

8.6

DARLING DRIVE

This proposal includes work to improve the quality of Darling Drive. The improvements include the provision of a cycle way on the eastern side of Darling Drive to be integrated with the City of Sydney cycle network and landscape improvements to the street. In the southern part of Darling Drive, adjacent to the Theatre, it is proposed to introduce street tree planting to provide shade and greater amenity to the streetscape. Further north, adjacent to the ICC Exhibition, it is proposed to build over Darling Drive while still accommodating the cycle way and further north, where the ICC addresses Darling Drive, street tree planting is also proposed.

These improvements will be integrated with two new pedestrian and set down places, mainly Harbourside Place and Tumbalong Place. Given the service vehicle access function of Darling Drive, retail activation has been focussed on both Harbourside Place and Tumbalong Place, which serve as major pedestrian linkages, east – west between the city, Darling Harbour and Pyrmont Ultimo.

Further potential improvements adjacent to Darling Drive on the western side, as an extension of The Goods Line proposal, have been identified and explained in section 7.7 of this report, however these are not a part of this application.



8.7

SCHEDULE OF PUBLIC DOMAIN FINISHES

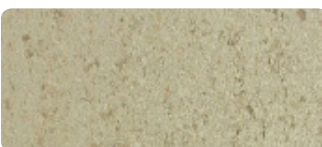
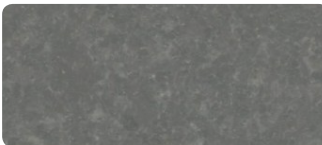
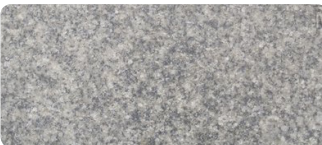
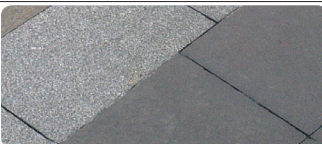
Materials, both hard and soft, for the public realm environments are required to be durable, readily maintainable and representative of the place and the language of the environment. These have been the driving core criteria to the Public Realm’s material selection process.

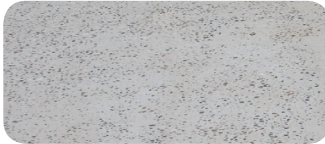
There has been strong consideration of the colours, form and future character of the site, concurrent with clear acknowledgement of the materials fabric prescribed by City of Sydney across the city streets, parks and urban plazas. The blend therefore of the city’s existing palette with that of new highlights, intrusions and contrasts has been carefully considered and evaluated.

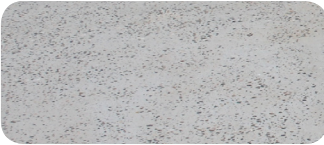
In the end the materiality needs to be of Sydney but importantly memorably different and distinctive – as that of Darling Harbour.

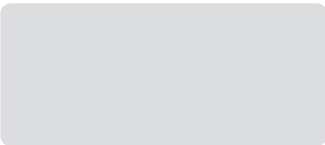
This proposed palette of materials reflects the design intent and is subject to refinement and review following consultation with INSW, SHFA, City of Sydney and other relevant authorities.

PAVEMENTS

Description	Items	
DARLING DRIVE		
	Material	Asphalt
	Finish	AC IO
	Colour	Black
	Material	Paint on surface (Bike path)
	Finish	Painting using stencil
	Colour	Green
	Material	Granite (Southern Quarter)
	Finish	Shot
	Colour	Cream/ brown
	Material	Insitu concrete (Southern Quarter)
	Finish	Trowel finish
	Colour	Grey
THE BOULEVARD		
	Material	Granite (body)
	Finish	Shot / Honed to AS
	Colour	Austral Black
	Material	Granite (body)
	Finish	Shot
	Colour	Austral Verde
	Material	Granite (highlight)
	Finish	Shot
	Colour	Grey
HARBOURSIDE PLACE/ TUMBALONG PLACE		
	Material	Granite (body + highlight)
	Finish	Shot/ Honed to AS
	Colour	Grey

Description	Items	
CHINESE GARDEN SQUARE		
	Material	Recycled brick (body)
	Finish	Exfoliated finish
	Colour	Red/ brown
	Material	Precast concrete (banding)
	Finish	Light broom
	Colour	Grey
TUMBALONG GREEN		
	*TO BE FURTHER DEVELOPED	
	Material	Insitu concrete (paths)
	Finish	Light broom
	Colour	Grey
	Material	Insitu concrete (stage)
	Finish	Class 2 finish
	Colour	Grey
	Material	Granite Cobbles
	Finish	Rumbled
WATERPLAY & TECHNOLOGY		
	Colour	Grey/ Austral Verde

Description	Items	
DARLING QUARTER PATH	*TO BE FURTHER DEVELOPED	
	Material	Red brick
	Finish	Match existing
	Colour	Match existing
	Material	Insitu concrete
	Finish	Match existing
	Colour	Match existing
COCKLE BAY PAVER	Material	Granite
	Finish	Shot
	Colour	Austral Verde
EXISTING COCKLE BAY DECK	Material	Timber
	Finish	Existing
	Colour	Existing

Code	Description	Items	
FOLDED LANDSCAPE			
	Material	Timber	
	Colour	Grey	
	Material	Match RL12 internal	
	Finish	To Australian Standards	
	Colour	Match RL12 internal	
THE EVENT DECK			
	Material	Insitu concrete	
	Finish	Epoxy	
	Colour	Grey	

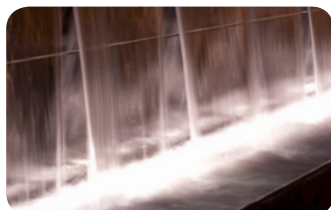
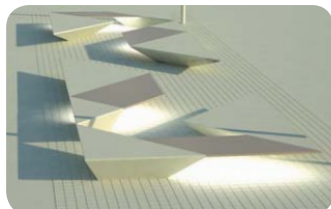
WALLS & BALUSTRADES

Description	Items	
WALL TYPE 1 - SEATING WALL		
	Material	Precast concrete
	Size	Max 950mm high, 200mm wide
	Finish	Class 2 finish
	Colour	Grey standard
	Sub base	Engineers specification
	Joints	Engineers specification
WALL TYPE 2 - RETAINING WALL		
	Material	Insitu concrete
	Size	Max 950mm high, 20mm wide
	Finish	Class 2 finish
	Colour	None
	Sub base	Engineers specification
	Joints	Engineers specification
WALL TYPE 3 - STAIRS		
	Material	Precast concrete
	Size	To Australian standards
	Finish	Class 1 finish
	Colour	None
	Sub base	Engineers specification
	Joints	Engineers specification
BALUSTRADE TYPE 1		
	Material	Stainless Steel
	Size	To Australian Standards
	Finish	Grade 316
	Fixing	Engineers specification
	Joints	Continuous fillet weld

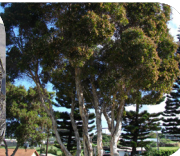
FURNITURE

Description	Items	
FURNITURE TYPE 1 - BENCH		
	Material	Precast concrete and timber
	Location	Site wide
	Size	Custom design
	Finish	Class 2 finish
	Colour	Off grey
	Fixing	Sub surface mounted
FURNITURE TYPE 2 -LITTER BIN		
	Material	Stainless steel
	Location	Site wide
	Size	Manufacturers specification
	Finish	Grade 316
	Colour	Stainless steel
	Fixing	Sub surface mounted
FURNITURE TYPE 3 -BIKE RACK		
	Material	Stainless steel CHS
	Location	Boulevard
	Size	850mm x 845mm
	Finish	Grade 316
	Colour	Stainless steel
	Fixing	Surface mounted
FURNITURE TYPE 4 -DRINKING		
	Material	Stainless steel
	Location	Site wide
	Size	Manufacturers specification
	Finish	Grade 316
	Colour	Stainless steel
	Fixing	Sub surface mounted
FURNITURE TYPE 5/ 6-BOLLARD (FIXED/		
	Material	Stainless steel
	Location	Site wide
	Size	Min 1000mm high
	Finish	Grade 316
	Colour	Stainless steel
	Fixing	Surface/ Sub surface mounted

LIGHTING

Description	Items	
POLE TOP LIGHT		
	Material	Stainless steel
	Location	Boulevard
	Size	6m high
	Colour	Powdercoated Grey
	Fixing	Surface/ Sub surface mounted
IN GROUND UPLIGHTS		
	Material	Stainless steel
	Location	Site wide
	Size	Varies. Type dependent
	Fixing	Manufacturers specification
WATER FEATURE LIGHTING		
	Material	Stainless steel
	Location	Site wide
	Size	Varies. Type dependent
	Fixing	Waterproof
FURNITURE & WALL LIGHTING		
	Material	Stainless steel/ LED
	Location	Bench/ Walling
	Size	Varies. Type dependent
	Fixing	Hidden
ROAD INDICATORS		
	Location	Site wide
	Material	Aluminium
	Size	To Australian Standards
	Fixing	Manufacturers specification
SKY TRACKER GIMBOL		
	Location	Boulevard
	Mounting	Housed in wayfinding Tower (approx 10m tall)
	Quantity	6

PLANTING

Description	Items	Notes																		
TREE TYPE 1 - DARLING DRIVE		 <table><tr><td>Species</td><td>Ficus macrophylla</td></tr><tr><td>Common Name</td><td>Moreton Bay Fig</td></tr><tr><td>Mature Size</td><td>30-60m high, 30-60 spread</td></tr></table>	Species	Ficus macrophylla	Common Name	Moreton Bay Fig	Mature Size	30-60m high, 30-60 spread	Existing Fig 'Fred' Existing Figs along Pier Street City of Sydney Street Tree Master Plan 2011 species Evergreen Native											
Species	Ficus macrophylla																			
Common Name	Moreton Bay Fig																			
Mature Size	30-60m high, 30-60 spread																			
TREE TYPE 2 - TERRACED LANDSCAPE		 <table><tr><td>Species</td><td>Angophora costata</td></tr><tr><td>Common Name</td><td>Smooth-barked apple</td></tr><tr><td>Mature Size</td><td>15-20m high, 8-10m spread</td></tr></table><table><tr><td>Species</td><td>Eucalyptus gummifera</td></tr><tr><td>Common Name</td><td>Red Bloodwood</td></tr><tr><td>Mature Size</td><td>10-15m high</td></tr></table><table><tr><td>Species</td><td>Banksia serrata</td></tr><tr><td>Common Name</td><td>Old Man Banksia</td></tr><tr><td>Mature Size</td><td>15m high, 8m spread</td></tr></table> Historic vegetation species City of Sydney Street Tree Master Plan 2011 species Evergreen Native Native	Species	Angophora costata	Common Name	Smooth-barked apple	Mature Size	15-20m high, 8-10m spread	Species	Eucalyptus gummifera	Common Name	Red Bloodwood	Mature Size	10-15m high	Species	Banksia serrata	Common Name	Old Man Banksia	Mature Size	15m high, 8m spread
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Mature Size	10-15m high																			
Species	Banksia serrata																			
Common Name	Old Man Banksia																			
Mature Size	15m high, 8m spread																			
TREE TYPE 3 - HARBOURSIDE PLACE/ TUMBALONG PLACE		 <table><tr><td>Species</td><td>Livistona australis</td></tr><tr><td>Common Name</td><td>Cabbage Tree Palm</td></tr><tr><td>Mature Size</td><td>25m high</td></tr></table>	Species	Livistona australis	Common Name	Cabbage Tree Palm	Mature Size	25m high	City of Sydney Street Tree Master Plan 2011 species Evergreen											
Species	Livistona australis																			
Common Name	Cabbage Tree Palm																			
Mature Size	25m high																			
TREE TYPE 4 - TUMBALONG GREEN		 <table><tr><td>Species</td><td>Melaleuca quinquenervia</td></tr><tr><td>Common Name</td><td>Broad- leaved Papaerbark</td></tr><tr><td>Mature Size</td><td>20m high</td></tr></table><table><tr><td>Species</td><td>Eucalyptus piperita</td></tr><tr><td>Common Name</td><td>Sydney Peppermint</td></tr><tr><td>Mature Size</td><td>15-18m high</td></tr></table><table><tr><td>Species</td><td>Ficus macrophylla</td></tr><tr><td>Common Name</td><td>Moreton Bay Fig</td></tr><tr><td>Mature Size</td><td>30-60m high, 30-60 spread</td></tr></table> City of Sydney Street Tree Master Plan 2011 species Evergreen Native Historic vegetation species Evergreen Native Evergreen Native	Species	Melaleuca quinquenervia	Common Name	Broad- leaved Papaerbark	Mature Size	20m high	Species	Eucalyptus piperita	Common Name	Sydney Peppermint	Mature Size	15-18m high	Species	Ficus macrophylla	Common Name	Moreton Bay Fig	Mature Size	30-60m high, 30-60 spread
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Mature Size	15-18m high																			
Species	Ficus macrophylla																			
Common Name	Moreton Bay Fig																			
Mature Size	30-60m high, 30-60 spread																			

Description	Items	Notes							
TREE TYPE 5 - CHINESE PLAZA		 <table><tr><td>Species</td><td>Prunus ssp.</td></tr><tr><td>Common Name</td><td>Flowering Sherry</td></tr><tr><td>Mature Size</td><td>6m high</td></tr></table>	Species	Prunus ssp.	Common Name	Flowering Sherry	Mature Size	6m high	☐ Deciduous ☐ Exotic
Species	Prunus ssp.								
Common Name	Flowering Sherry								
Mature Size	6m high								
	<table><tr><td>Species</td><td>Ulmus parvifolia</td></tr><tr><td>Common Name</td><td>Chinese Elm</td></tr><tr><td>Mature Size</td><td>8-12m high, 6-8m spread</td></tr></table>	Species	Ulmus parvifolia	Common Name	Chinese Elm	Mature Size	8-12m high, 6-8m spread		
Species	Ulmus parvifolia								
Common Name	Chinese Elm								
Mature Size	8-12m high, 6-8m spread								
TREE TYPE 6 - THE BOULEVARD	*TO BE FURTHER DEVELOPED	☐ Historic vegetation species ☐ Evergreen ☐ Native							
	<table><tr><td>Species</td><td>Eucalyptus</td></tr><tr><td>Common Name</td><td>Eucalyptus</td></tr><tr><td>Mature Size</td><td>25- 30m high</td></tr></table>	Species	Eucalyptus	Common Name	Eucalyptus	Mature Size	25- 30m high		
Species	Eucalyptus								
Common Name	Eucalyptus								
Mature Size	25- 30m high								

Description	Items	Notes
TERRACED LANDSCAPE GROUNDCOVER (DEEP SOIL/ ON SLAB)		_ Native
	Species	Banksia spinulosa
	Common Name	Hairpin Banksia
	Mature Size	2m high, 2m spread
	Species	Leucopogon esquamatus
	Common Name	Swamp Beard Heath
	Mature Size	600mm high
	Species	Acacia suaveolens
	Common Name	Sweet Scented Wattle
	Mature Size	300mm-3m high
	Species	Patersonia glabrata
	Common Name	Native Iris
	Mature Size	30-80cm high
	Species	Kunzea ambigua
	Common Name	Poverty Bush
	Mature Size	1m high
	Species	Macrozamia communis
	Common Name	Burrawang
	Mature Size	1.5m high, 1.5m spread
	Species	Dianella revoluta
	Common Name	Dianella
	Mature Size	1.5m high, 1.5m spread
	Species	Lomandra ' Tanika'
	Common Name	Matt Rush
	Mature Size	1.5m high, 1.5m spread

Description	Items	Notes
EVENT DECK (ON SLAB)		_ Native
	Species	Dianella revoluta
	Common Name	Dianella
	Mature Size	1.5m high, 1.5m spread
	Species	Lomandra ' Tanika'
	Common Name	Matt Rush
	Mature Size	1.5m high, 1.5m spread
	Species	Poa labillardierei
	Common Name	Tussock Grass
	Mature Size	1.5m high, 1m spread
	Species	Poa labillardieri 'Eskdale'
	Common Name	Tussock Grass
	Mature Size	0.6m high, 0.5m spread

9.0 WATER MANAGEMENT

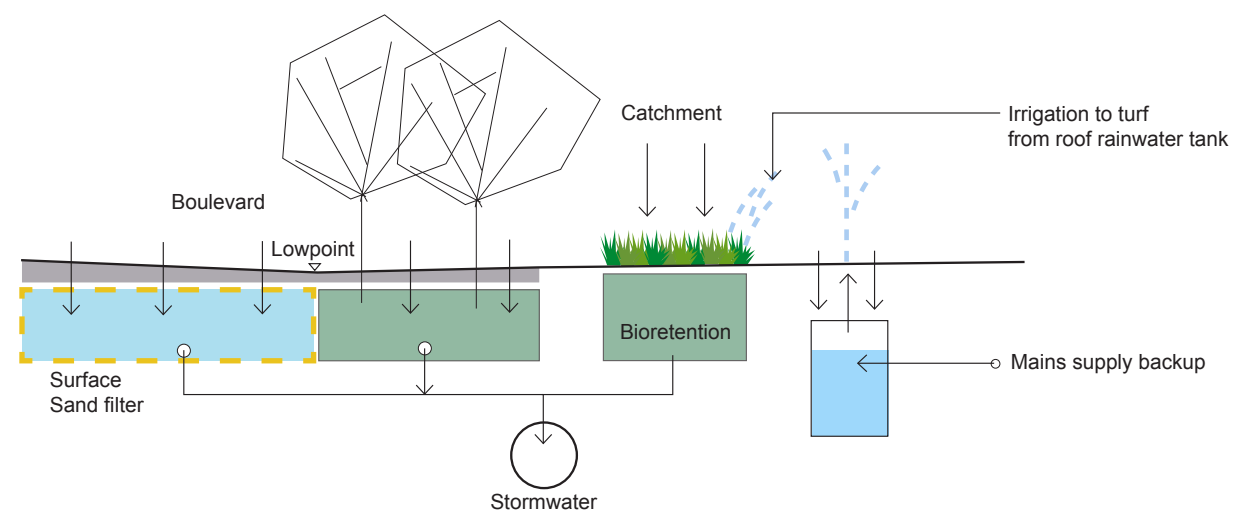
9.1

WATER SENSITIVE URBAN DESIGN

A precinct wide water management approach has been taken for the stormwater movement, catchment, storage, cleansing and reuse across the site. Site wide management of storm water across the precinct is critical to the sustainable success of both the landscape and water play elements. Surface run off is to be treated before released into the Harbour. In some lawn and paved areas, run off will be harvested, stored and filtered for reuse on the site. Roadway edges are to be used for biofiltration. Tree plantings are to trap and utilise pedestrian pavement overland flow as natural irrigation measures and ground water recharge mechanisms.

The WSUD strategies proposed for the SICEEP project site include a range of contemporary treatment methods that include

- Stormwater capture as natural means of passive irrigation to plaza and boulevard trees in pavement;
- Capture, storage, cleansing and reuse of stormwater for public water features;
- Capture, storage and reuse of rainwater for purposes of lawn irrigation and management;
- Pavement folded and modelled to allow for subsurface capture and bioretention; and
- Traditional vegetated bioretention planting filtration landscape zones.



9.2

URBAN STREAM

As part of the Darling Harbour Live vision the Public Realm is a series of interactive water features for children of a variety of ages; that combine to create a connected urban stream from south to north, along the Boulevard and terminating at the harbour’s edge. The urban stream will be both visually exciting for family members as well as other visitors, will provide life and interest to the variety of spaces, plazas and play zones throughout the site and be integrated strongly with the site wide approach to art, light and activation.

Chinese Garden Plaza

In the forecourt to the Chinese Garden, children of all ages will run through the reflective squares of mirrored water that break up the plaza space, amongst a grove of cherry blossom trees. The thin layer of water sits atop the plaza pavement for day and night time engagement and play, and can readily disappear to create a broad, expanded, flat plaza for cultural celebrations and markets. The gentle disappearing and reappearing nature of the water feature to the plaza, combined with the strong seasonal change of the orchard grove will enhance the mystical nature of the gardens beyond.

The Boulevard

The character of the urban stream, as it moves northward, will be further reinforced through a combination of art installations, varied pavement treatments, animated lighting and a series of rille like water elements that ‘move’ the water north. Between the paved zone of the Boulevard and the folds of the terraced landscape will be a low water wall that children can touch and engage with, and that will provide both strong visual interest, water movement and ambient background noise.

The Stream

Linking the various elements that make up the urban stream will be a series of interpretive art elements that, through the use of light and materiality will represent the site wide stream.



Haymarket Square urban water feature (Banyoles, Girona, Spain by Josep Mias Architects)



Disappearing water film (Holstebro, Denmark by OKRA)



Reflective water film (Bordeaux)



Water wall

Interactive water play

Further north will be a key water element that expands on the existing water play of Darling Quarter, but strategically will cater for children of ages 7-14. Adjacent the Boulevard and within the immediate vicinity of retail, cafe, BBQ facilities and amenities will be an interactive water play environment that utilised technology to allow proactive engagement and control of the jets and fountains by the user. The kinetic nature of this water play element will invite individuals and groups to manipulate the water movement through endless combinations of height, direction and timing.

All these fountains will be playful and visually compelling; they will be individually and collectively memorable; and all will be sustainable because of water-recycling and pumping with low power requirements. Importantly, they will reinforce a language of connection for the precinct, from north to south and tell the story of an urban stream that collects water and builds in momentum and activation as it reaches its harbour destination.

Darling Harbour Bowl Fountain

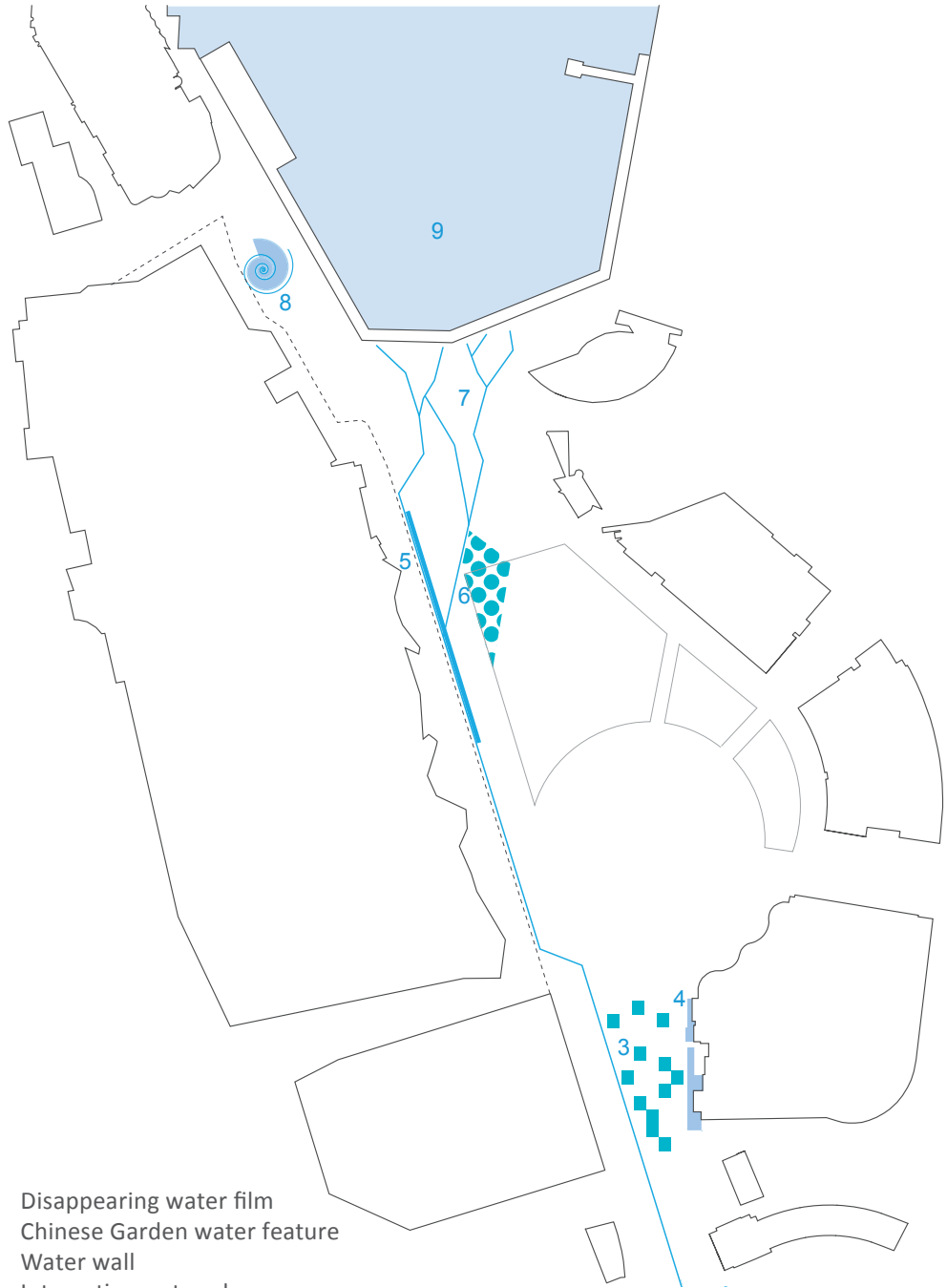
The Urban Stream concludes in the north with the existing Woodward Tidal Cascade fountain. This fountain is a beloved piece of Australian public art, is Woodward’s masterpiece and deservedly world-famous. It attracts children ages 5 to 12 as well as their parents, siblings, and passers-by.



Urban jungle (Installation by Lee Eunyeol)



Tidal Cascade, Woodward Fountain



- 3 Disappearing water film
- 4 Chinese Garden water feature
- 5 Water wall
- 6 Interactive water play
- 7 Water lines
- 8 'Tidal Cascade' Woodward fountain (retain)
- 9 Darling Harbour