Medium	High	P2
		Medium	Low	Medium	P3
		Low	Low	N/A	P4
Local roads or streets used primarily for access to abutting properties, including residential properties	Mixed vehicle and pedestrian traffic	N/A	High	N/A	P1
		High	Medium	High	P2
		Medium	Medium	Medium	P3
		Low	Low	N/A	P4
		Low	Low	N/A	P5[e]
Common area, forecourts of cluster housing	Mixed vehicle and pedestrian traffic	N/A	High	N/A	P1
		High	Medium	High	P2
		Medium	Low	Medium	P3
		Low	Low	N/A	P4

TABLE 2.6

VALUES OF LIGHT TECHNICAL PARAMETERS AND PERMISSIBLE LUMINAIRE TYPES FOR ROADS IN LOCAL AREAS AND FOR PATHWAYS

1	2	3	4	5	6
	Light technical parameters				Permissible luminaire type (see Table 2.10)
Lighting subcategory	Average horizontal illuminance[a,b] ($\bar{E}_h$)	Point horizontal illuminance[a,b] (E_{Ph})	Illuminance (horizontal) uniformity[c] Cat. P (U_{E2})	Point vertical illuminance[a,b] (E_{Pv})	
	lux	lux		lux	
P1	7	2	10	2	Type 4 where part of a road reserve or Types 2, 3, 4 or 6 elsewhere
P2	3.5	0.7	10	0.7	
P3[e]	1.75	0.3	10	0.3[d]	
P4[e]	0.85	0.14	10	N/A	
P5[e]	0.5	0.07	10	N/A	