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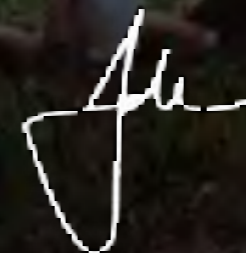
HARBOUR PARK DESIGN COMPETITION

STAGE 2. SUBMISSION

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ACKNOWLEDGMENT OF COUNTRY

We acknowledge the Gadigal Country, we acknowledge her custodians, the people of Grass tree, we acknowledge their kin the Wangal, Bidjigal, Cabrogal and Cammeraygal who often visited this Country to connect and share.

We are a family of designers with a diverse and broad lens of experience and cultural sense, brought together through our common principle of Custodianship.

Acknowledgment for us is more than words, it is our response to the responsibility and the inspiration of the all encompassing nature of Country.



1

DESIGN VISION

1 DESIGN VISION OVERVIEW

Vision



Harbour Park is borne from Country. Its form is sculpted by the wind, gathering places cooled by water and storytelling reflections of the sky. It is a place of strength, inspired by the fisher women of Eora. This is not a park, but instead is place of celebration for an enduring culture.

The park will be a profound, globally recognised and iconic addition to the suite of Sydney's waterfront open space. It will showcase First Nations design methodologies on a global scale to create a place that is rich in culture, deeply connected to Country and enduring in its ability to regenerate, grow and adapt to environmental and cultural shifts.

A sanctuary, for people and non human kin alike. A place that is timeless, yet acutely aware of deep time and a legacy that projects far into the future. The design we have created tells a story, like a carving made in the sandstone foundations of Eora, it is the story of Country, its people and the future. Art emerges from the park as depictions of Country. Where art and park are one.

Through Country-led design, this park holds a power greater than that envisaged by this proposition, it is a transition of great social significance towards national self-awareness, real recognition of our first Nations people's deep connections to Country, and our collective and binding potential for true cultural reciprocity.

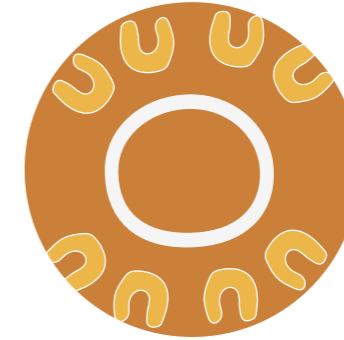
One park - a vessel to be the keeper of many millenea of stories and foundation for new ones. Barangaroo Harbour Park is a place for bringing all Australians together around elevated understandings of past, present and future.

A public domain and its evolving ecological regeneration of landscape that crystallises a rare opportunity for reciprocity at scale: With nature & environment, with society and culture, and with Country and identity. At Barangaroo Harbour Park the opportunity is to establish a platform for a new cultural beginning of civic-scaled reciprocity.

Design Approach and Principles

The landscape of Harbour Park has a key role in repairing and restoring rifts in the ancient systems of this land. **Country centered design initiatives will support regenerative ecology and natural systems.**

The Park, though, should be not a time capsule nor should it recreate on singular moment in time, instead it should represent a new vernacular of design for Sydney. Designing with Country is inherent in all facets of design, and is the basis for all work upon this land. A new cultural ecology will emerge deeply connected to place and responsive to the needs of all kin within it.



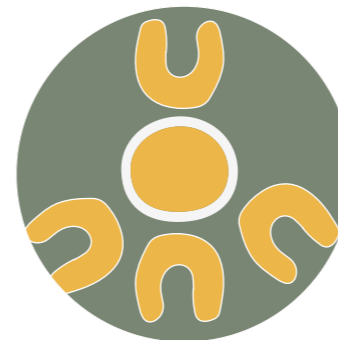
CONNECTED

Opportunity to prove a deep connection to Country, inherently linked to the sky above, land below, and all elements within. People will move along side non-human kin to experience this new landscape utilizing timeless tools of Country to establish a lasting park.



REGENERATIVE

The park-scape is to step beyond sustainability and move towards regenerative design. By working with Country, the landscape will begin to heal and influence all connected to it - the land, the animals, the vegetation and the people.



REFLECTIVE

The park will be a place of reflection, physically and metaphorically. It will reflect the importance of Country, considering this approach in an elemental form. Key ideas will be reflected and embossed into the land. It will result in a thoughtfulness and intellectual connection between park users and place.



TIMELESS

This park must not represent a moment in time. It will celebrate the depth of time that came before and the opportunity for the park to reach into an expansive future. It is to be timeless. People will enter the park and be lost in time, transported to deep time and propelled into the future at the same time.



RECIPROCITY

The park will take only what it needs and provide back to Country a condition better from which it was taken. It is a reciprocal relationship between park, people and environment. Through regenerative principles, the park will contribute in an increasing manner to the ongoing viability of this new environment.

2 UNDERSTANDING THE SITE AND CONTEXT OF HARBOUR PARK



Figure 1. Pre 1788 Shoreline

We appreciate that this site location has special qualities that we observe as invaluable to its interpretative and experiential potential. The Parks' context on the western edge of Sydney CBD, its significance as the final puzzle piece of the decades-long urban renewal of Barangaroo and its place in the socio-political landscape of Sydney, will contribute to the considerations for the design of this place. Looking beyond that however, we draw upon the nuances of the site and context – the features that set it apart from any other place in Sydney. Central Barangaroo provides a western foreshore “bookend” to the open spaces of the CBD with the Botanic Gardens and the Domain in the east.

Natural Context

The Harbour Park site is located entirely on reclaimed land. The upper edge of Cockle Bay, once characterised by steep escarpment, with sandstone outcrops and a small strip of sandy beaches, adjoining a harbour abundant with sea life to sustain the people of Gadigal Country.

The site's Harbour-side location places it within view line of Me-Mel (Eye), located at the entry to Cockle Bay. Significantly Me-Mel offers vantage to the broader Harbour, thus by celebrating views to the Island we expanding the reach of Barangaroo within Sydney Harbour

Light to Dark

The site has a westerly aspect that is oriented towards the



Figure 2. Sydney Harbour Context

setting sun. A billion suns have set on this foreshore. A billion transitions from day to night. From light to dark. It is a place of endless cyclical transition towards darkness. A place that never “sees” a rising sun.

Water

As land borrowed from water, opportunities to celebrate Water Country and the importance of water for the people of Eora will be core to the park narrative. Eora women dominated the waters of the harbour, coves and bays, and the coastlines in between. “The women skimmed the waters in their simple bark canoes with fires lit on clay pads for warmth and cooking” (Collins, D 1798). This experience of water, the harbour's ebb and flow under the influence of the moon's gravitational pull is a dynamic quality that we know is redolent with profound potential.

Wind

The prevailing wind direction in this part of the harbour is typically from the west and north east. As recorded by Observatory Hill weather station, almost every morning begins with the whisper of a westerly blowing across the harbour's surface towards the site of this future park.

The landscape may be formed to receive these whispers and transform them in to the “voices” of the harbour-scape. A park that animates invisible threads of air into aural experiences that breathe life into the experience of this unique place.

3 UNDERSTANDING HARBOUR PARK AS PART OF BARANGAROO



Figure 3. Barangaroo and Darling Harbour Context

Barangaroo “encompasses three unique and interconnected precincts: Barangaroo South, Central Barangaroo and Barangaroo Reserve”.

Barangaroo Central was intended to be a human-scaled precinct with focus on a people focused public realm.

Harbour Park sits to the west of the future mixed-use Barangaroo Central development site. It is framed by Wulugul Walk on its north and western edge. It was intended that Wulugul Walk would provide a “consistent and memorable experience of the waterfront edge, as it moves through the three parts of the Barangaroo precinct”.

The design intent was to embody a “naturalistic” promenade at Barangaroo Reserve, a “civic waterfront promenade” at Central Barangaroo and an “urban waterfront promenade” at Barangaroo South. The condition of the trees and scale (*Celtis australis*) is poor and not successful in achieving Civic Waterfront Promenade.

Wulugul walk is approximately 18m wide, setting back the Harbour Park site significantly from the waters edge - a condition that will be addressed through the park design proposition.

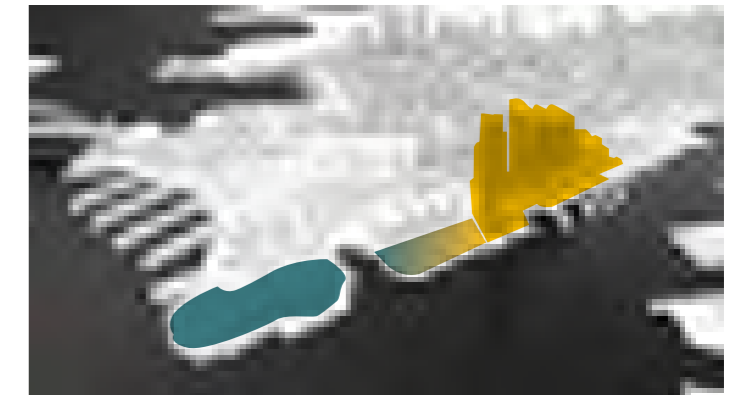


Figure 4. Harbour Park to function as a transition between the Headland Park and Barangaroo South.

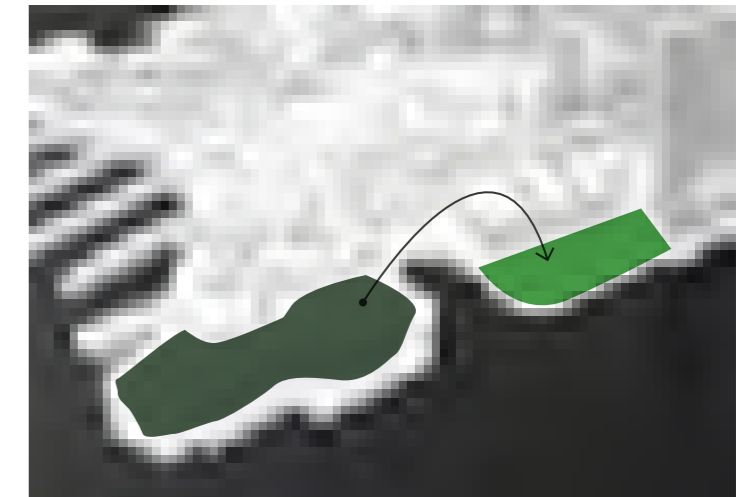


Figure 5. Vegetation Character of the Headland to be referenced within Park, while maintaining a distinct identity

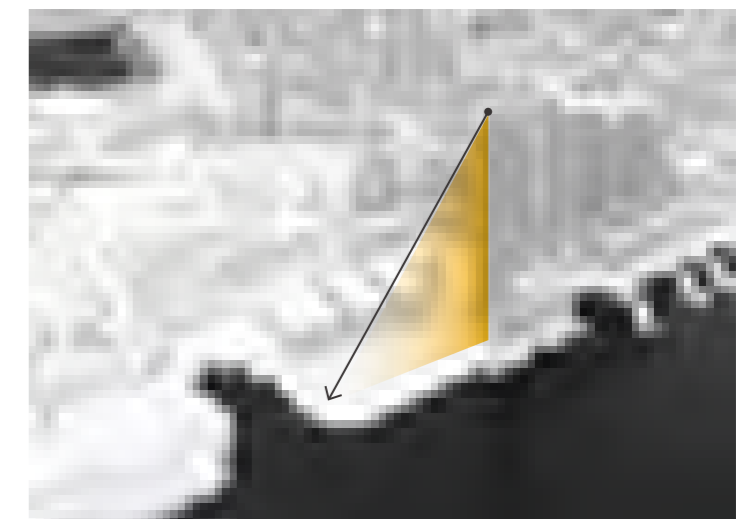


Figure 6. Design to introduce 'human scale' to manage transition in scale between Barangaroo South and the Park

4 HARBOUR PARK DESIGN GOALS

Our proposition for Harbour Park addresses the 8 design goals established by INSW as outlined below:

1 ENDURING:

Abandoning the colonial notion of park design and drawing upon a “Deep Time” appreciation of Country will allow an informed design that exists on a time scale unfathomable in the colonial context of Sydney. Not a re-creation, instead an interpretation of history, of culture and of a People. A celebration of Country and a reflection of a Country lost.

Led by Country the park is flexible, educational and timeless in its ability to leave an enduring legacy on the place. By starting with Country, the place will be robust and resilient. It will share the stories of the past and make way for stories of the future.

The park is designed to evolved with time, growing along with those who visit it. A succession planting strategy is proposed to ensure the establishment of a robust landscape.

2 COUNTRY:

Country is a cultural topography that frames the ancient knowledge of the Australian Landscape. Collected and nurtured through an oral tradition of dance, stories, song and art carefully designed and maintained, gifted to each generation. The design for Harbour Park is grounded in Country. It draws from connections to Deep Country below, Sky Country above and all elements between. Each feature of the park is inspired by Country and contribute to the regeneration of Country to support and celebrate the enduring qualities of Eora.

3 FLEXIBLE

The park design provides a dynamic framework for a unique and flexible park experience. Key gathering spaces are carved into the site as if sculpted by wind. In turn the landforms created provides an armature of protection to the key spaces. Various planting typologies have been selected and placed based on micro climate, but also to define key park areas.

The spaces created are not wholly conventional in form, but through considered land management methods (cultural burning and foraging etc), the occupiable park spaces can expand and contract over time.

4 EXPERIENCE

Harbour Park will offer a unique park experience for Sydney. A curated experience of spaces anchored by landmark art pieces define key gathering and activity nodes within the park, also representing a significant celebration of Country.

Along with a range of expected park activities, the design includes consideration for safe spaces for cultural activities

to be led by local community.

5 IDENTITY

The Harbour Park is an innovative, contemporary park anchored in deep history. It will be an exemplar project for water front parks recognised worldwide. A bench mark for culturally sensitive, Country forward and climate positive landscape and urban design. It will leave an enduring legacy for Sydney, an accessible place for all people. The Park will be synonymous with Sydney’s identity and the next layer in the rich history of the Barangaroo Precinct. It will provide a complimentary transition between the Urban Barangaroo South and the naturalistic headland.

6 MOVEMENT

This design honors Wulugul Walk as the connective thread linking all areas of Barangaroo and the city beyond. We propose that the failing tree planting within the walkway should be replaced with larger scaled natives to reinforce the identity of Harbour Park and its role in transitioning between the Urban Southern Precinct and Natural Headland

Within the Park, a hierarchy of movement paths are proposed ranging from the formal to the explorative. The park design and structure supports broader City Scaled movement connections to the east and south.

7 URBAN INTERFACE

Consideration has been made to the transitions between the park and surrounding urban context. To balance the scale of Crown Casino, dense tree planting is proposed to establish a human scale and a view filter to the building beyond. The interface with Barangaroo Ave and Central Barangaroo development is edged with pavilion buildings offering park amenity and activation. These follies define the edge of the site and assist in the transition between built form and park.

8 SUSTAINABILITY:

The inclusion of Aboriginal-led sustainability and viewpoints can produce an alternative to the detrimental path we are currently traveling down. Collaboration between First Nations knowledge holders, First Nations design practitioners, cultural ecologists, designers, planners, engineers, financiers, policy makers and industry are generating new, co-produced and progressive mainstream strategies that are shaping an First Nations-led regenerative development model for effective adaptation in how we think, live, and move in our home space and society (Marshall, 2019).



Figure 7. Elements of Country expressed through design



Figure 8. Visual Connection to Me-Mel

5 DESIGN APPROACH

Borne of Country



The journey through the park will be carved as markings in sand, sculpted by wind. Curated by land form and vegetation changes, the park structure is designed to subtly educate and achieve a deep and cumulative experience of Country.



Figure 10. Design Ideation through model Making

First Nations-led Regenerative Design

By harnessing the regenerative power of the site and earth itself we can restore little bits of paradise and focus on returning biodiversity. It's where people can find satisfaction and the meaning of life and our lives, how we as humans interact and inter weave with nature. The holistic nature of interactions is embracing Aboriginal ideology of land, that includes acknowledgment and respect.

The aim of regenerative development is to create conditions conducive for life to thrive on our one Earth and to create equitable, healthy and prosperous relationships between the technosphere (human economies) and the biosphere.

Initiating a Law for the Site: The Sky and earth provides life, this is the foundations of Respect, roles and responsibilities. Design Innovation through obligation and interdependence.

Preserving balances: the natural cycles, maintaining, restoring and conserving as opposed to exploitation of the land. Living and walking Country in harmony not only with each other but with all living entities

Understanding natural cycles and natural patterns: adapting social and cultural practices in accordance with the changing climate and environment.

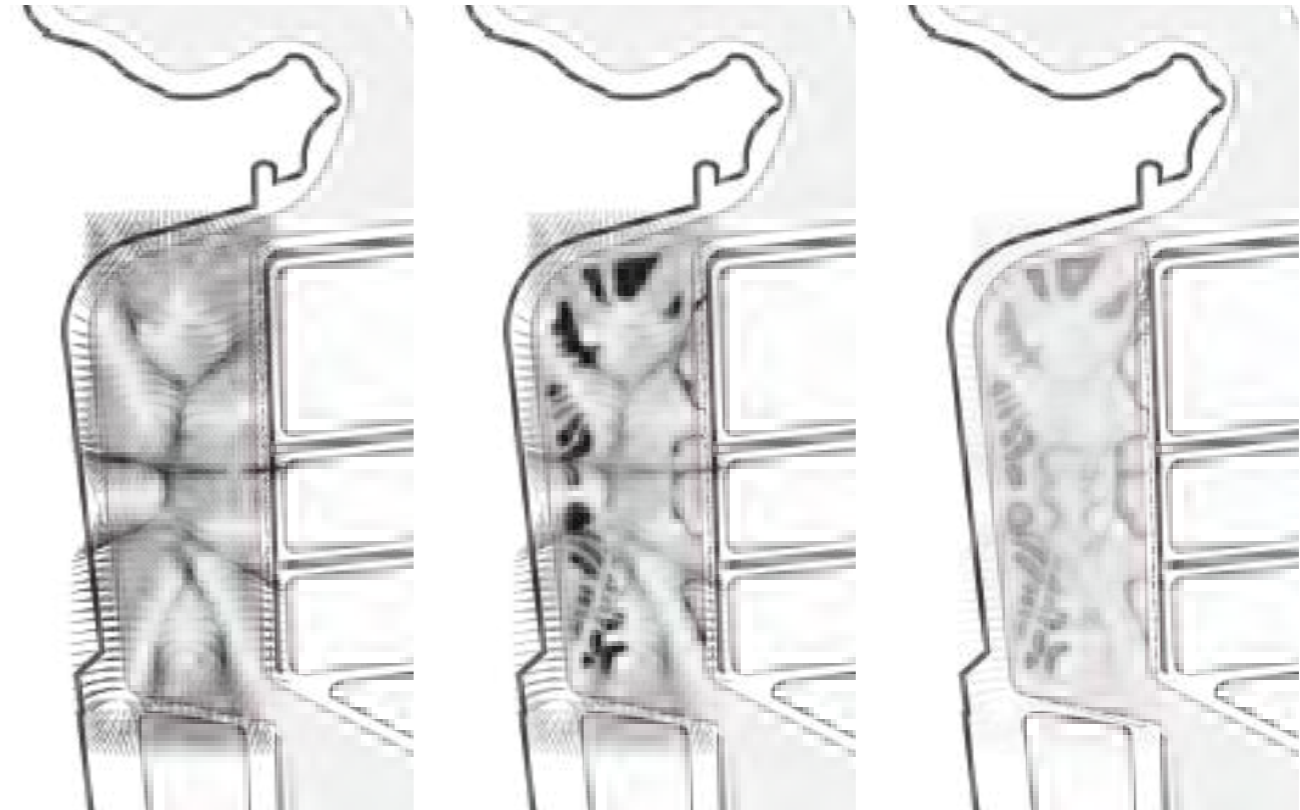


Figure 11. Land form establishment

Sustaining Healthy Functions

Regenerative processes have three primary goals:

- Catalysing increased prosperity and health of human and natural environments through holistic design and meaningful community participation
- Fostering positive feedback loops where human and natural resources are utilised within the biological carrying capacity of our planet.

- Respect and deep consideration to local contexts, whether economic, cultural or ecological, so that development is properly adapted to local ecosystems, cultural and economic circumstances.

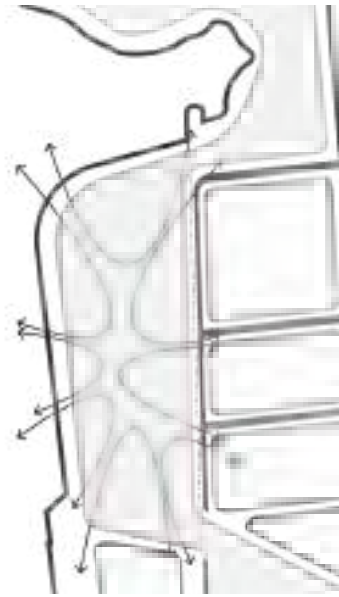
Creating a regenerative future will require every level of society to adopt a new set of values and to reorganize in ways that facilitate collaboration, evolution, and innovation.

- The restorative and regenis includes the architecture and materials and cultural paradigm of custodian governance of the regenerative cultural landscape needs.
- The planning & design process including integration of built form into the landscape; regenerative /restorative.
- Human infrastructure flows based on cultural landscape needs /requirements & regenerative design principles.
- Ecosystem cyclic needs species habitats corridors and energy flows including restoration
- Analysis of water including atmospheric, land systems and fostered form.
- Analysis and understanding of the cultural dimensions, tangible and intangible of location within a cultural landscape.



Figure 9. A Cultural Planning Paradigm

Key Design Moves:



1. External forces sculpt the land form of the park:

Topography is created in response to site features such as wind, movement patterns and existing landscape influences.

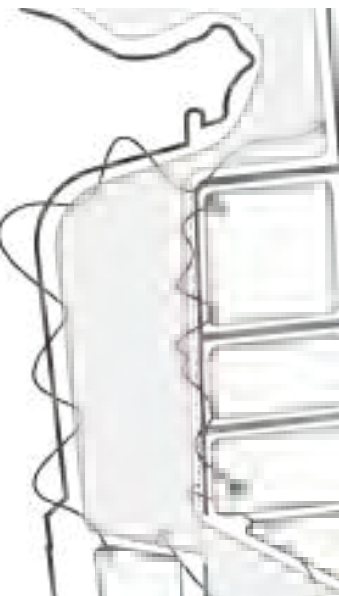
The land becomes a functional three dimensional form, rising in areas where protection is required, and retreating in zones to allow water to enter the park.

Land form sculpting results in a highpoint forming towards the center of the site. A vantage point and opportunity to achieve a sense of prospect over the Park



4. Water to protect and enhance the Park experience:

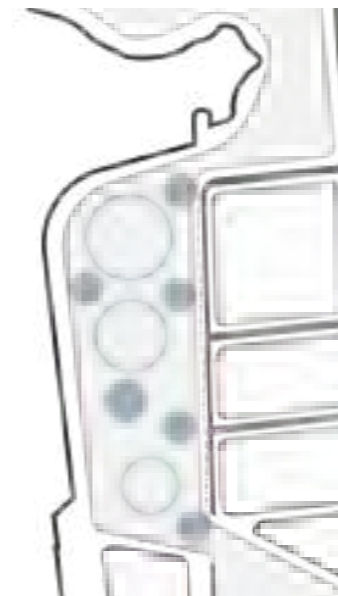
Layers of water are employed within the park to ensure there is a clear connection to water Country and the importance and power of water is harnessed within the Park. Although set back from the Harbour's edge, the park is greatly influenced by its proximity. A cooling effect achieved by wind crossing the water and entering the site from the north and west. To further enhance that relationship, a line of water located along the western boundary to feel as an extension of the harbour. Water also marks the eastern edge of the site providing amenity offering a cooling experience along the site's urban interface.



2. Internal Factors influence the surrounding landscape spaces:

As a dynamic exchange between Park Space and the surrounding context, the Harbour Park design will expand from its boundary in an organic sense. Tree planting on Wulugul Walk will take on the character of the Park, replacing the failing exotic species with Civic scaled and appropriate native trees that support the character of the precinct and offer a more sensitive transition between Headland and Park.

The Harbour Park design should influence the expanded design of Hickson Park to improve visibility, access and to reinforce the strength of the Park design.



5. Seasonal Camps for year-round park activation:

Key Gathering places are anchored by the land mark art. The landscape of these areas will have a distinct character reflecting various landscape typologies of Eora. Planting character and typologies respond to micro climate to ensure the longevity of the landscape to withstand the park conditions.

Within these zones, areas of respite have been created to ensure there are places of comfort within the park diurnally.

Depending on weather conditions and personal preference, people will find a piece of park suitable for their needs year round.



3. Circulation for a connected precinct:

The primary access path through the park runs in a south west to north east direction formalising a desire line between the future Barangaroo Metro and Wulugul Walk.

Once within the park, visitors will be invited to explore the park via an experiential path network or lead through the vegetation communities in an explorative sense.

Path materials on the diagonal connector will vary to reflect the park character. This will also help slow movement on this path and support free-form movement within the park.



Figure 12. Park Concept Plan

6 ARCHITECTURE

Architecture Concept

Urban Interface

Harbour Park sits at a delicate intersection between the nature and city, between history and future vision of urban growth. It needs to negotiate between the busy and active South Barangaroo, the unknown Central development and the calm beauty of the Headland. The architectural elements have the potential and the to facilitate these relationships.

By positioning the pavilions on the Barangaroo Ave spine we activate the street and interface with the built-form, providing a gradual transition between natural and human made. Furthermore we rely on planned infrastructure for vehicular accessibility, servicing and waste management.

The Park lateral accesses and the pavilions position are based on the acknowledgment of the future urban axes and key intersections of Central Barangaroo. We aim to maximize visibility and way-finding from key accesses and improve night safety by interfacing with street and retail.

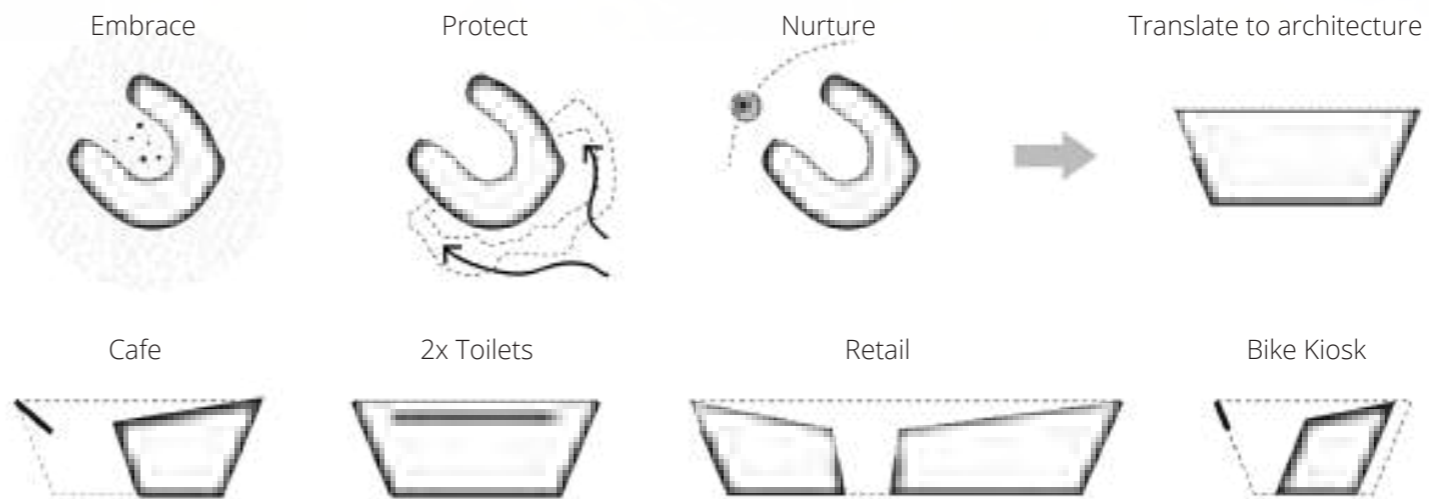
Program-wise each pavilion is placed in a key position that maximise its function, its relationship with the art pieces and its role of facilitator between city and park.

The Cafe and Toilets sits on the north corner, visible from the headland, the Metro exit and Hickson Road. They interface with event space and cove maximising sun and views. The retail interfaces with Barangaroo ave and lanes, providing max window visibility and activation of the intersections. The Bike Kiosk and a second toilet block interface with South Barangaroo promoting healthy lifestyle and connection to Darling Harbour.

Same language, individual identities

Conceptually based on the idea of "Protect, Embrace, Nurture", the pavilions respond by form and tectonics to the natural elements, the landscape and the city.

From an initial U-shaped sketch, 4 different identities evolve within the same language and materiality. Each presents a compositional variation that responds to the sun, the wind, the views and the program within.

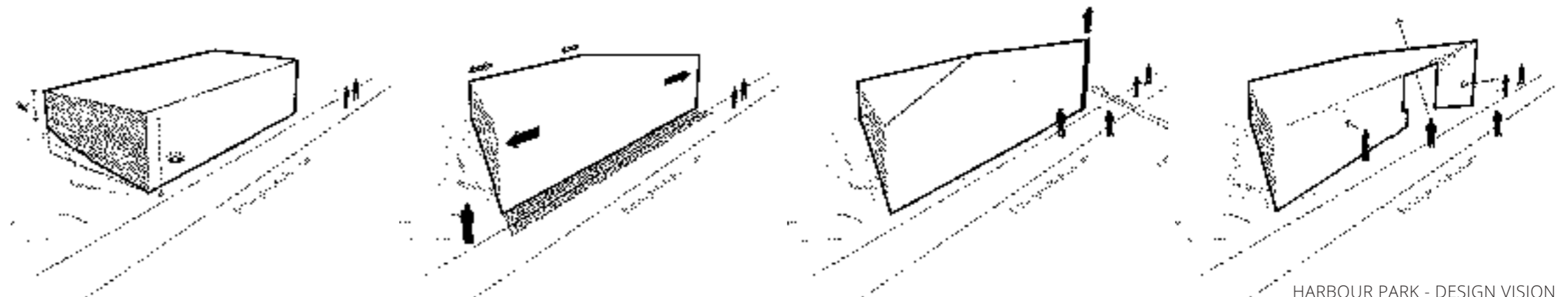


1. Interface between Nature and City

2. Maximise street frontage

3. More visibility at key intersections

4. Respond to context and program





2

PUBLIC ART

1 PUBLIC ART OVERVIEW

Jake Nash and Chris Fox

We believe that art can change the world, a city, and an individual. We believe in a First Nations-led public art response to the Harbour Park Design Brief.

By bringing together our practices as co-designers, we believe we have created a highly original and authentic response to the opportunities presented by the Harbour Park Design Brief. The combination of our creative energies and skills has led us to discover layers of meaning and possibility for these artworks, to provoke new ways of perceiving and being in the world, and to generate a series of responses that encapsulate our future-thinking and uniquely Australian creative vision.

The core of connecting to Country is acknowledging the interconnectedness of everything that exists in a complex kinship system between the land, people, and spirit. We believe that our proposed artworks, both in their conception and creation, sit at the heart of all three.

We acknowledge that First Nations art practice has never been decorative or static. It is defined by purpose, by Country, by clan, and by story. Art, Country, and clan are inextricably linked. These beliefs are embedded in all aspects of our public art design response.

These are just some of the First Nations principles of art, design, and thinking that underpin the conceptual intent, design and materialisation of our proposed artworks. These are the principles that have cared for this Country and its people for 65,000 years and that continue to guide us in the creation of these new works.

Landmark artworks

The three integrated artworks are currently named with the working titles Moon Vessel, Wind Vessel and Water Vessel. We believe that they not only strongly answer the requirements of the Design Brief, but push beyond its expectations. They will be three interconnected landmark artworks that will exist at the forefront of contemporary First Nations and Australian art, design, and thinking.

The three artworks are located from west to east on the Harbour Park site. They respond to Country and are born from Country. We do not need to look beyond the boundaries of our site for inspiration, as Barangaroo Harbour Park connects us to the water of the harbour, the sky above it, the wind that travels through it, and the many First Nations stories held within the Eora Nation. Our design response has grown from our analysis and appreciation of the unique characteristics of this location.

The artworks reflect Barangaroo Parklands vision of becoming a landmark destination, locally, nationally, and internationally. These three First Nations-led artworks are at the cutting edge of design thinking and practice. They are uniquely First Nations and Australian, born from this place for this place.

Moon Vessel, Wind Vessel and Water Vessel

At the core of all the artworks is the idea of the vessel. These shapes hold culture, story, knowledge, and people. The vessels also contain apertures, oculus-like openings, that enable people to focus their view, look beyond, and see the significance of Country, its stories, and to see the world differently through the knowledge they have gained.

Through the strength of our core values of connecting to Country, the artworks lead the highly integrated narrative through the park, including the cultural and architectural shapes we have created. We believe these artworks will become living cultural landmarks embedded in the heart of the city. They will become the places where we will gather, a place for all of Sydney's stories to be shared: the stories of who we were, who we are, and who we will become.

Moon Vessel is a suspended vessel surrounded by water, connecting sky and water country, allowing people to gather beneath it. It is an artwork born from the night sky, acknowledging the connection between the tides of the harbor and the moon's cycles, which are intrinsically linked. The moon does not exist without the earth, the water and tides do not exist without the moon, the animals of the harbour do not exist without either, and we the people hold the stories that connect them all.

Wind Vessel visualises the pattern of the wind. Stories, songs, language, and people again come together and gather under the vessel. It is a place of ephemeral collection and a gift from sky Country that provides shelter and cultural exchange.

Water Vessel is a place of gathering. Its large aperture encompasses water, earth, and sky country, bringing together all of the cultural narratives and knowledge of the park. It looks out to the harbor and Me-Mel, connecting the park to other narratives that exist around the harbour.

As a connected narrative, the artworks pull you through the site. During this journey, you experience each artwork and gather information about Country and culture.



Figure 13. Moon Vessel

2 PUBLIC ART PRINCIPLES

Time, change, seasons and nature

Excellence

We believe that our proposed artworks strongly address the requirements of the Design Brief whilst pushing beyond its expectations through the creation of a design response that is at the forefront of contemporary First Nations and Australian art, design and thinking.

Moon Vessel, Wind Vessel and Water Vessel will function as symbolic markers of time and place that also speak to past narratives and future aspirations. We perceive of these three artworks as unique and yet interconnected.

The artworks will be integrated within a broader and highly considered landscape response. They have been assessed for deliverability, materiality, maintenance and safety to match the poetics of our conceptual art response to the specific criteria associated with the installation of large-scale public artworks within the public domain.

Diversity of Projects

Our public art response for the Harbour Park site evolves as a visually stunning narrative explored across three large-scale iconic works. Each work functions in harmony with the others through a consideration of First Nations knowledge, Country, framing and embracing the impact of environmental forces and climate at the Harbour Park site.

The works are all iconic forms of significant scale to match the criteria and aspirations of the Harbour Park Design Brief.

Sustainability and Heritage

As a direct response to the sustainability objectives of the Barangaroo precinct, we will work towards achieving a water positive commitment with our artworks. Moon Vessel, Wind Vessel and Water Vessel will aspire to be resilient, socially and economically sustainable, and have heritage considerations embedded at the heart of each work.

Our proposed artworks are informed by First Nations culture and connection to Country that is central to custodianship of the land, and therefore exist within a continuum of life and heritage that is beyond the bounds of contemporary time. As such, these are artworks that will continue to hold meaning and resonance for the community of Sydney, and the world, far into the future.

Connectivity

Our proposed artworks foster a audience connection through their interactive aspects. Water Vessel is a visual frame to capture the many stories that exist throughout the harbour. Wind Vessel will function as a place of shelter and knowledge, providing shade and cooling the atmosphere on hot days. Moon Vessel reflects back distortions of shape and colour when viewed from underneath, providing contextual mirroring and evoking a sense of grandness and one with the Universe. Each of the three artworks is set within a surrounding context that contains unique landscaping elements that further define their individual characteristics and evoke a sense of place.

Creative Collaborations

Our proposed artworks have been developed out of a unique creative collaboration between artists Jake Nash and Chris Fox. These two artists have come together as part of our broader design kinship to listen, respond and share ideas as part of the development of our public art design responses. A new design language for the Harbour Park site has emerged that is based on truth, respect, place and people and First Nations knowledge.

Discovery

Our artworks invite participation and learning. Through form and articulation they amplify and celebrate the First Nation culture and stories and the natural elements of fire, water, wind and earth, drawing audiences into contemplation of these as metaphors for change and interconnectedness. As viewers move through Harbour Park they transition from one work to the next, observing Moon Vessel as a vessel that affects the tides of the planet, Wind Vessel as a place for respite and contemplation, Water Vessel as a vessel through which to look forward, to real and imagined horizons, and to a future beyond the known of time and place.

We can imagine visitors entering the park at the western edge and being drawn through the site by the artworks, learning about the history and culture of their Country along the way. By the time they reach the harbour, they will have a deeper understanding and appreciation of their place in the world.



Figure 14. Water Vessel



Figure 15. Wind Vessel

3 PUBLIC ART GOVERNANCE

Future Dreaming

There is a legacy within our design approach that talks to the future. We envisage this park and these artworks to be cared for by First Nations people who will curate the ongoing cultural activities in these spaces. We are allowing space for these cultural activities to take place in the city, as part of a collective shared future informed by First Nation peoples.

Additionally, our public art proposal responds to the relevant published governance plans for the Barangaroo precinct.

Public Art and Culture

Our artworks address and answer the primary aims of the Barangaroo Public Art and Culture Plan (2015). Through our strategic placement of iconic large scale landmark forms within the park precinct, we are providing visitors a diversity of experiences that will engage them with First Nations culture and thinking and connection to Country.

Our proposed artworks are not static. They are fed by material responses to climate and the passage of the seasons. They are alive with an embedded knowledge of natural cycles and intimately connected with First Nations knowledge of Country. Their strong connection and reflection of the element of water further connects them to the tidal and maritime narratives of this section of the Barangaroo precinct.

Our public art response makes a continued commitment to art and culture at Barangaroo, shaping not merely a suite of permanent artworks, but also forming a number of auxiliary spaces for ongoing cultural expression on site, including performance staging areas and sites for community ritual.

Art Implementation

Our proposed suite of artworks address all key criteria of the Art Implementation plan draft extract (2023). Our creative response to the Design Brief delivers a series of landmark artworks at significant scale that are integrated within Harbour Park and are environmentally focused.

Our artworks for Harbour Park are multi-layered, interconnected and iconic. Moon Vessel, Wind Vessel and Water Vessel provide visual and experiential connections to the natural environment, capturing elements of these are symbolic representations of the planetary moon and its cycles, the wind and the way that it moves across this specific site, the water and the way it can be captured, shaped and observed. While integrated into the landscape, our artworks will also play a placemaking role, helping to define the various zones of the Harbour Park.

Heritage Interpretation

Our proposed artworks address the fundamental planning principles outlined in the Barangaroo Heritage Interpretation Plan (2022) being simultaneously 1 / Entertaining 2 / Relevant 3 / Organised and 4 / Themed.

Using both the local First Nations language and English translations as titles for this suite of artworks will position them in a moment in time that is reflective of the contemporary cultural context, an era in which the community seeks acknowledgment of First Nations ownership of place. We will seek further guidance as to the final names for these works through community consultation and in collaboration with the Harbour Park Curator and First Nations Advisors as part of the next stage of this project.

Place Activation

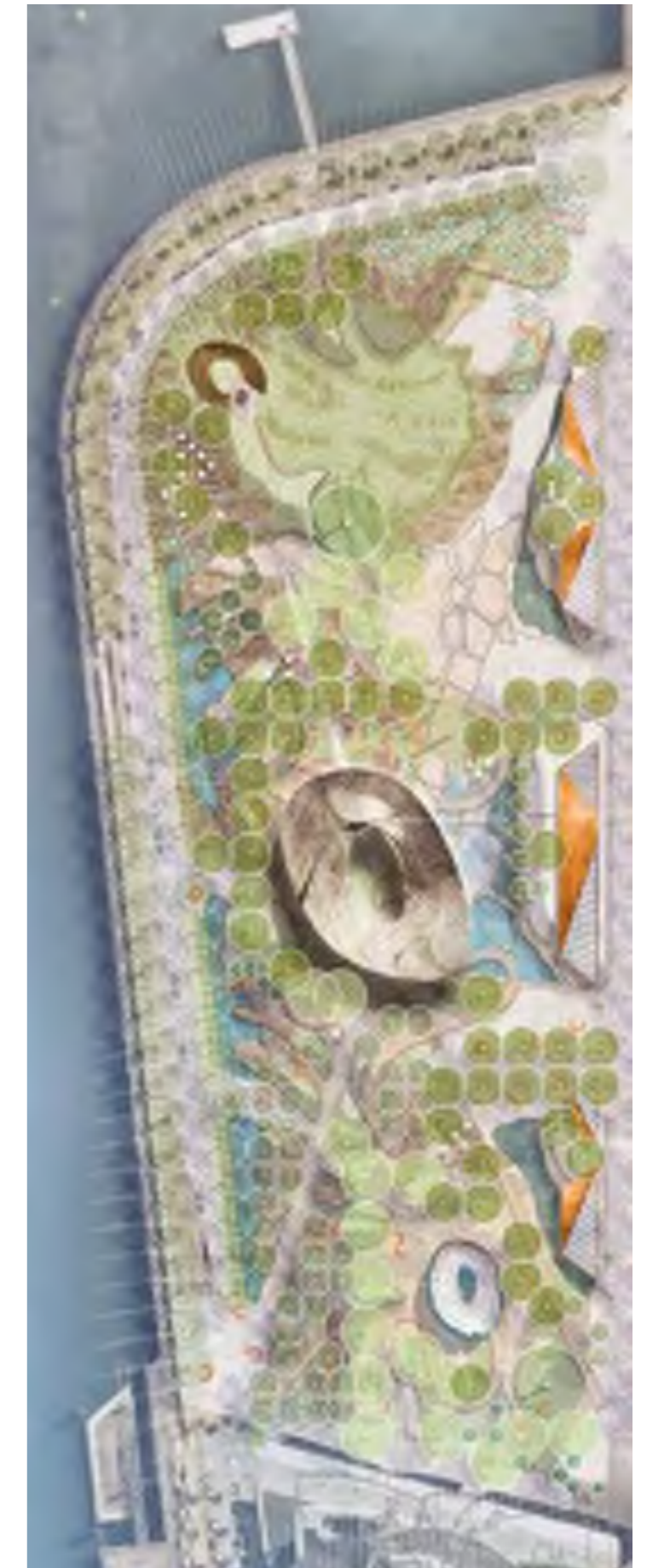
Moon Vessel, Wind Vessel and Water Vessel address all the key criteria of the Barangaroo Place Activation Framework (2015) contributing to the development of Harbour Park as an engine room for future growth, attracting tourism and on-flowing economic benefits, and making a meaningful contribution to Sydney's brand recognition and acknowledgment as a major global city.

These are iconic artworks to be born into a place of transformation and renewal, providing the best of city life whilst also drawing upon pre-colonial history and nature as sources for inspiration. A First Nations presence is fundamental to the design of the artworks.

Set within an overall Harbour Park experience, our suite of public artwork will help frame major civic events whilst individually and collectively creating a range of world-class and inspiring experiences for residents and visitors alike.

Collaboration with Harbour Park Curator and First Nations Advisors

We propose to continue our established collaborative working methodology in order to embrace the contributions of the Harbour Park Curator and First Nations advisory panel and ensure appropriate consideration of First Nations culture at the Harbour Park site. This is especially important in relation to the final naming of the artworks.



4 HERITAGE INTERPRETATION

As specified by the Design Brief, our work will connect contemporary and future visitors to the Harbour Park site by delivering a suite of culturally significant permanent public artworks to create a memorable public space, give voice to Country and First Nations and Non-First Nations communities, and address the rich cultural, historical and ecological context of Barangaroo.

Public art will be a platform for multiple creative and cultural voices that will shape a living, dynamic, multi-faceted and evolving place. In doing so, our proposed artworks will align with the five themes of the Barangaroo Heritage Interpretation plan.

Badu (water) is the life-force of Barangaroo

Badu is the life force of Barangaroo and the artworks live in harmony and acknowledge this power, through their conception, layout within the site, and meaning.

The Moon Vessel's gently undulating surface recalls the extension and retreat of tidal flows, informed by the phases of the moon in the sky above.

The Wind Vessel creates an iconic water vista and reminds of the westerly winds that blow across the water surface.

The Water Vessel looks out to Badu, connecting the park to all of the other narratives that exist around and through Harbor. These artworks are intertwined with Badu, they do not exist without it and are the life force of not only Barangaroo but also the artworks.

Barangaroo is the home of timeless spirit and culture

Our suite of artworks are a continuation of First Nations culture that has always existed on this land. Barangaroo is a place of timeless spirit and culture. Our artworks look to Barangaroo for inspiration and celebrate this space, creating places for cultural connection not only now but into the next century.

A tradition of sustainable practice and innovation has endured through the many evolutions of the site

The artworks led by First Nations artist Jake Nash and co-designed with Chris Fox acknowledge the strengths and cultural differences of both artists. The fusion of their practices results in highly innovative artworks that respond to the brief in both conception and outcome. The artworks are also a testament to a co-design process that is built on trust, deep listening, and design discourse.

The artworks acknowledge Country and its history. They are created to live on Country and to be a testament to a highly innovative co-design approach and thinking that will help shape a city now and in the century to come.

Barangaroo has been shaped by the resilience and fortitude of individuals and communities

The artworks that we propose to sit upon this site are places for community now and in the future. They are symbols of resilience, celebrate First Nations culture, and allow for community to take ownership of these artworks and embed them into their lives and the cultural landscape of the city. This is what we hope the legacy of these artworks will be: to continue the narrative of strong, resilient communities and clans at Barangaroo.

Testimonies, triumphs and challenges of Barangaroo

As a First Nations-led public art response, we not only practice and embody connecting to Country, but we also acknowledge and sit inside the site's history. Connecting to Country for us extends to all aspects of the site, both its pre-colonial and post-colonial histories and many stories that shape it.

Our design response responds to this history by acknowledging that this site has a deep history and that history does hold trauma both for its people and the landscape. The artworks we believe address this history in a way of placing First Nations thinking into the landscape and artworks.

The artworks create places for these discussions to take place, offering spaces to take shelter and reflect. They also look strongly toward the future and celebrate First Nations culture. The artworks seek to be integrated within contemporary discourse regarding progress towards an Australian culture and society that truly recognises its First Peoples, as an innovative, modern, and forward-thinking nation.

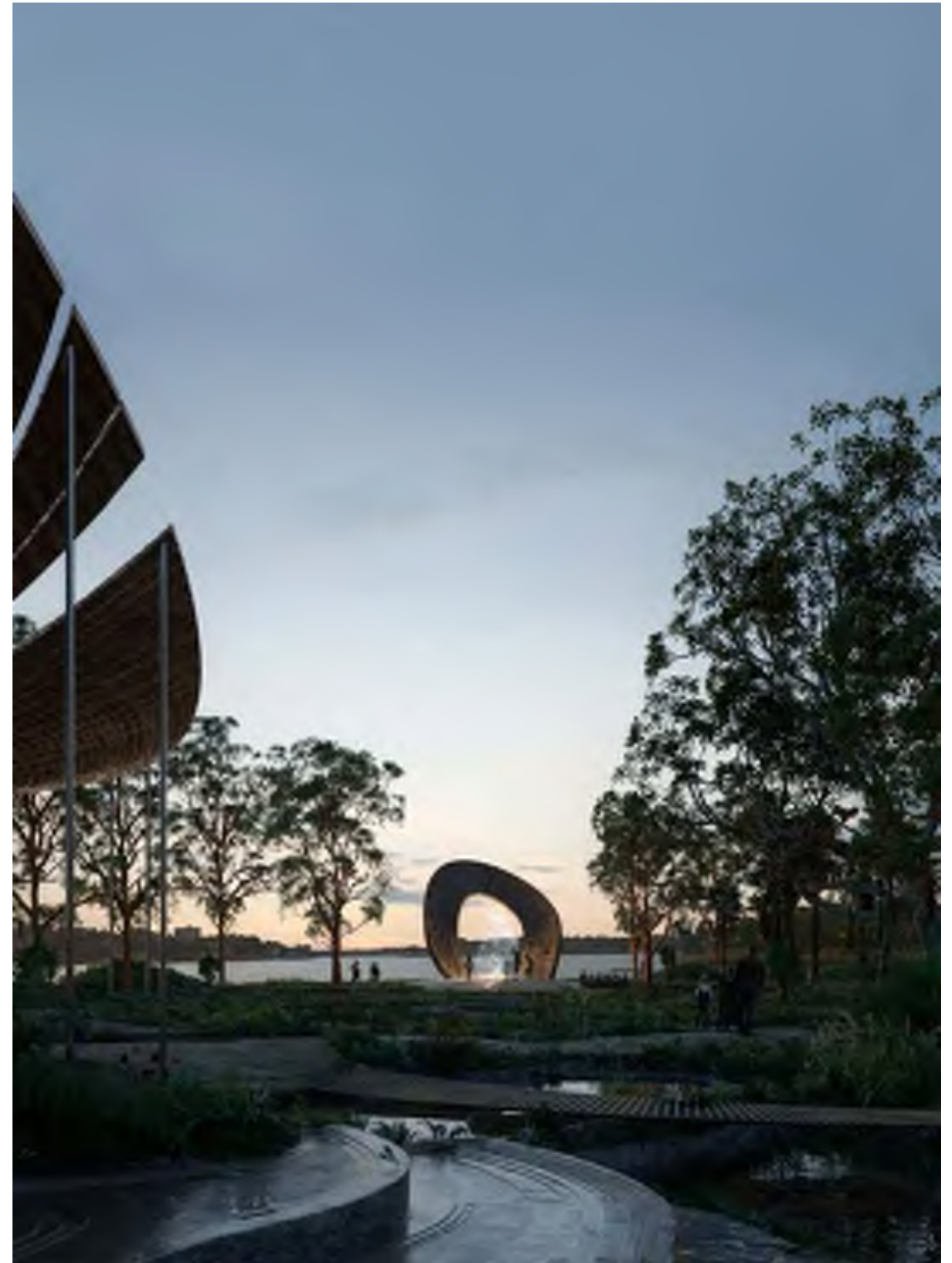


Figure 16. Water Vessel

5 PUBLIC ART METHODOLOGY



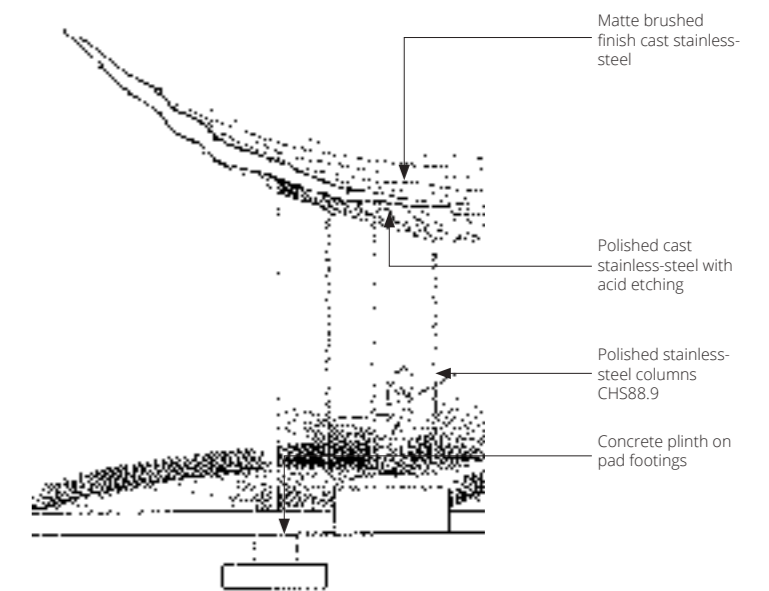
MOON VESSEL

Moon Vessel is suspended above the ground by poles that are deliberately positioned by the mapping of wind across the site. The highly reflective underside of the Moon Vessel reflects not only the water and Country around it, but also the people who gather beneath it. The reflective underside is marked by lines. These appear to reference the tidal lines of the harbor, and are also the microscopic pattern of fish scales.

An oculus acts a threshold between water and sky country. This aperture allows knowledges to pass through it and also acts a place for water to continually catch and fall, creating a water curtain. It reinforces the artworks connection to country and talks to endless cycles of time.

Technical specifications / Moon vessel

Moon Vessel is supported by polished stainless-steel poles 90 millimeters in diameter. These columns are sitting on individual concrete plinths linked together by pad footings to spread the load of the artwork. The vessel is composed of multiple assemblies split radially and bolted together to shape the vessel and guarantee structural integrity and performance. Their structure depth varies between 50 millimeters on the edges and 280 millimeters in the section mid-point. The internal structure is a waffle type computationally optimised for fabrication and installation. The cladding panels are cast stainless polished and acid etched on the underside of the vessel. The top side has a matte polished finish to minimise any lens glare effect. The water curtain effect is created by a water feature installed inside the vessel, enhanced by rainwater during rainy days.



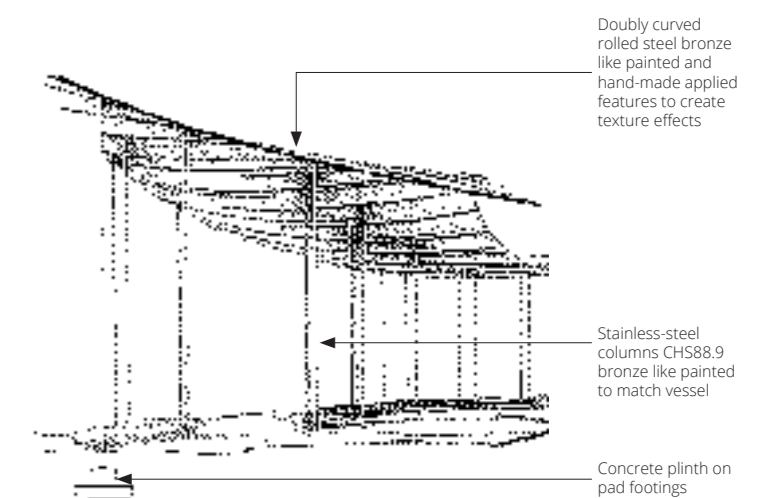
WIND VESSEL

Wind Vessel is a suspended vessel located in the centre of the park. It collects not only the people who travel through it, but also the stories, songs, and language from the past and present that travel on the wind. It is a place of ephemeral collection and a gift from sky Country that provides shelter and cultural exchange.

As artwork it is made of steel, it shapes further references a vessel and there is an aperture connecting it sky Country. It also could be seen as a visual representation of the wind, the cut out line work that wraps across the face of the artwork again reference the wind patterns across the site and the poles holding the artwork up are placed in accordance to the wind pattern.

Technical specifications / Wind vessel

Wind Vessel is designed to be visually and structurally as light as possible. The canopy will be made by doubly curved rolled steel 20mm to 40mm thick depending on the structural requirements. The canopy texture is created through the integration of digital technologies, paint and hand-made applied feature. The canopy is split into different individually supported elements referencing the wind lines that influence the entire park. This approach allows easier fabrication and installation on site. The different parts are supported by circular hollow sections 90mm diameter columns. The supporting columns are painted to match the canopy colour finish. They are installed on individual concrete plinths connected by pad footings to minimise the load of the artwork on the ground.



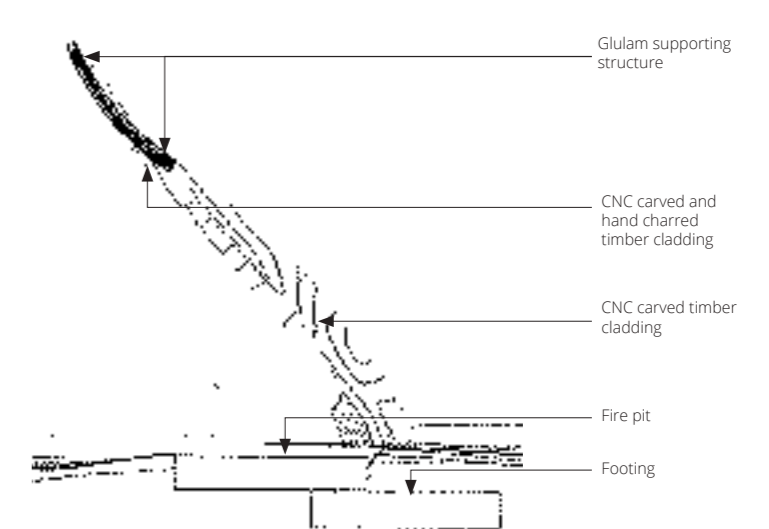
WATER VESSEL

The Water Vessel is a connection point to the rest of the harbor and a place of acknowledging the past while also being a gathering place for the future. It is made from timber, with the side facing the harbor burnt and charcoaled, paying homage to the many campfires and Nawi fires that have existed across the harbor before settlement. The side facing the park is left natural and open to the elements, speaking to the shared history the city now has and its future.

We see the Water Vessel as a place for gathering and ceremony, both contemporary and traditional. We hope it is a place that will be used by First Nations people now and throughout the next century as a place to gather for cultural events in the city.

Technical specifications / Water vessel

Water Vessel is installed on an in-situ poured concrete footing that works as ballast for the artwork. The main structure is made with Glulam beam with variable cross sections depending on the necessary structural performance. To stiffen the frame, secondary Glulam bracing beams are part of the system. The beams are computationally placed and split into elements that can be digitally fabricated and transported as a normal load for a quick site install. The cladding panels resemble traditional hand carved objects. They are subdivided within the computational workflow following the radial shape of the portal and fabricated by combining CNC machining with craft processes. The face oriented towards Me-Mel has a hand-made charred finish.



6 INTEGRATION WITH DESIGN RESPONSE

Founding Principles

We have perceived a strong sense of cultural responsibility in the development of our public art response, one that has positioned us in the role of caretaker and facilitator for this place.

There have always been First Nations symbols across this land that stretch back 65,000 years. What we offer the city of Sydney are a collection of contemporary symbols that continue on a legacy of First Nations custodianship of the lands upon which we reside. These symbols will guide us into the next century and beyond.

A project of this nature is far bigger than two artists and one team; it is a culturally significant expression that is a marker of place through time. The integrated public artworks that we have conceived for Harbour Park will exist as a conduit for the expression of knowledge and reciprocity, for contemporary and future communities.

Consequently, our multidisciplinary project team have taken the opportunity to think about the Barangaroo site broadly as a 'stage', and to activate its potential as a place for acknowledgment. Our work here aligns with the aspirations of contemporary Australian society. Set within these founding principles, Moon Vessel, Wind Vessel and Water Vessel are expressions of Country and the city in which we live, and the community and society that we wish to be. These sentiments are echoed in our broader design and landscape response for the entirety of the Harbour Park site.

The notion of interconnectedness, and deep reverence for nature and the elements, are mirrored in the selection of tree and plant species, positioning of natural vegetation, design and placement of auxiliary service buildings and other park infrastructure that provides the context for these three artworks. Every aspect of our design for the public artworks has been informed by our team's shared thinking and consideration of nature as our guide.

Moon Vessel, Wind Vessel and Water Vessel are an interconnected songline held together by a response to Country and to culture. Like the parklands in which they are located, these artworks will not be static; they will be deeply engaged with the Country that they reside upon. They will be brought to life through an interplay with nature and the seasons, and established as sites for gathering. They will function as living cultural objects within the city of Sydney to be loved and appreciated by local residents, visitors, and the world, for generations to come.



Figure 17. Water Vessel



Figure 18. Wind Vessel



Figure 19. Moon Vessel



Figure 20. Art integrated within the Park



1

FUNCTIONAL REPORT

1 FUNCTIONAL OVERVIEW

Functional Overview

Barangaroo Harbour Park will be a harbourside park that is accessible for everyone from all parts of Sydney.

The opening of the Metro will ensure that the park will be one of the most easily accessible public parks from a public transport node that connects to the wider metro and rail system. As part of the Wulugul Walk route which links towards Circular Quay to the North and Tumbalong to the South it will become a destination while also being a discovery for incidental passers by. The proposal looks to pull visitors through the site and disrupt what might have been a quick journey into a day of discovery.

The design of the park has been spatially arranged based on a key cross desire line from the North East corner to the South West corner that will tie into main thoroughfares while also offering a meandering, wandering route that allows visitors to take in the variety of spaces and experiential qualities. Both movement paths are fully accessible allowing everyone to experience all the unique landscape spaces.

The three Artworks act as landmarks across the park arranged on a diagonal from the South-East corner to the North-West corner towards Me-Mel. Two Port Jackson Figs act as landscape anchors along the same diagonal. Additional keystone tree species for the different park zones further re-enforce the arrangement and legibility of the landscape spaces. During event modes the clear view lines, routes and landmarks throughout the park will allow for ease of orientation and way-finding.

The proposed location of all the amenities along Barangaroo Avenue creates an urban interface edge with visual permeability into the park. The amenities are spread along North to South to service key entry points and allow for ease of accessibility.

Feeling safe in the park is paramount to ensuring it is a place to visit and inhabit throughout the day and time of year. Design considerations such as clear sight lines and low glare lighting will enhance the sense of security for visitors. The park provides opportunities for a variety of day and night activations which will bring the park alive with life. The visual and physical permeability of the park boundaries and adjacent built form will offer passive surveillance from all sides and above.

External Image References:

1. Forgas Arquitectes, Montjuic Heights
2. HDLA, Laurance S. Rockefeller Preserve Interpretive Centre
3. Frankton's, Hoggins self binding gravel 10mm to dust.
4. Fluidity Design Consultants, Healing Waters at Sidney and Lois Eskenazi, James Garland
5. SWA Group_Sun City Tower Kobe
6. Fujiko Nakaya, Fog Sculpture, NGA

Park Structure



Figure 1. Circulation



Figure 2. Park Zones



Figure 3. Water



We support the Barangaroo Central aspiration to be a vibrant, walkable pedestrian district. The Park is designed to be a place for people where movement and circulation is not only considered, it is enhanced through experiential qualities of the design and ultimately providing an opportunity to journey through Country.

The primary path connection connects the north east to the south west of the park. It moves across land form and through a changing landscape. Carved through geology and between vegetation visitors are guided by visual cues as experienced in a natural environment. A secondary path network intersects that main connection and is to be exploratory and informal in quality, floating above the landscape. While visitors may move at will through the park off the formal paths, it is these experiential networks that we have carefully curated to weave through the park in to achieve a sense of wonder and delight.

The park has been designed as one whole park-scape united by Country. To define key programmatic zones, landmark artworks have been positioned as anchors within the landscape. They have been carefully located to respond to Country and enhance connections within the park, but also influence the design of the landscape around them.

To the north, the Water sculpture marks the event lawn. It frames views to Me-Mel across the water and provides a platform for performance and ceremony.

Centrally located, the Wind Vessel hovers above the high point of the site. While ultimately a sculptural element, it also provides shade and weather amenity. Beneath this structure passive spaces for picnicking sit alongside nature and play.

To the south the Moon Vessel sits enshrouded by tree planting. A passive, yet flexible landscape and an opportunity for reflection and moon gazing at night.

Water is the connective tissue, the circulatory system, the confluences and paths within and between Country. The meeting of salt and fresh water, where one drop forms setting a path through Country, connecting with story and landscape. As land borrowed from water, opportunities to celebrate Water Country and the importance of water for the people of Eora are core to the park narrative.

Water is used in several ways through the park all of which allow human interaction. The design provides rain gardens for water treatment, ponds with misters for cooling and visual effect, water play and water integrated with sculptures. Path networks are design to directly interface or span over the water bodies for additional interaction.

Mounding in the northern part of the site will provide a viewing vantage point over Nawi Cove. Adjacent amenities provide change room and other facilities for swimmers utilising the Cove.

Events and park use opportunities

A key ambition for Harbour Park is for it to be a place for events, gatherings and celebrations of varying types and scales. Designed as a celebratory space, the park can accommodate a range of activities throughout the public domain, with specific provision of an event lawn at the North of the site designed to accommodate a standing crowd of 6000 people.

As with the rest of the park, the event lawn has been designed to be flexible in its use and with a first nations led maintenance scheme can utilise techniques including foraging, harvesting and cultural burning to increase the usable area for large events.

Throughout the park, native lawn species are proposed in lieu of turf. These species are robust, require minimal maintenance and are fast growing for regeneration post event. The lawn is complimented by kangaroo grass and other tussock species that can be harvested when required.

This design has focused on how to differentiate itself amongst the offering of event spaces in the local proximity. A consideration specifically for cultural ceremony and performance has been made within the event space and elsewhere throughout the park to ensure culturally safe spaces are provided for all and the local community can take ownership over the use of the park.

The park has been designed for day and night use, coming to life at night with the moon and stars showcasing sky Country through the lens of the park.

Water Meadow:

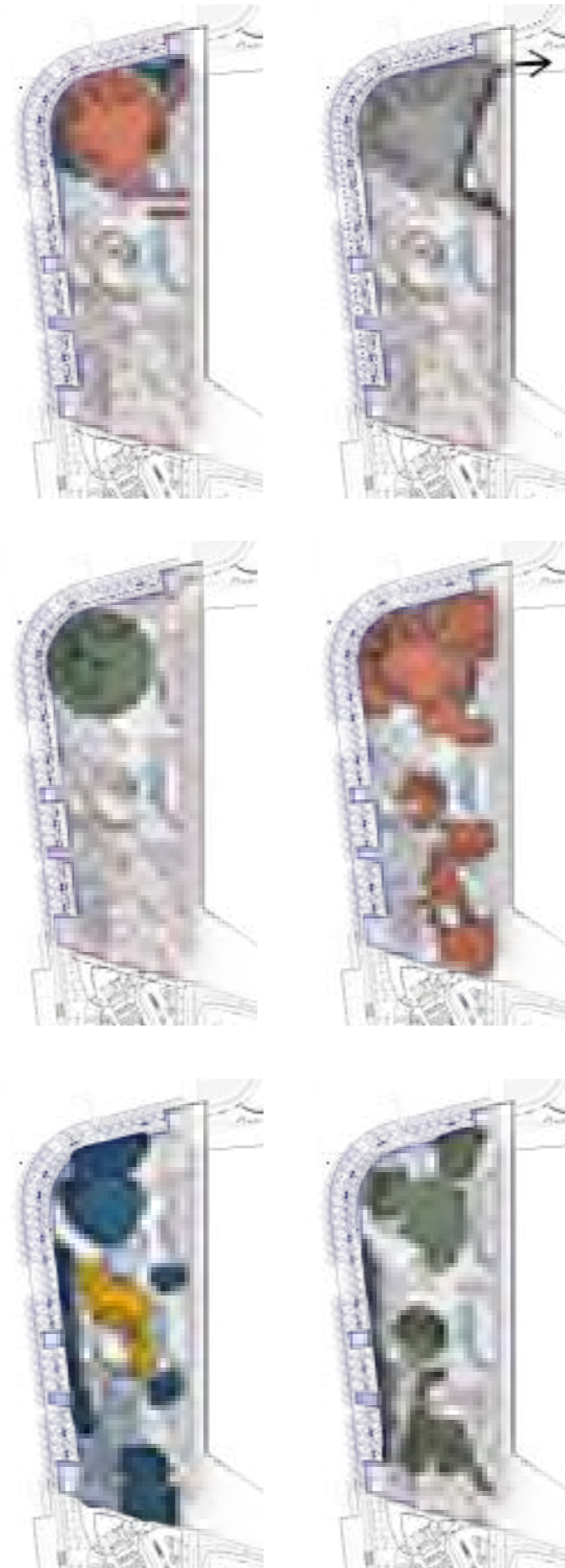
Larger capacity events can be held here throughout the year with Sydney Harbour, Me-Mel and the headland park as a backdrop. From key cultural events such as NAIDOC celebrations through to concerts, outdoor performances and the iconic Sydney Vivid, this space is dynamic in form ensuring it feels welcoming and active when no event is taking place.

Wind Park:

The art structure is grand in its form and a beacon for the park. It becomes a place of gathering in the spaces beneath and surrounding it. Located in proximity to the active play area, smaller events related to education, story telling and cultural workshops would be held in this area. Pop up markets and food trucks may be located in the active heart of the park.

Moon Garden

Protected by vegetation, this zone provides opportunity to host a range of smaller events such as small performances, bush food and medicinal tours, weaving workshops and food markets.



A day in the life:

WATER MEADOW



WIND PARK



MOON GARDEN



Play and Engagement with water



Figure 4. Play



Adventure play is shown throughout the Harbour Park proposal for people of all ages and abilities. Meandering paths, water, planting, natural features all play a role in the imaginative and interactive playscape that this design creates.

A series of stepped water terraces create a permanent water play space with a spring that bubbles out water as it trickles down to the bottom and comes back around. Water plants and ferns edge the space for further tactile and experiential qualities of a re-created natural space. The water play pays homage to the original sandstone escarpment which filtered and released freshwater from the upper ridge line down into the saltwater harbour.

External Image References:

- 4. Fluidity Design Consultants, Healing Waters at Sidney and Lois Eskenazi, James Garland
- 7. DCLA, Village East Park Colorado
- 8. WAX Design, Adelaide Zoo Nature Playground
- 9. Mount Kosciuszko Trail, Snowy Mountains

Consideration has been made to the depth of water bodies so to mitigate any safety concerns with appropriate materiality to reduce slip risks.

Shallow water pools with misting during warmer months are to encourage water play and interaction, whilst the surrounding planting can be used for imaginative play and building elements.

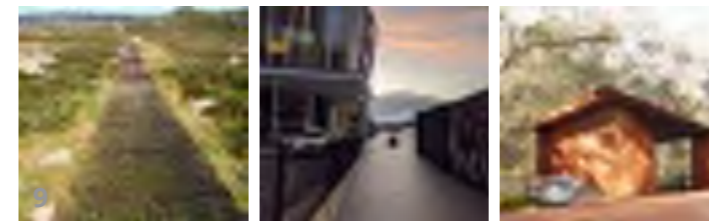
Logs, sandstone rocks, topography, materiality all enhance the playful nodes which are situated in the central and outer edges of the park. This combination reflects Country's elements and people's understanding of them whilst being great habitat for non human kin.

Nature play teaches our future generations about their surrounding environment, which is so important in today's very urban society. It connects them annually to seasons and the textures of Country.

Active Transport



Figure 5. Active Transport Diagram



The proposal considers future and current transport connections into it. Having an entry point at the North-East for the future metro connection ensure people can move easily into and through the landscape; entry to the South-East creates ease of access from Hickson Park, Wynyard train station and the Hickson Road and Barangaroo South bus stop; the entry at the South-West corner creates seamless connection along Wulugul Walk and Barangaroo Wharf 1.

Bikes can ride freely around the entire site, along Wulugul Walk and Barangaroo Avenue. A bike kiosk sits along Barangaroo Avenue for storage, maintenance and e-bike charging stations.

The pedestrian focused design has both direct and meandering paths in the proposal that range in experiences. Taking a moment to walk through the landscape will teach you something new, at every visit throughout the year.

Inclusive Design



Our Harbour Park proposition seeks to maximise the quality of life for all park visitors. We design for a range of cultures, abilities, ages, and genders to promote truly inclusive design. Equity in design looks to ensure that everyone feels safe and welcome in the spaces where they can gather in groups or relax individually. We believe in the power of design to enhance the comfort and usability of a space. The interaction between people and their environment is as a living and evolving dialogue. We aim to anticipate future needs of people and place to result in enduring design outcomes.

Through considered design interventions, we seek to maximise the quality of life for people. We strive to remove boundaries, improve safety, provide appropriate amenities, increase participation, enable ownership, integrate social requirements and enhance the overall enjoyability of a place.

Built form and Amenities

Materiality

Each year, scrap merchants process about 1.9 millions tons of ferrous scraps. Not only these scraps are still incredibly durable and versatile and 100% recyclable, but the recycling process is cheaper than producing new steel. Recycling 1 tonne of steels saves 1,131 kg of iron ore, 54 kg of limestone and 633 kg of coal and a lot of space in landfill.

The eastern states produce the bulk of steel scraps, due to concentration of industry and population and the lower costs of collection and transportation, making up-cycled steel an excellent sustainable, low cost and local choice of material.

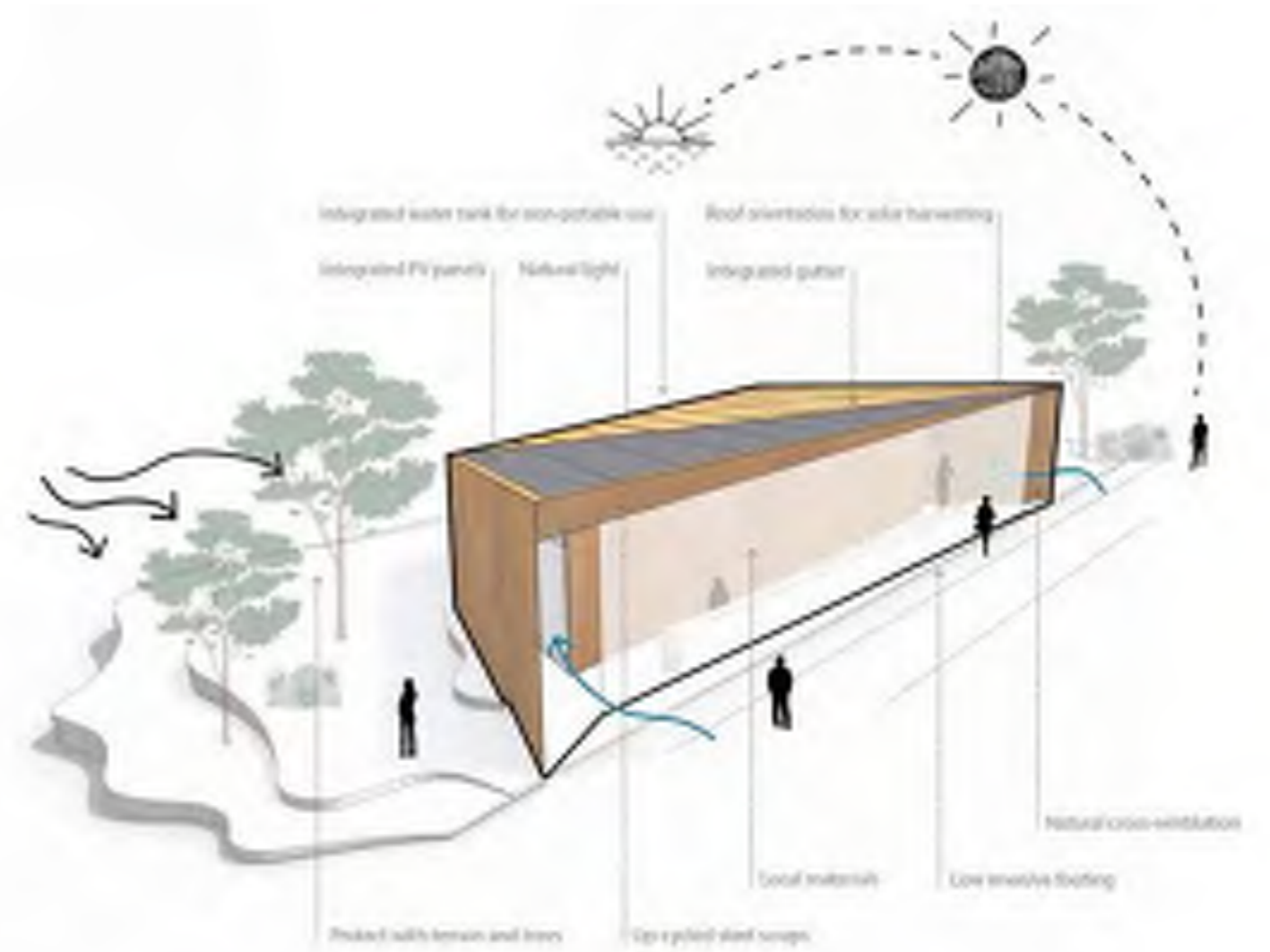
The five pavilions are built with up-cycled steel panels cladding over a supporting steel structure.



Sustainability

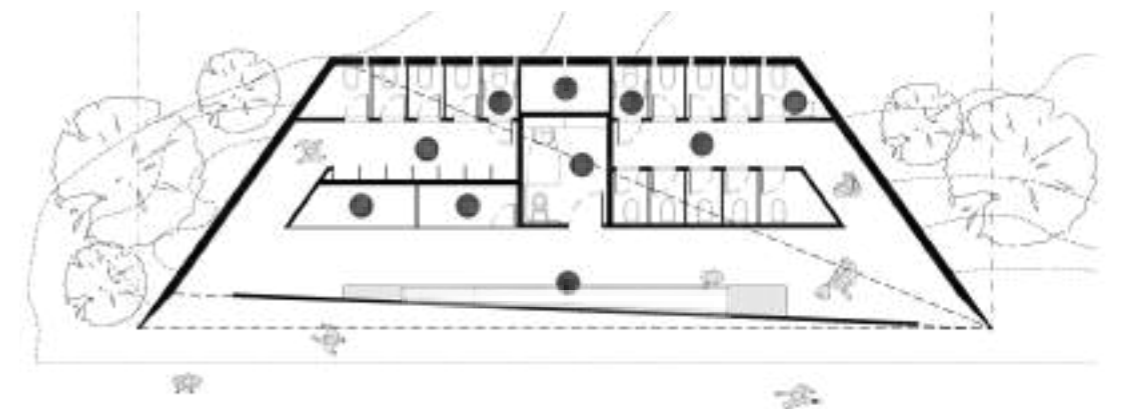
The pavilions are designed to maximise users' relationship with nature and minimise embodied and operational carbon expenditure:

1. Integrate high performance / low-tech strategies in the early conceptual design stage, implement computational workflows to ensure data-driven positive feedback on design development, maximise prefabrication.
2. Reduce the pressure on processed supply water by the mean of rainwater harvesting through the roofs and integrated water management, which can be used both in the amenities and for irrigation.
3. Reduce reliance on fossil fuels by adopting design integrated photo-voltaic panels on each building which maximise the site orientation towards north-west
4. Reduce embodied carbon by selecting local suppliers, low carbon materials and sustainable re-cycling manufacturing processes, limiting installation and demolition carbon expense through design.
5. Reduce operational carbon by harvesting the Elements: implemented semi-hypogean design to protect from the strongest winds, harvest breezes for cross ventilation, avoid direct sunlight to reduce heat overload, provide generous covered outdoor space, rely on PV and water harvesting for daily operational use.



Toilet floor plan 1:200

1. Common washing area
2. Male toilets
3. Female toilets
4. Accessible Toilets
5. Wheelchair accessible toilet
6. Baby changing facilities
7. Bins
8. Storage
9. Water tank





4

TECHNICAL AND OPERATIONAL REPORT

1 TECHNICAL AND OPERATIONAL REQUIREMENTS

Sustainability

The technical design approach delivers on Barangaroo with whole of systems thinking and climate positive commitments, respecting the fundamentals of natural biospheric and cultural paradigms that regenerates and promotes the ecological and cultural value of the land.

Demonstrating a smart, sustainable, and integrated design approach the park forms part of a much wider precinct strategy and integrates elements and ecotones beyond park boundaries to serve the precinct and community broadly. The Green/Blue will serve a polish of recycled water with sub soil filtration, the planting and canopy will moderate winds beyond the edges of the site and repair disrupted geological process. Materials embed circular economy principles embedded with Country, whilst lighting embodies a sensitive, smart, and safe approach. Energy storage and control facilities the electrical infrastructure demonstrating smart grid technologies.



Emphasis is on the creative approach or “a different way of knowing and thinking” which extended into diversity in cultural scientific presentation of First Nations mind frame and approaches. This is intended to create and generate innovative work to extend the diversity of cultural expression in landscape presentation now and into the future.

The focus of Barangaroo Harbour Park is to develop a park that re lenses the approaches to sustainability and exemplifies Aboriginal metaphysics to regenerative practices where design is in the mindset of placing primacy on Country. Regenerative design incorporating First Nations thinking goes beyond ‘sustainable conditions’ to restorative and regenerative outcomes that match the speed, scale and magnitude of the challenges we face.

The key principals are to restore and enhance water flows, both in landscape and in quality. To engage people and their place in this water and consider climate change, urban refuge and place for kin. The whole design is directed to facilitate involvement and thought about the dynamics of filtering processes of water flow and vegetation, connectedness of water and sky, wind and land. To re-establish a local ecosystems of cultural biodiversity and space that is designed for the interactions of Aboriginal metaphysics within a living education immersion providing intergenerational experiences of elemental and cultural dynamics. A place also for kin that emphasises the values for sky, land and aquatic relationships and interactions. Creating a circular framework of growth and regrowth, without waste. All energy landing on site is used on site with a carbon positive outcome absorbing carbon in natural cycles.

To enable these interactions and outcomes we take a natural systems engineering approach based on bio cultural aesthetics to the development. Taking the design of natural landscape functions and features the distribution of natural landscape elements filter and enhance natural water flows.

Water capture and recycled water from Barangaroo development is used to enhance the growth of plants, enabling evapotranspiration and reducing heat island effects facilitating micro climates within the site. The nature and composition of low level and canopy green infrastructure also creates a variety of thermal micro climates on site.

Consideration of the seasonal variation and biodiversity of Gadigal Country is incorporated where key summer solarised areas are shaded around the south of the site while winter spaces are wind protected and sunny on the north of site. These micro climates are enhanced by local physiological cooling stations, where seated areas are enhanced with earth tube ventilation. To the west along the wetland edges localised misters for evaporative cooling on extreme days especially along the exposed promenade. More shading has been introduced along this edge provides opportunity to go beyond the site boundary with

sea grass reseeded and reef style elements in the aquatic zone.

A circular approach to materials and waste has been a key guiding principal of the design. Buildings will be clad with recycled steel plates from road way construction, pavers and landscape elements will be based on natural materials, gravels and aggregates. Where appropriate the design is proposing new reconstitute ceramic based materials such as the Green Ceramic technologies developed by UNSW using 100% recycled materials. These will be developed together for specific locations based on micro climate modeling. Exposed materials and finishes may include nano particles that alter emissivity in order to reflect and radiate energy to maintain targeted comfort levels.

This approach delivers on Barangaroo with whole systems thinking and climate positive commitments by respecting the fundamentals of natural biospheric cycles and associated cultural paradigms attached in developing a framework that regenerates the ecological and cultural value of the land through involvement and continual improvement making the landscape becomes a resilient and adaptable location. This enables the site to be a place of intentionally designed systems to meet the needs of the whole, a co-evolution of nature and Country first and human systems interacting and adapting within.

Vegetation

Vegetation selection has been developed with the aim to create a thriving and diverse park ecosystem. Species have been selected based on their suitability and adaptability to the park climate, soil conditions (i.e. depth) and ability to support non-human kin (native wildlife). To establish the vegetation, soil will be created or built up from the capping



Landscape Establishment

layer to proposed site levels. Consideration has been made for local park levels to ensure proposed tree planting has adequate soil volume noting the ‘capping’ layer will be required to mitigate contamination concerns.

Trees are proposed to be installed as advanced stock (a pre-grow contract to be negotiated with nurseries at the commencement of the project). These trees will be robust, hardy and suited to site conditions.

An irrigation system is proposed for use primarily during establishment with reduced requirement as the landscape matures. Regular monitoring and maintenance including pruning, fertilising and pest control will be conducted to promote healthy plant growth and achieve long term sustainability.

Soil, Geo-technical, and Remediation

Expected ground conditions within Harbour Park footprint generally comprise existing asphalt concrete hardstand overlying uncontrolled fill, marine sediments and residual soils. Sandstone bedrock is variable (typically 20m to 30m depth) falling from Barangaroo Avenue to the shoreline in cliff steps.

The site has been used as a port (formerly over water), developed with pier and finger wharfs 1900 through 1970s), a gasworks facility, and land reclamation works resulting in hardstand for shipping containers and as a cargo lay down area.

Given the site history, it is clear the ground has experienced stresses associated with industrial (shipping) and construction of major infrastructure (Barangaroo Station and Tunnels), and initial investigations indicate the site will support the proposed design solution and proposed lightweight structures.

The design takes a general approach to keep all works above the existing RL 2.2 with a revised base level of RL 3.5, enabling a min 1.3m depth “fill zone” that will both mitigate potential requirements relating to contamination but also aid in facilitating the sustainable approach to development. All art and building components are proposed to accommodate raft or slab footings above the existing levels with no piers, and new services incorporated above RL2.2. However, on-going risk will remain through potential interaction between existing contaminated ground conditions and:

- Water play, and water features (waterproofing, tanks, reticulation etc)
- Ponds, WSUD, and ground water movement (drainage infrastructure is kept above RL2.2)
- Available soil volume for trees, and potential for penetration of tree roots as they mature into existing contaminated soil
- Risk of destabilisation and/or movement to existing ground conditions due to accumulative weight from new material brought onto site, which may also have potential impact to the existing sea wall

Fixtures, Furniture and Landscape Elements

Additional geotechnical, contamination and remediation investigations beyond the information supplied by INSW will determine the extent of intervention required. Identified likely solutions include application of a new capping layer in place of the existing asphalt surface, and application of localised tank / barrier systems applied where water features and/or ground water movement needs to be controlled below existing RL 2.2, although it is envisaged this would occur in isolated areas only.

If a full capping layer is applied, some excavation may be required and additional drainage will be required as the overall park design will act similar to a “podium landscape”. Clean, imported fill will be used as the basis for raising the ground plane, and topsoil for planting use will be integrated with biospheric and regenerative principles for the project, ensuring the ground can sustain the park as a sustainable, living place

Park Furniture

We acknowledge the suite of furniture and public domain elements that exist within the public domain area. We see the importance in ensuring continuity across the precinct for legibility and identity purposes.

Furniture elements along Barangaroo Avenue should continue the character established within Barangaroo South. Similarly, adjacent to Wulugul Walk's the furniture selection should ensure consistency with the established design.

Within the park, however, we see the importance in establishing a park palette of furniture that are distinctly of the place and will be not only integrated with the design, but provide high level of amenity for park users.

Way finding

Way finding within the Harbour Park should be consistent with the Barangaroo Precinct design.

Materials

Materials selection has consciously considered a connection to Country and how hardscape materials can enhance the park design and narrative. Materials from Country should be sourced rather than seeking imported alternatives. Materials selection must also support the notion of regeneration and sustainability. Where possible materials are to be recycled, re-purposed or have a neutral carbon footprint. Permeable surfaces will be promoted over hardscape. Materials selection must mitigate the urban heat island effect across this site.

At the park interface with Barangaroo Avenue, it is proposed that the park hardscape material (stone paving) extends into the street area to promote the pedestrian nature of this place and increase the prominence of the park in this area.

At key park entry points from Wulugul Walk the park materials will project to create a threshold experience.



Environmental Considerations

The design response takes into consideration the seasonal wind climate mapped for the site, Figure 1 and Figure 2, provides protection from the stronger cooling winds from the west quadrant during winter, and allows the cooling summer sea breezes from the north-east during summer. Significant vegetation along the western and southern boundaries of the site aim to mitigate the impact of winds from the west during the cooler months of the year, and acceleration of flow around the Crown development for winds from the south-west. Land mounding and high canopy trees to the northern end of the events space allows for the cooling winds from the north-east to permeate the site.

The permanent structures and gathering spaces are located remote from the cross-streets through Barangaroo Central to avoid channeled wind flow affecting the more sedentary areas by keeping the stronger wind zones to transient activities.

There is a conflict between the desired primary site access path (north-east to south-west) and the unsafe strong winds accelerating around the north-west corner of the existing casino site. The establishment of vegetation, land form and trees surrounding the main axis offer protection from, and disruption to colder wind patterns, as well as aural connection from wind movement through Casuarina plantings, and offer protection to the broader site. In addition, maintaining broader openings at the northern end of the site encourages cooler air movement through the site during warmer months, reducing urban heat island effects as shown in Figure 3.

Acknowledging the potential for wind tunneling between the site and nearby road avenues within adjacent developments, site buildings have been located outside

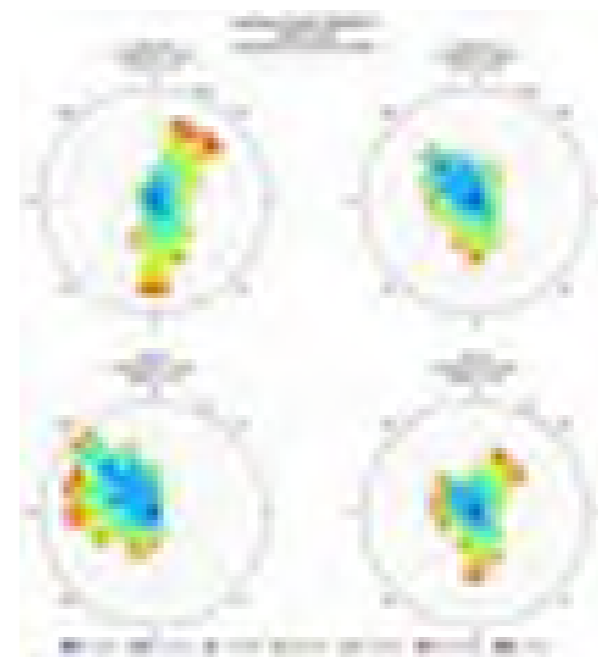


Figure 26. Seasonal Wind Roses

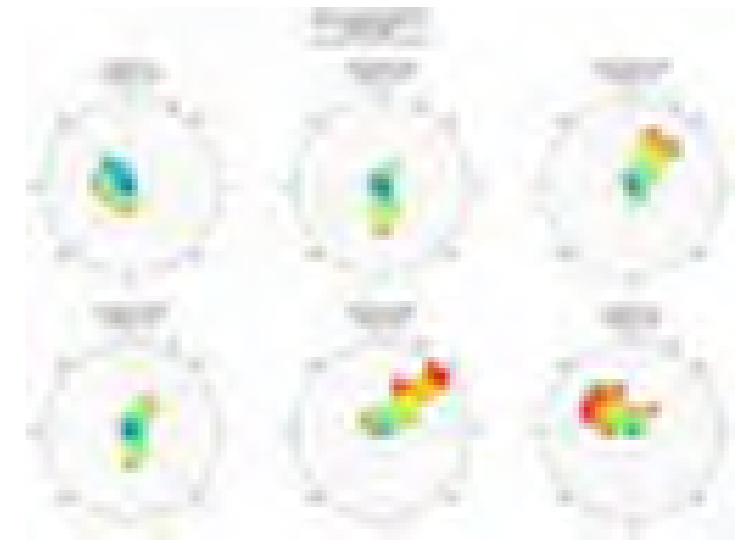


Figure 27. Temperature Wind Roses

of these locations, ensuring gather spaces for the café and retail area are comparatively protected. The inclusion of trees with high canopies in and around the site access locations further aims to mitigate potential wind tunneling effects

Solar Access and Thermal Comfort

The design response features different biomes for different conditions creating shaded areas for summer and protected sunny spaces in winter, incorporating a

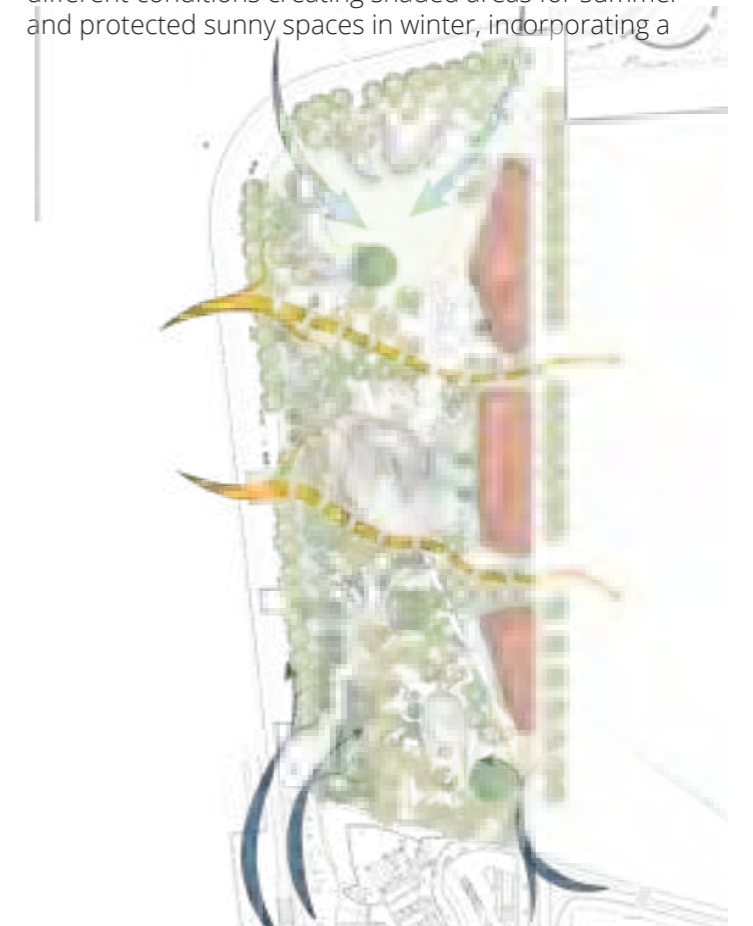


Figure 28. Wind Patternation across site

Water Management

canopy coverage (vegetation and structure) exceeding 60% of the site. Combined with a focus on permeable surface and cooling pavements, the proposed layout positions the park to withstand increasing summer temperatures and minimise urban heat island impacts thereby increasing pedestrian comfort.

Gather spaces are located away from the southern corners of site to address both wind and solar considerations. This positioning increases the opportunity for active spaces and commercial activities that are shaded in summer and have access to the sun in winter, encouraging year-round use.

Acoustics

Due to the height and proximity of surrounding receivers, noise attenuation from shielding will be limited, resulting in potential noise and time limits being imposed (depending on the event details & time of year). Construction impacts, particularly noisy excavation works or vibration intensive works, may affect surrounding receivers.

Noise shielding or containing elements, seamlessly integrated into the design through the landscape, architectural, and artistic features will mitigate these impacts, maximising the allowable activity and event noise levels while minimising noise spill to the surrounding sensitive receivers. Realistic noise management strategies will also be considered as part of the operational management measures, including consideration of times and event duration, and options for event approval permits on a rolling schedule or case-by-case basis in line with the site's Consent Conditions.



Figure 29. Water Management Strategy

Complementary with the landscape design, Water Sensitive Urban Design (WSUD) elements will be located throughout the park to provide water storage and reuse, passive and active irrigation opportunities, water quality treatment, urban cooling and climate change resilience, ecological habitat, and aesthetic and recreational appeal. Relevant WSUD examples include landscaped bio retention swales, tree pits, rain gardens, native reed planting within ponds, permeable footpath pavements and permeable drainage. As well as being low maintenance and drought resistant, native plant species will be nitrogen-fixing to help meet water quality treatment objectives.

Potable Water & Recycled Water

The proposed potable water and sewer systems are minimal and will be concealed within the landscape. Where appropriate and supported by standards, treated storm water and recycled water sourced from within the park and imported from the wider precinct will be utilised for parkland irrigation, toilet flushing within the proposed buildings, and water body supply. Rainwater will be captured from local buildings and will be supplemented by non-potable water mains for toilet flushing. Each water source will be matched with its most appropriate use and with the highest reuse potential.

To minimise energy and water use, amenity fixtures will provide cold water only, however localised electric points of hot water units will be provided to accessible amenities. Water efficient appliances will also be used to improve water resilience. Potable water and dump points will be

provided to select areas within the park for facilitating food and event operators, mitigating the requirement to bump in/out additional services.

Permanent water bodies will be designed to meet potable water standards including isolation from groundwater and geotechnical impacts, facilitating opportunity for water play, activation and tactile integration with the overriding design principles. Water bodies may require topping-up during hotter, drier periods, (recycled where possible) however shading and pond plants will be provided to limit the effects of evaporation.

Drainage and any required permanent sewers will be located near to trunk mains to utilise gravity connections and limit the dependence on the sewer pump station and supporting ground works. The sullage point for portable toilets during temporary events will also be located near to sewer trunk mains to provide gravity drainage, minimising costs and increasing the flexibility for events. Trade waste treatment will be required for cafes if greasy food will be prepared. This equipment will be located close to the café buildings.

Existing Storm water Infrastructure

The park drainage and subsoil drainage systems will be discharged into existing drainage pipelines and harbour outfalls. These will connect at existing inspection pit locations to make good use of these existing assets and embed circular economy principles.

Flooding

Existing overland flow paths across the park will be maintained in collaboration with the landscape architect so that overland flow from major rainfall events can continue to pass from Barangaroo Central, through the park and into the harbour without creating impacts upstream or to adjacent properties.

Park levels have also been designed to direct frequent rainfall event flows into localised water bodies positioned at low points across the site. The water bodies will provide water quality treatment and detention/retention of collected runoff for reuse as irrigation for native, perennial wetland species. The drainage system will work in tandem with proposed park levels to manage runoff from minor storms up to the 5% Annual Exceedance Probability (AEP) (20 year) event to minimise over topping of overland flows over the promenade.

To increase resilience of the drainage system to sea level rise, the design will maximise overland conveyance (e.g. swales) before dropping into a piped drainage system. This will have the added benefit of keeping the pipe network as shallow as practicable, to minimise penetration of the existing asphalt layer. Existing outfalls will be fixed with non-return valves to prevent backing-up into the drainage system during high harbour water level events (ocean storm events and rare high tides events).

Electrical

The design response has identified a number of considerations that have been incorporated into the lighting design process. The lighting design response across the site incorporates:

- Safety: Brighter lights don't have a direct correlation with a sense of safety. There can be dramatic differences in how we experience our cities during day and night, and the lighting strategy will maximise perceptions of safety whilst using the minimum amount of light through a considered approach;
- Tapered brightness: The design will minimise light pollution and excessive / inappropriate use of artificial light,

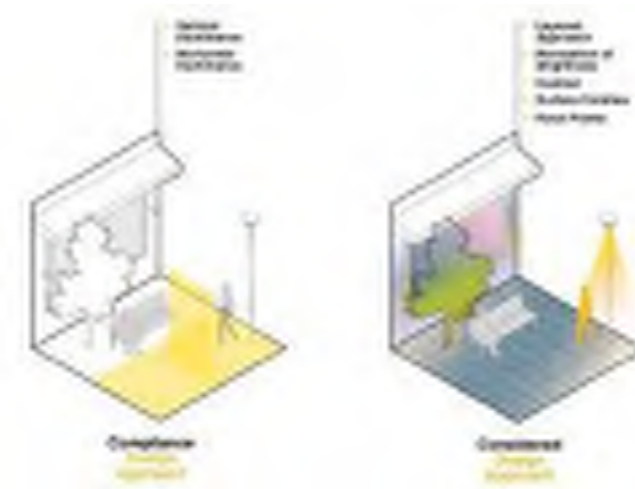


Figure 30. Lighting vertical geometry

allowing the less populated areas to be less bright whilst remaining safe;

- Targeted light & vertical geometry: illuminating surfaces, features and people in a considered way and seeking to maximise low level light sources to avoid unnecessary spill;
- Selective wavelengths including warm white and amber light sources to which flora and fauna react less;
- Automatic controls: light sensors, movement detectors, dimming and colour control all combined to be more sensitive to the local ecology.

The park is planned as carbon positive. Solar powered technology allows light sources to use “closed” solar systems with photovoltaic cells (PVs) mounted locally to either charge batteries to energise lighting at night or to feed power back into the electrical grid. Building roof top solar generation estimates 100,000kwh, providing for the energy distribution within a larger system that meets the needs for the site, building energy use, site lighting and water pumping. On site battery storage and a demand management micro grid system will be integrated facilitating grid resilience, with potential to fully disconnect as technology evolves over time. Power generation back to the grid may also be used to offset park running costs and/ or provide community benefit through commercial terms. All lighting products proposed should be capable of being dismantled to base components to be up or down cycled, or, as a last resort, re-cycled and returned to the materials reservoir.



Catering for event mode (large or small) the Park will seek to minimise its environmental impact by providing power for event users, thus avoiding the necessity for substantial on-site power generation. At minimum 2x 400amp, 3 phase power supply is provided to the main events space (for lighting, sound and video) to be permanently located near the stage area. Additional powerlock supplies will be provided throughout the park accommodating smaller events and functions (food trucks / stalls, smaller events etc as identified)

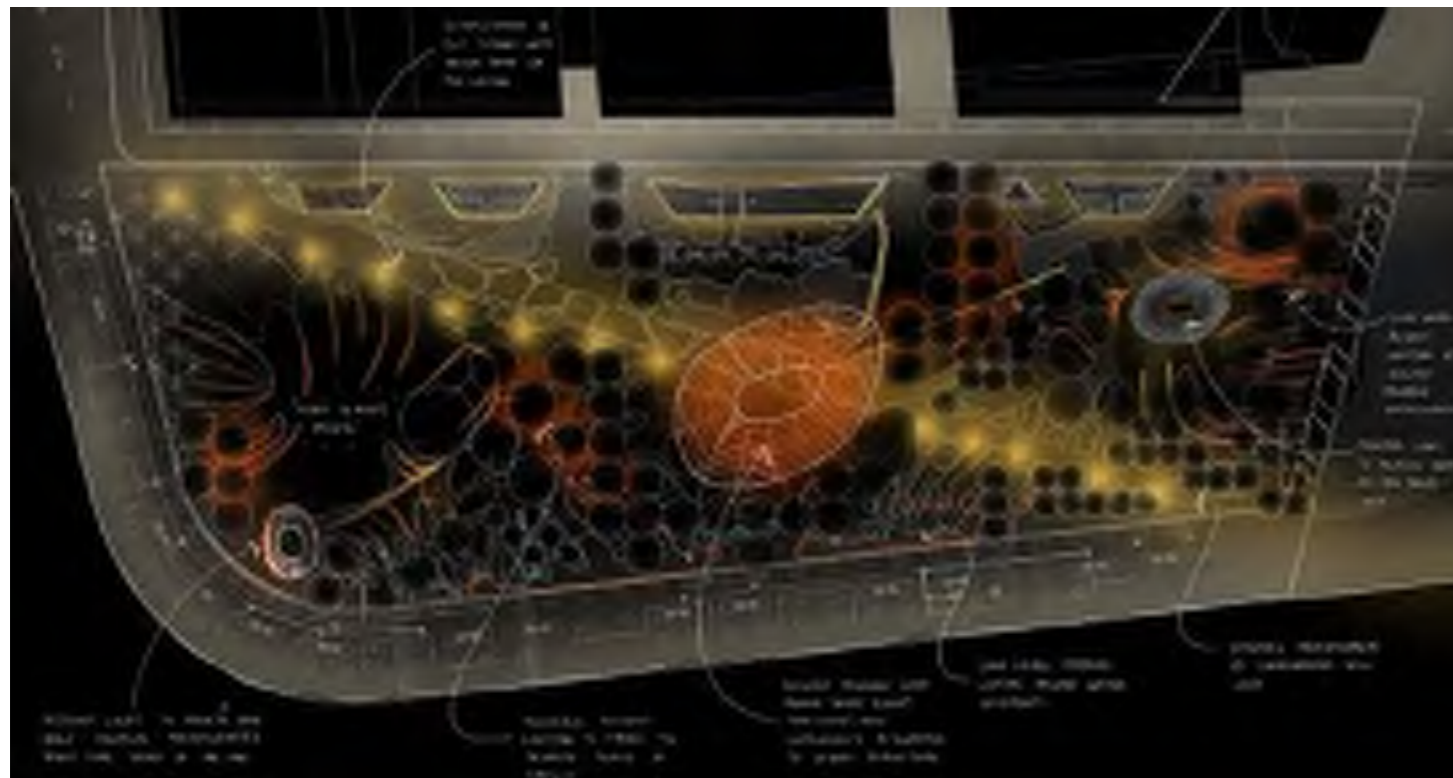


Figure 31. Indicative lighting strategy

Operational Requirements

Parking, (un)loading and servicing

Barangaroo Ave acts as the main service road when it will be pedestrianised, buildings are located to enable servicing via Barangaroo Avenue and the integration with the drop-off and pick-up points occurring on Barton St and at Crown Tower further development of this approach will be required with future integration with adjacent developments not yet approved,

To mitigate these unknowns, the design response proposes the use of Streets C and D (in a proposed one-way loop) for entry and exist for event servicing. The design response also proposes connectivity between the Park with the Sydney Metro Barangaroo Station as well as connectivity with the pedestrian network.

Waste and Recycling

Infrastructure NSW have a goal of net zero waste outcome for the Barangaroo Precinct, aiming to divert more than 80% operation waste and 90% construction waste from landfill. All aspects of Harbour Park will be incorporated within a waste management plan and system to allow for source separation of recyclable materials and organics, allocation of equipment for storage, sorting, consolidation and collection of materials, and support reduction of litter and waste impacts. Site construction and demolition waste management will include consideration of waste avoidance, minimisation and recovery measures to reduce construction phase material being sent to landfill.

Temporary and permanent waste management solutions incorporated within site buildings will be subject to the same performance criteria and achieve the same waste management and recycling outcomes. Passive signage and visual identification (bin sensors as example) that supports waste minimisation and resource recovery goals through function elements such as smart bins, will educate visitors to Harbour Park about the sustainability objectives for the precinct. These systems will be designed with an First Nations audio visual artist to make the experience site relevant and fun in order to enable change.

The design will consider operational management measures and spatial allocation for delivery and storage of bins during events, and additional activities to improve waste minimisation and improve recycling, such as on-site processing of food organic waste and implementation of procurement policies, such as bans of single use plastic or plastic packaging. Opportunities to engage with the park asset owner for management recycling activities such as reuse of plant material will be embedded into operational response.

Maintenance

A maintenance plan will be prepared in the next phase of the project to ensure all landscape, art elements and architecture are up kept as needed. Regular inspections of all park elements will identify maintenance needs. A maintenance contract will be negotiated with appropriate contractors following completion of the project.

Cultural burning, developed by First Nations Australians to enhance the health of the land and its people. Is to be utilised as a commonplace maintenance method. It is not a spectacle, rather a Country derived method of regeneration and management.

Storage

Park storage is consolidated within the architectural elements within the site.

Safety and security

The design response recognises that the design needs to provide a security design that can appropriately cater to the needs of large crowds while remaining contextually appropriate to quieter periods of use and the general intention of the site. It also recognises that the design requirements and intents are complicated and evolving, and that security and safety considerations need to harmonise with these in an ongoing manner throughout the design, lest they be excluded.

The design response creates an environment that not only exhibits features of safety, but also implicitly feels safe to users. The response highlights inclusive design elements which also positively contribute to safety and security, and provides support for casual users, event management, law enforcement, etc. while promoting the site as a safe destination and through-link in the heart of Sydney.

Inclusion of CCTV and telecommunications (wifi) can be discreetly integrated within the broader utilities infrastructure. Extent of the CCTV coverage would be developed directly in response to detailed design pedestrian modelling and risk review of landscape and vegetation approach, taking into consideration the varying CPTED risks as vegetation grows and establishes. Coverage of wifi could be accommodated where directly associated with site buildings and event locations. A more holistic distribution would be assessed in consultation with INSW requirements, taking into consideration the extent of site vegetation and potential integration with other utility infrastructure.



5

VIABILITY REPORT

1 BUDGET VIABILITY

Team 035 – Akin – recognises that budget compliance is a key priority for Infrastructure NSW.

We confirm that our Submission achieves the delivery of the project within budget, in accordance with Clause 4. We acknowledge that the budget for public art and the budget for all other aspects of the project are separate and must not be reallocated.

We also acknowledge that the budget for the delivery of Harbour Park excludes professional fees.

And that the budget for public art includes all professional fees.

The artwork estimate (\$12.7m) is derived from both extensive design work shopping and also market research. The detailed breakdown included in attachment C includes cost data taken from market research and the rates used are taken from the high end of that market feedback. As such the project artwork is, in MBM opinion, deliverable at the pricing level stated in our submission. That said, it is acknowledged that the design is a work in progress in its early stages of evolution and naturally an element of cost control will be required in order to align budget with market pricing.

2 PLANNING REQUIREMENTS

Our tender submission recognises the prominence and significance of Harbour Park.

We appreciate that the site is zoned RE1 Public Recreation under State Environmental Planning Policy (Precincts—Eastern Harbour City) 2021 (Eastern Harbour SEPP). It will be important to have regard to the objectives of the zone for the project, as this is a statutory requirement for consent authority to consider for development in the Barangaroo Precinct. The park is a permissible use (under the definition of “recreation areas”) within the RE1 zone. The only environmental planning instruments that will apply to development on land within the site are Chapter 2 and Appendix 5 of the Eastern Harbour SEPP and all other State environmental planning policies.

We further realise that the design and delivery of the park will be subject to a future planning approval in the form of a State Significant Development (SSD) application, lodged to the Department of Planning and Environment. The Minister for Planning will be the consent authority.

The Architectus Planning team are currently working to INSW for statutory planning services for proposed Bank Street Park in Blackwattle Bay under a SSD application. We also completed statutory planning services for the recently constructed and opened Sydney Modern Project under a SSD application, which is similarly sited

in a well-loved park context near the harbour, being the Domain parkland. It was subject to an international design competition and our planners worked closely with our architects to successfully deliver this high-profile project.

Proposed Planning Manager/ EIS lead, Jane Fielding, has a landscape architecture background, as well as REAP certification, and is therefore well placed to deliver planning services for this important park.

Crown Resort Easement

We acknowledge that an easement exists along the southern most boundary line for Harbour Park to allow for building maintenance and access, as well as light and air, for Crown Resort.

We have allowed for a five-metre setback from the cadastral boundary as illustrated in Figure 17 of the Brief. We appreciate that the easement is to be kept clear and is not to include any furnishings or significant landscaping.



Figure 32. Site Plan illustrating interface with Crown Sydney

3 PROGRAMMATIC REQUIREMENTS OF THE DESIGN BRIEF

Our Team provides a program as part of the Stage Two Response Schedule (document 3.2, attachment G), demonstrating how we will meet key milestones.

We recognise that factors that contribute to the capacity of a given design to meet the program requirements include: material supply chains, the staging of construction works and early procurement of vegetation, as well as manufacturing complexity.

Post-competition our Team acknowledges that we will agree with Infrastructure NSW a detailed program to be included in the final executed Contract and Scope of Services.



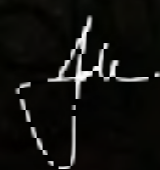
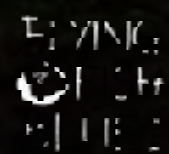
Figure 33. Photographs of Design Model

| STAGE | STAGE NAME | DURATION WEEKS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Total ~126 wks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------|---|----------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----------------|----|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | | 53 | 54 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Competition Design Refinement & Concept Design | 7 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | INSW review | 2 | | | | | | | | 1 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Design Development 50% | 7 | | | | | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | INSW review | 4 | | | | | | | | | | | | | | | | | 1 | 2 | 3 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Design Development 80% | 5 | | | | | | | | | | | | | | | | | | | | | 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | INSW review | 4 | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 2 | 3 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Design Development 100% | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 2 | 3 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | Draft State Significant Development Application package (Commences immediately after 50% is approved) | 10 | | | | | | | | | | | | | | | | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | INSW review | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Final State Significant Development Application package | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 2 | 3 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Draft Tender Documentation | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 2 | 3 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | INSW review | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 2 | 3 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Final Tender Documentation | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | Construction Documentation | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | Construction and Post Construction Stage Services | 72 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



YERRABINGIN

architectus



ARUP

HARBOUR PARK

Barangaroo Harbour Park is a place within Country for all Australians who are invited to move with Country, to experience and acknowledge our collective past, present and future.

A public domain that catalyses bio-cultural regeneration of the landscape within Country, that will share and receive knowledge and practice. This place brings reimagines Art and Landscape as a social, ecological and cultural mycelia that supports a system of emotion, action, and experience, creating a realisation of reciprocity at a civic scale never seen before.



SITE APPRECIATION

A HISTORY OF TRANSFORMATION



Pre 1788 shoreline



1907 shoreline



1947 shoreline



2023 shoreline



VIEWS TO ME-MEL

NAWI COVE



NAWI COVE EDGE CONDITION



SANDSTONE COUNTRY



SUNSETS

LINE OF HISTORIC WHARVES BELOW. FILL AND CONTAMINATION UNKNOWN

TEMPORARY LANDSCAPE

LINE OF HISTORIC WHARVES BELOW. FILL AND CONTAMINATION UNKNOWN

FUTURE CENTRAL BARANGAROO RL35 HEIGHT LIMIT

EXISTING CELTIS AUSTRALIS TREES IN POOR CONDITION

RL15 HEIGHT LIMIT

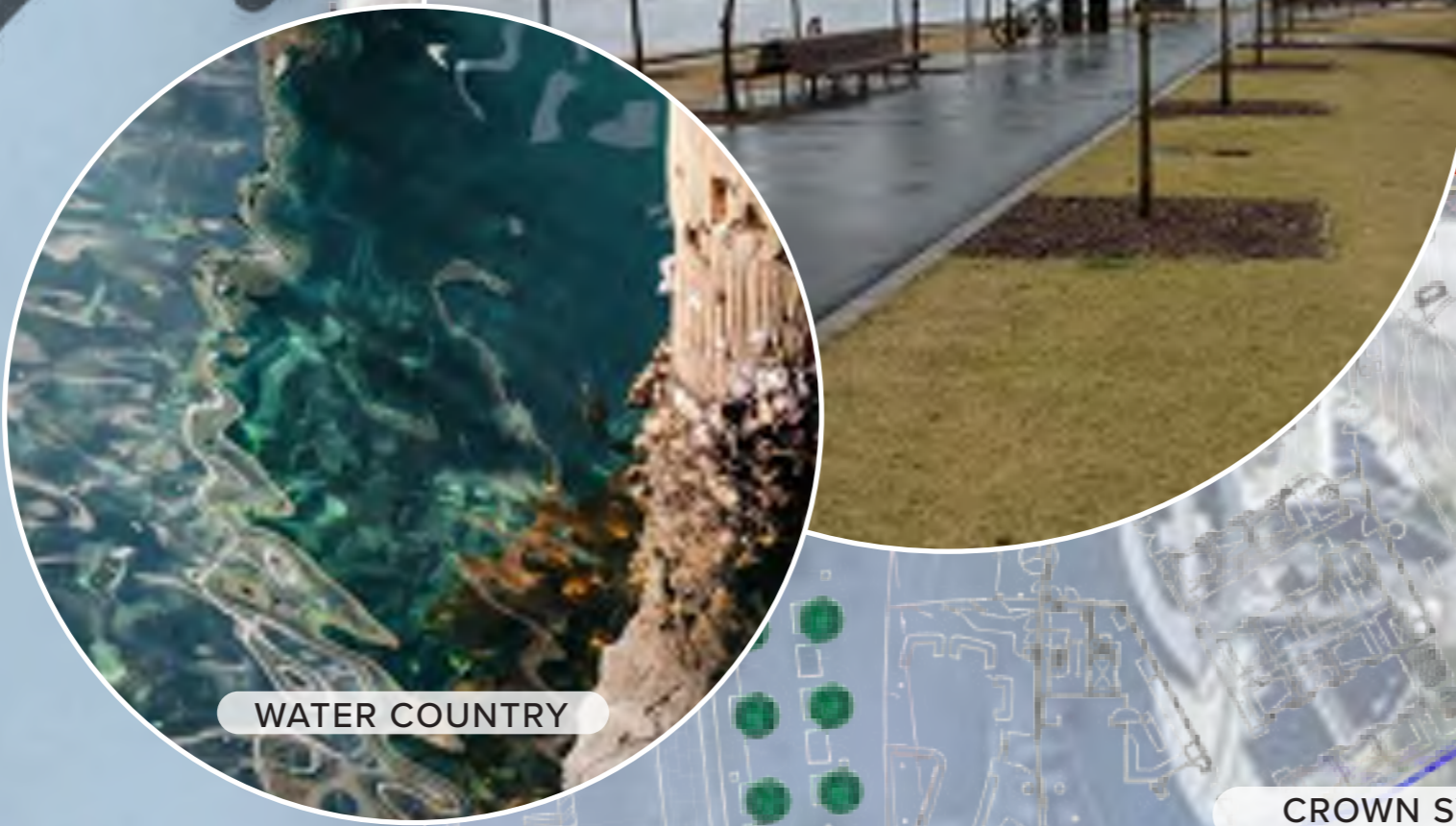
BARANGAROO AVENUE

HICKSON PARK CONNECTION

HICKSON PARK CONNECTION

LEGEND

- Asphalt surface capping to uncontrolled and contaminated fill
- Asphalt pathway
- Asphalt Road
- Decomposed granite pathway
- Brick paving banding
- Timber deck walkway
- Stone paving Blue Grey
- Temporary stone paving
- Public domain paving
- Grass lawn
- Existing Tree Planting
- Future Tree Planting
- Storm water drain below



WATER COUNTRY

CROWN SYDNEY

BARTON STREET

HICKSON PARK



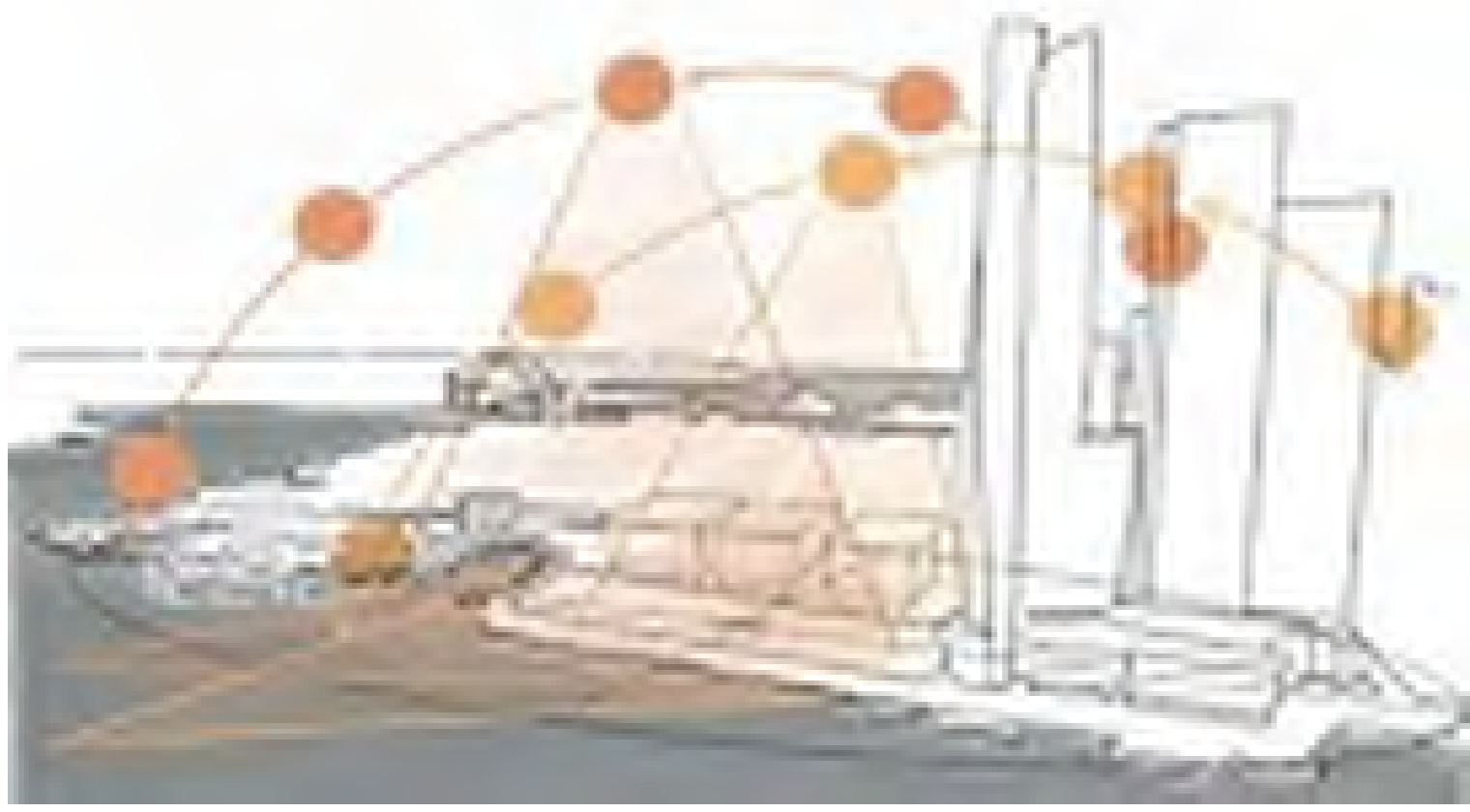
ANALYSIS AND CONTEXT

Our approach to this important project opportunity begins here ...

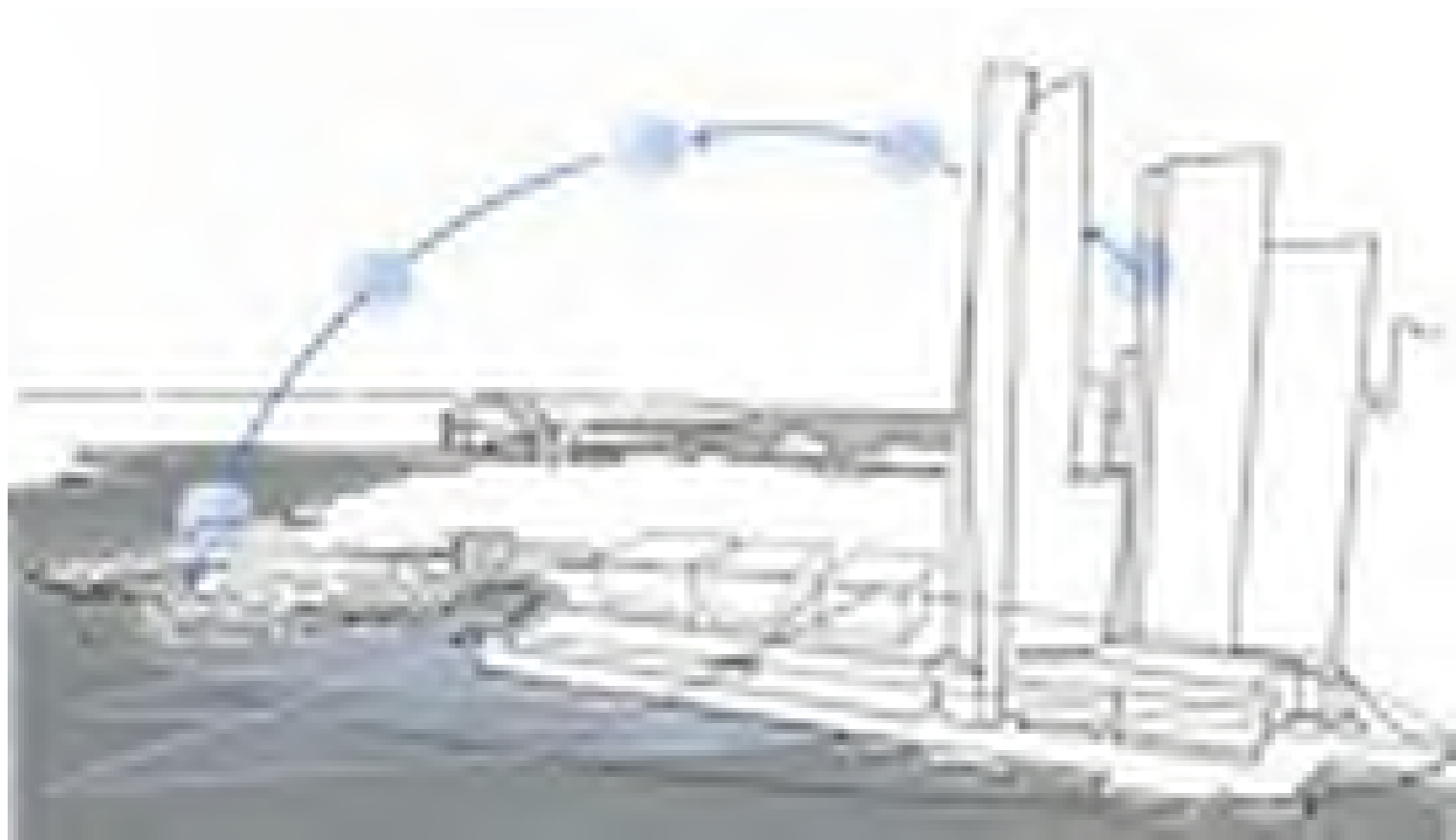
With a globally connected city that is positioned on an edge.

On an edge that is distinctly physical in nature. Within an urban setting that is on the edge of a continent, on the edge of an ocean, and on the edge of a unique and distinctive harbour-scape.

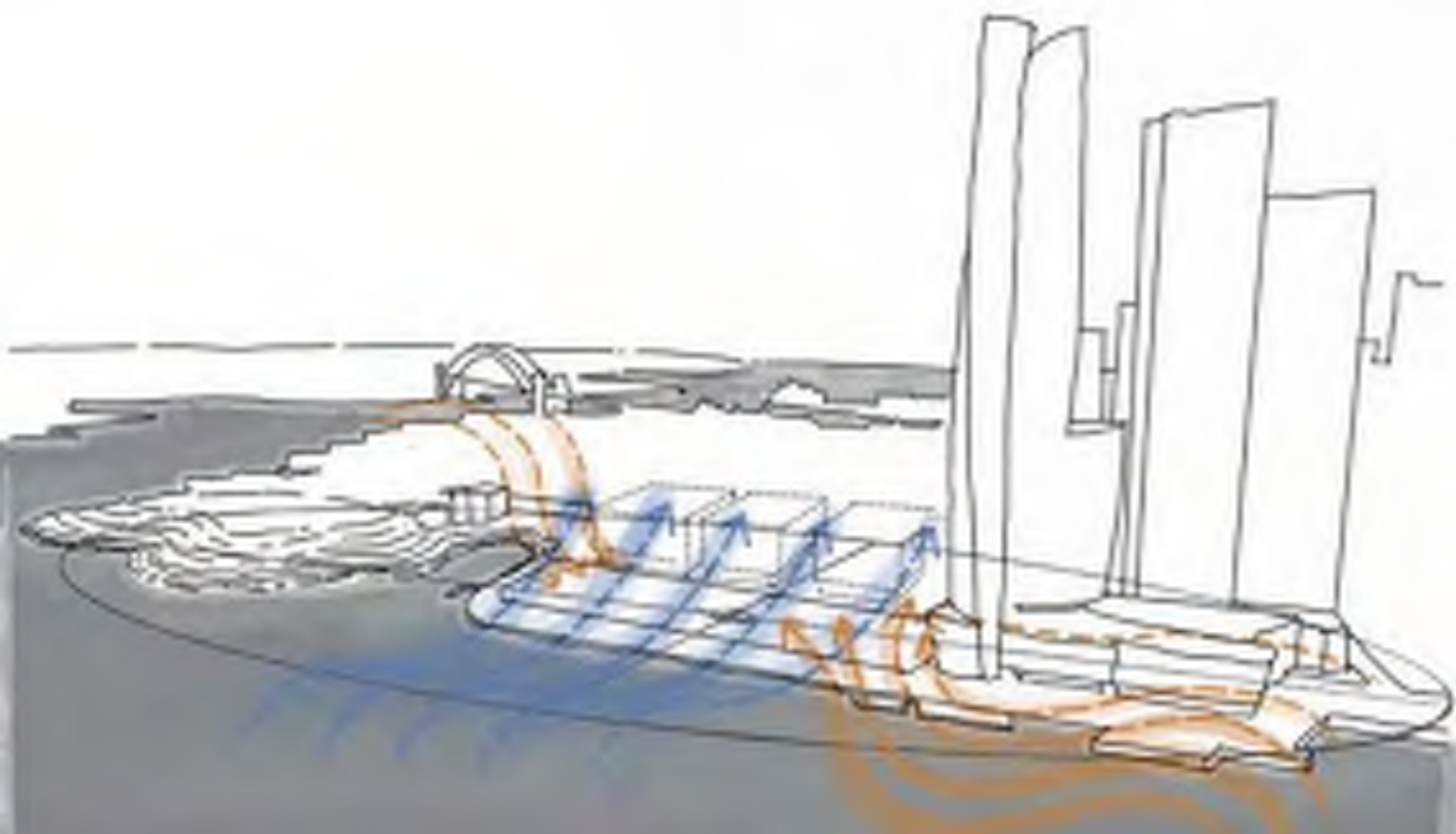
Barangaroo Harbour Park occupies an edge. On the physical edge of a remarkable deep-water harbour and a great maritime city. Yet it is also on a social edge within the context of a national culture that is in a state of transition.



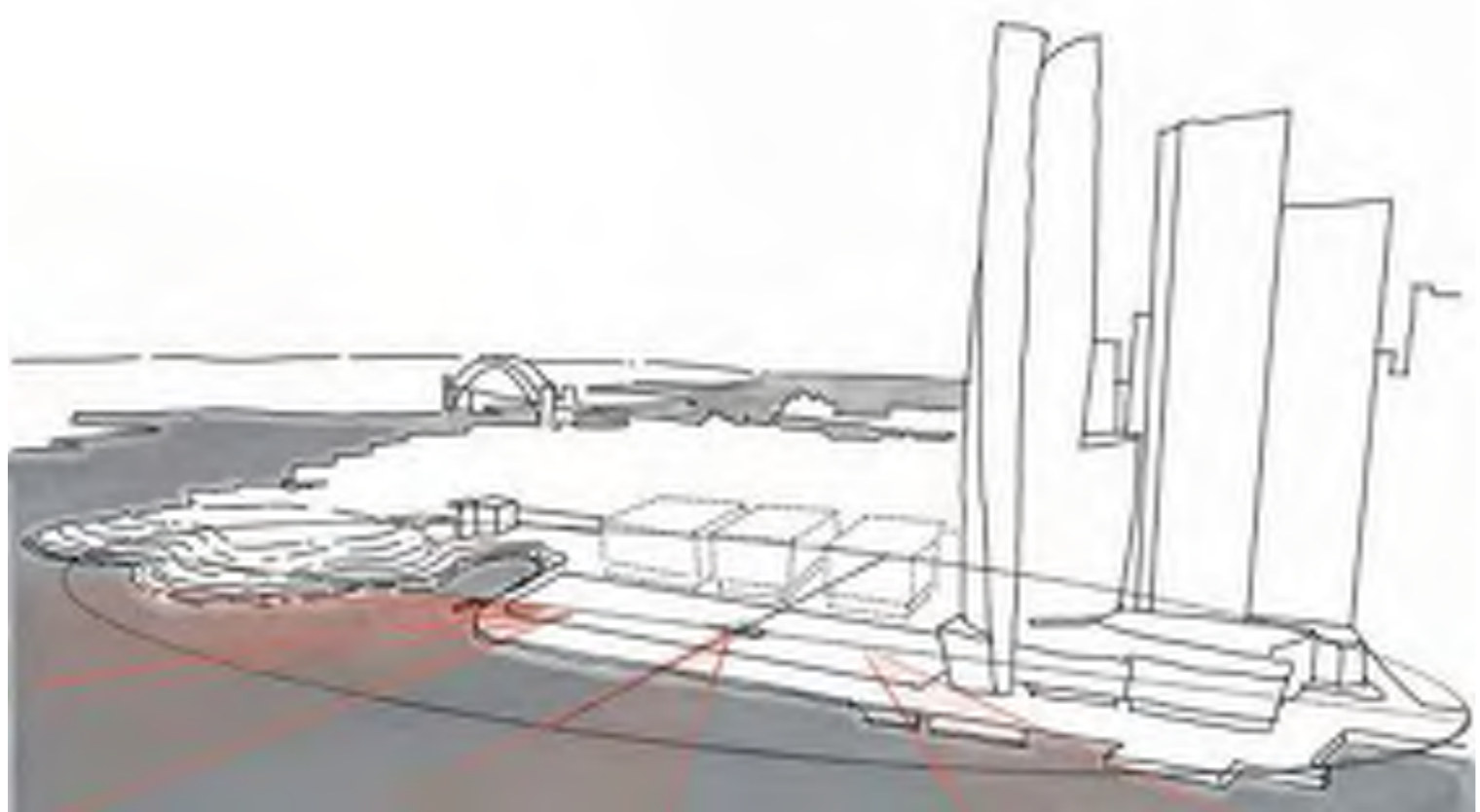
This place never sees a rising sun. It is a place of endless cyclical transition towards darkness. Through design we celebrate this cyclical passage from light to dark.



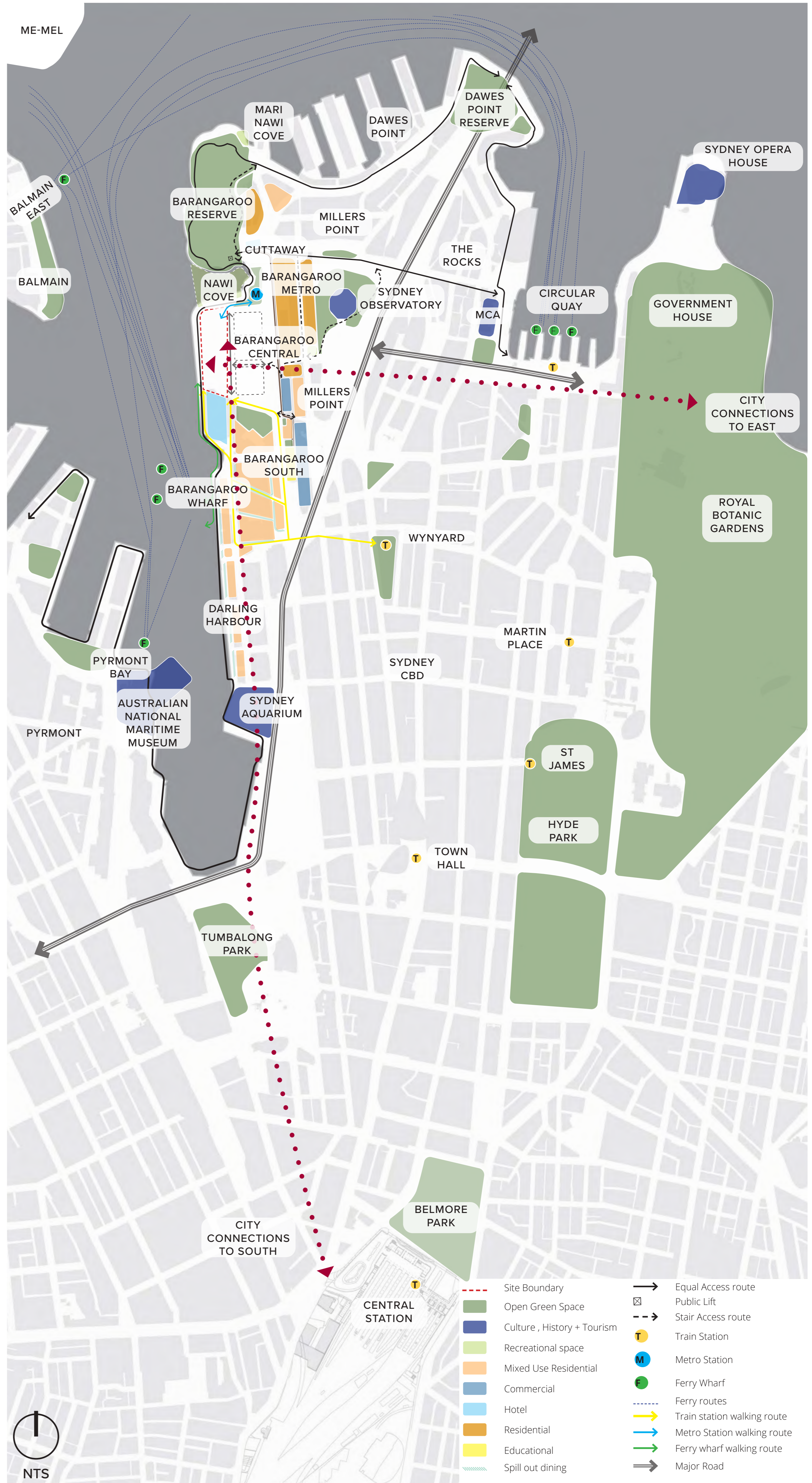
This darkness is lit by the moon and stars sharing stories and carrying knowledge of the surrounding environment.



The westerly wind whispers through the site animating invisible threads of air into aural experiences that breathe life into the experience of this unique place



Views from the site speaks to broader moments of history. Visual connections to Me-Mel provide deeper grounding in First Nations history and wider connections through Sydney Harbour.



DESIGN VISION AND APPROACH

The park will be a profound, globally recognised and iconic addition to the suite of Sydney's waterfront open space. It will show case First Nations design methodologies on a global scale to create a place that is rich in culture, deeply connected to Country and enduring in its ability to regenerate, grow and adapt to environmental and cultural shifts.

Harbour Park is borne from Country. Its form is sculpted by the wind, gathering places cooled by water and storytelling reflections of the sky. A place of refuge and protection. It is a place of strength, inspired by the fisher women of Eora and the fish that sustained the people, the kin that move through time and space a connector of all living entities.

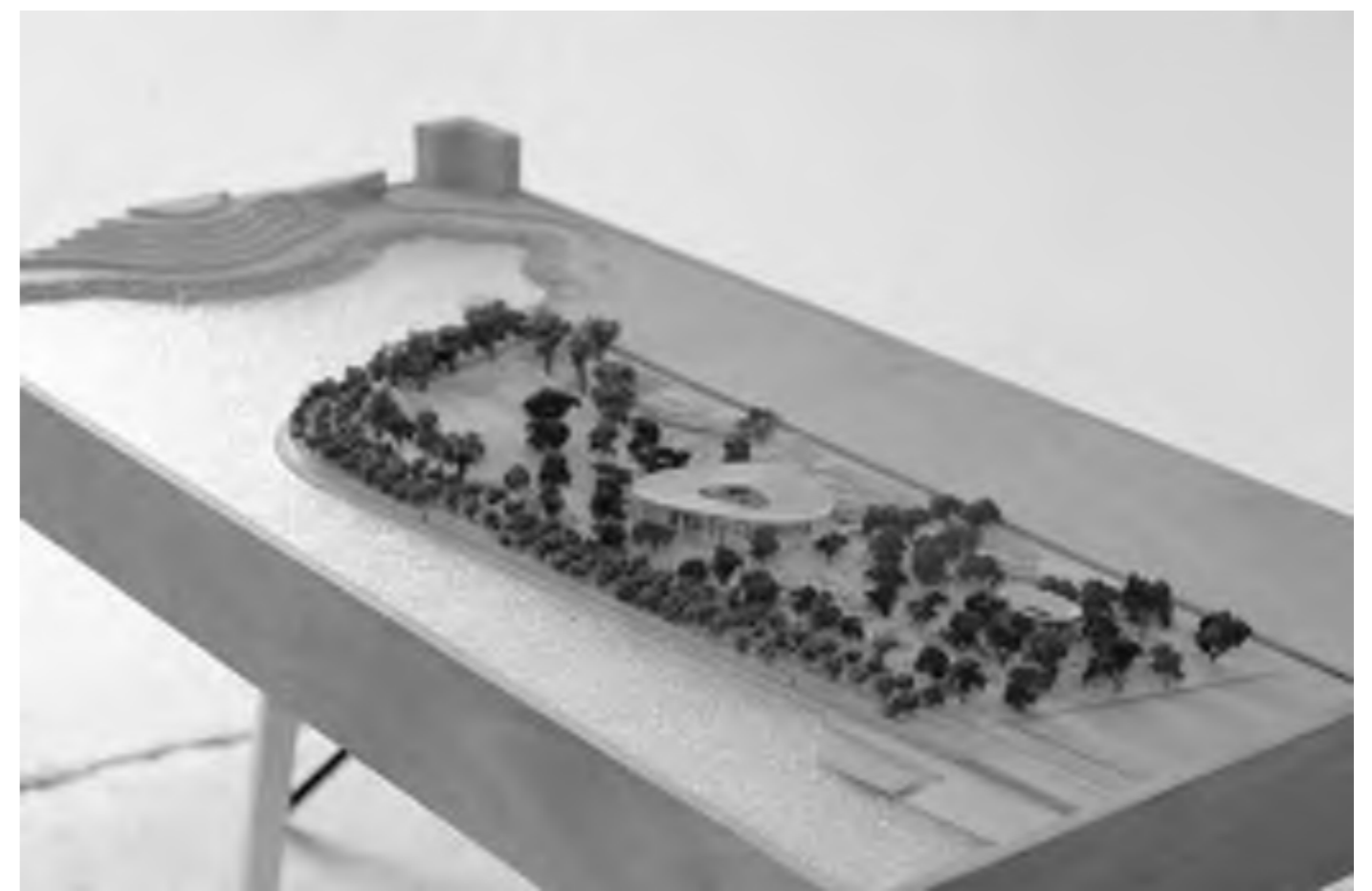
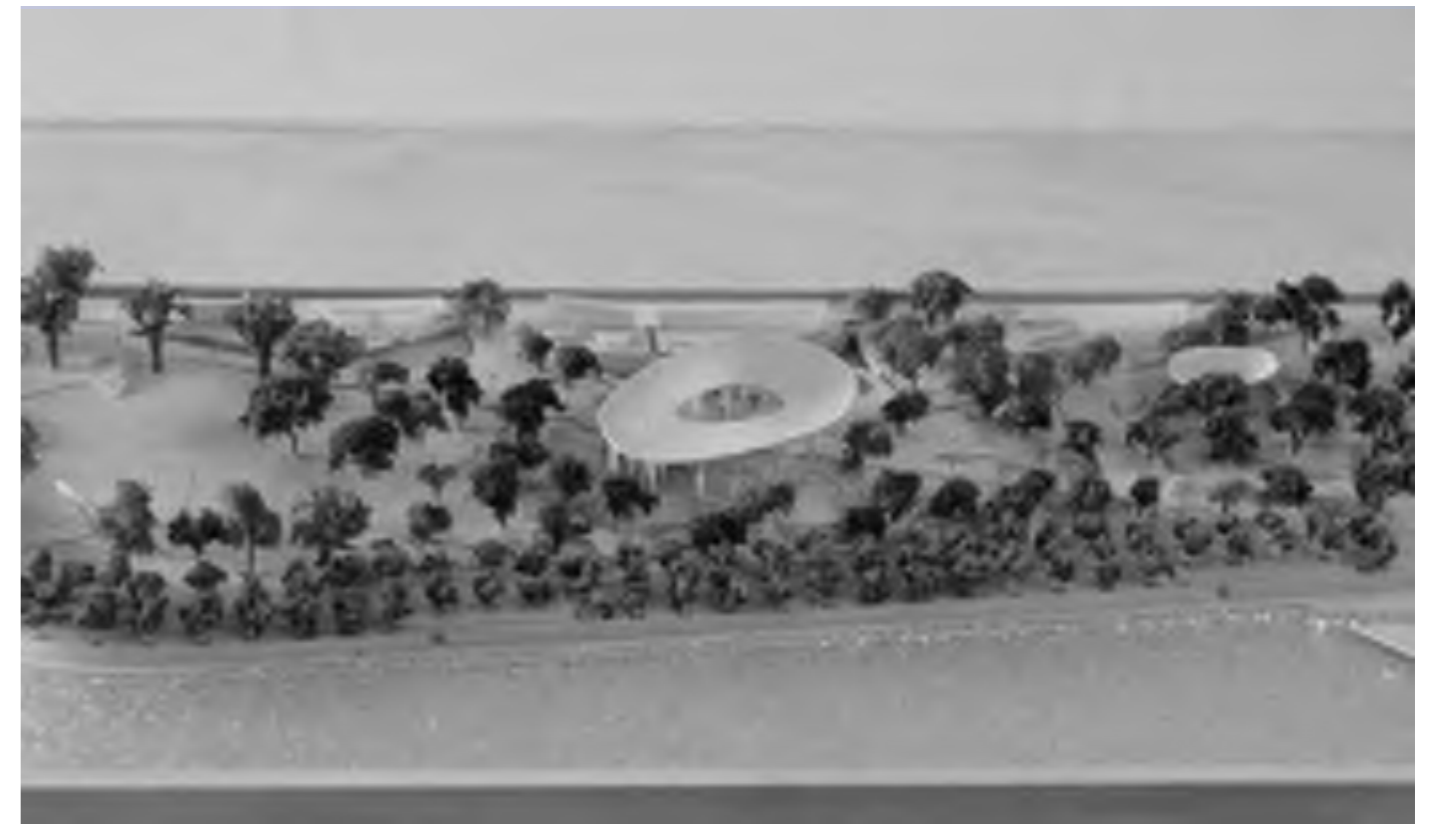
This is not a park, but instead is a place of celebration for an enduring culture. A sanctuary, for people and non human kin alike. A place that like the wind is timeless, yet acutely aware of deep time and a legacy that projects far into the future. The design we have created tells a story, of wind shaping Country, like a carving made in the sandstone foundations of Eora, it is the story of biosphere elements and Country, its people and the future. Art emerges from the park as depictions of Country. Where art and park are one.

Through Country-led design, this park holds a power greater than that envisaged by this proposition, It is a transition of great social significance towards national self-awareness, real recognition of our first Nations people's deep connections to Country, and our collective and binding potential for true cultural reciprocity.

One park - a vessel to be the keeper of millennia of stories and foundation for an eternity of new ones.



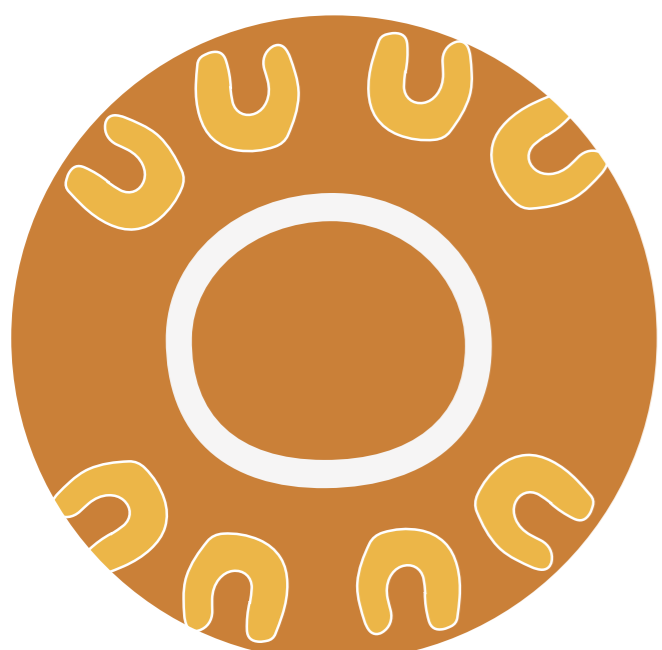
HARBOUR PARK - PHYSICAL MODEL



A place of celebration for an enduring culture. A sanctuary, for people and non human kin alike

One park - a vessel to be the keeper of millennia of stories and foundation for an eternity of new ones.

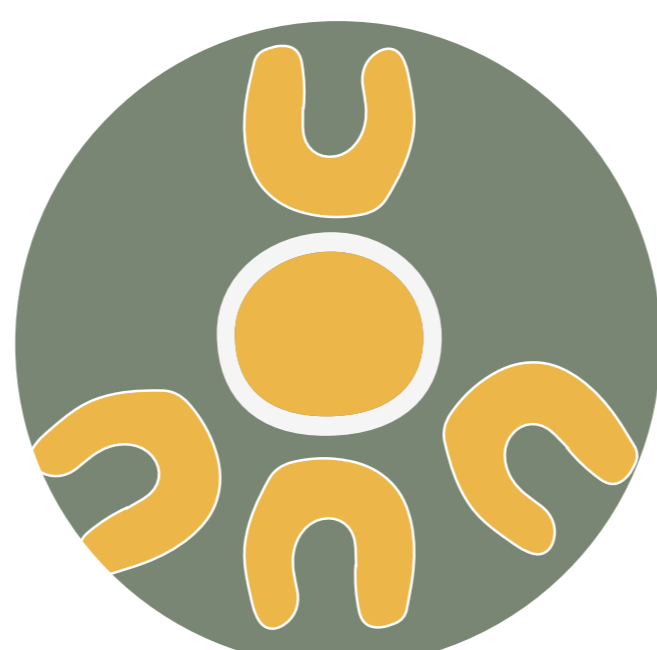
DESIGN PRINCIPLES



CONNECTED



REGENERATIVE



REFLECTIVE



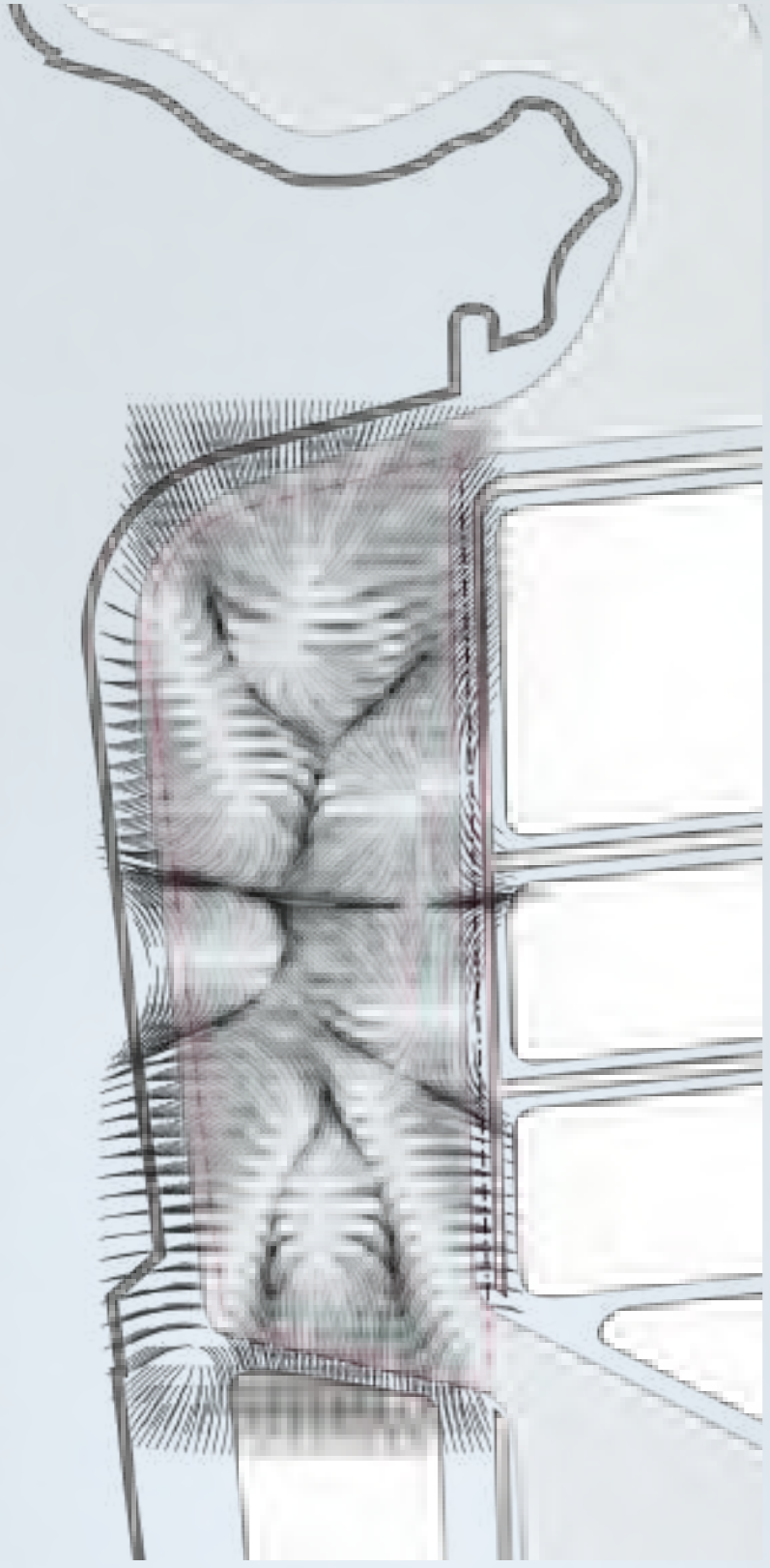
TIMELESS



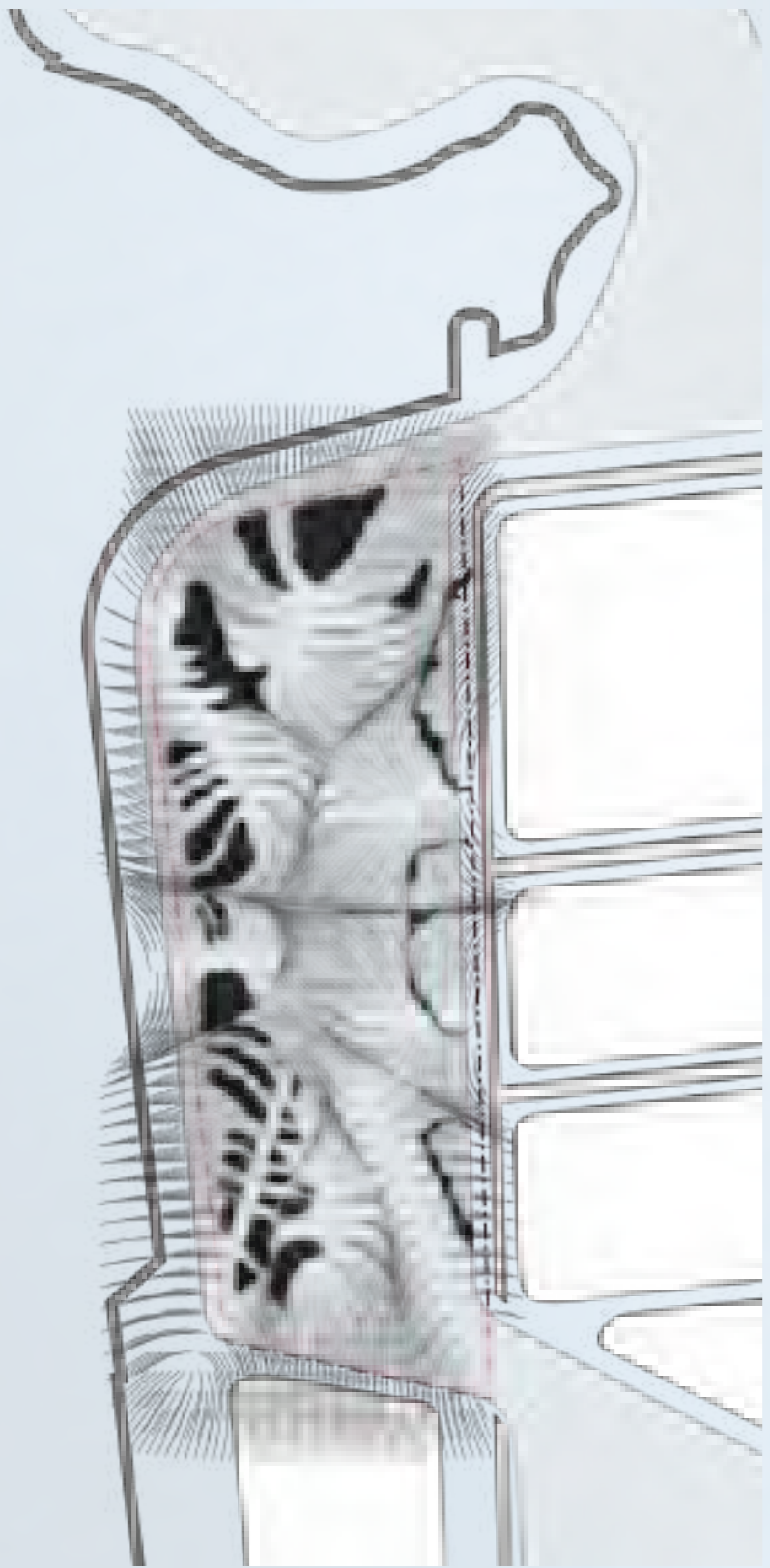
RECIPROCITY

SITE PLAN

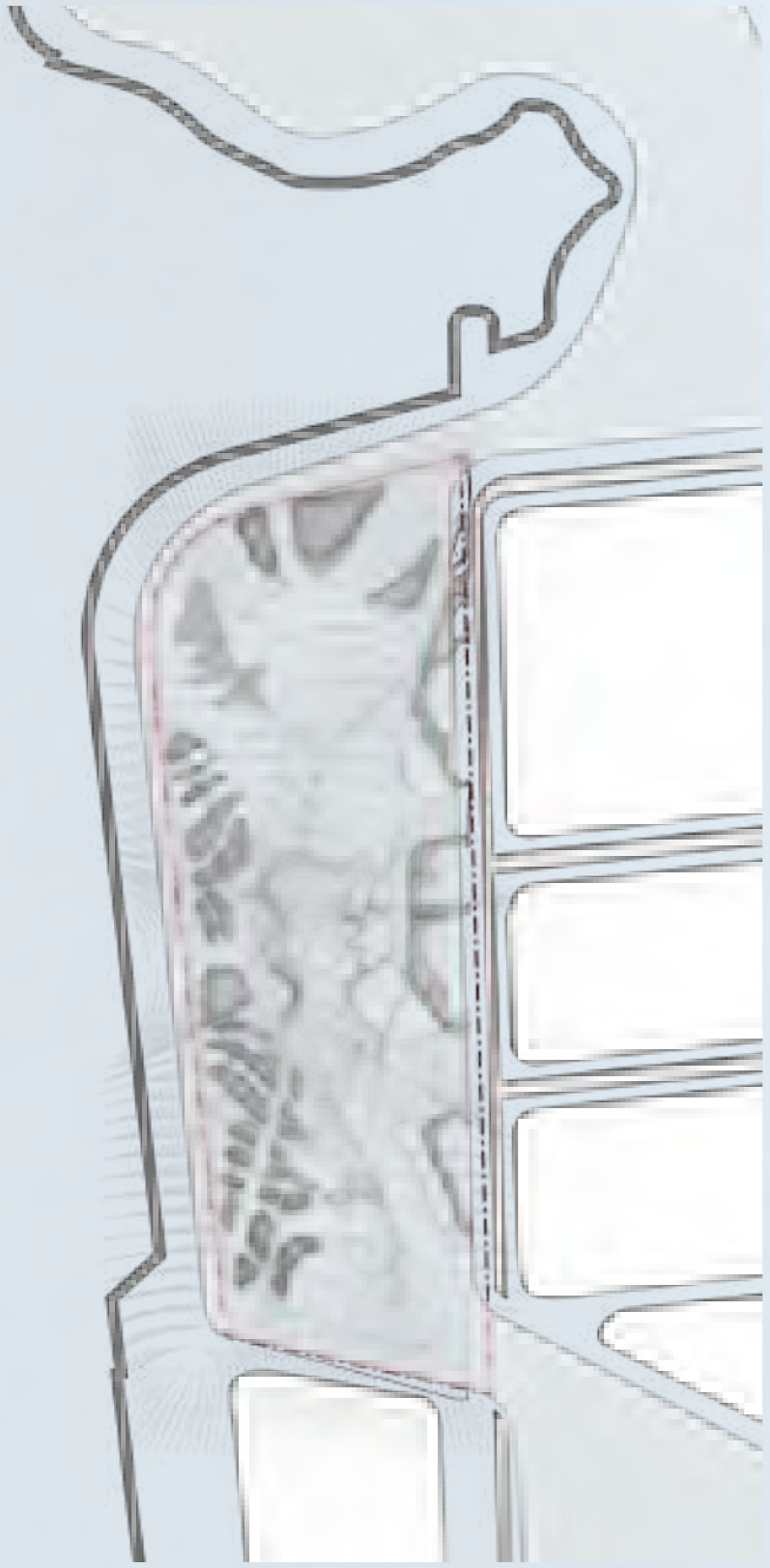
ESTABLISHING A LAND FORM



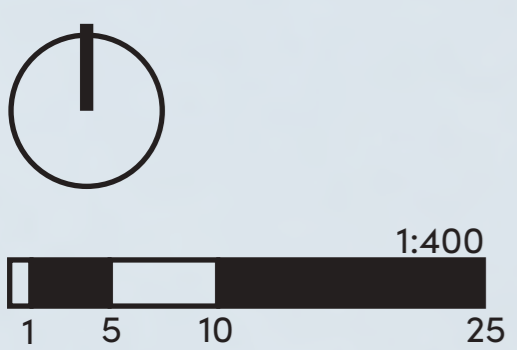
Winds sculpt the ground plane



Mounds are created as an armature and protection for the park



The park becomes a dynamic landform

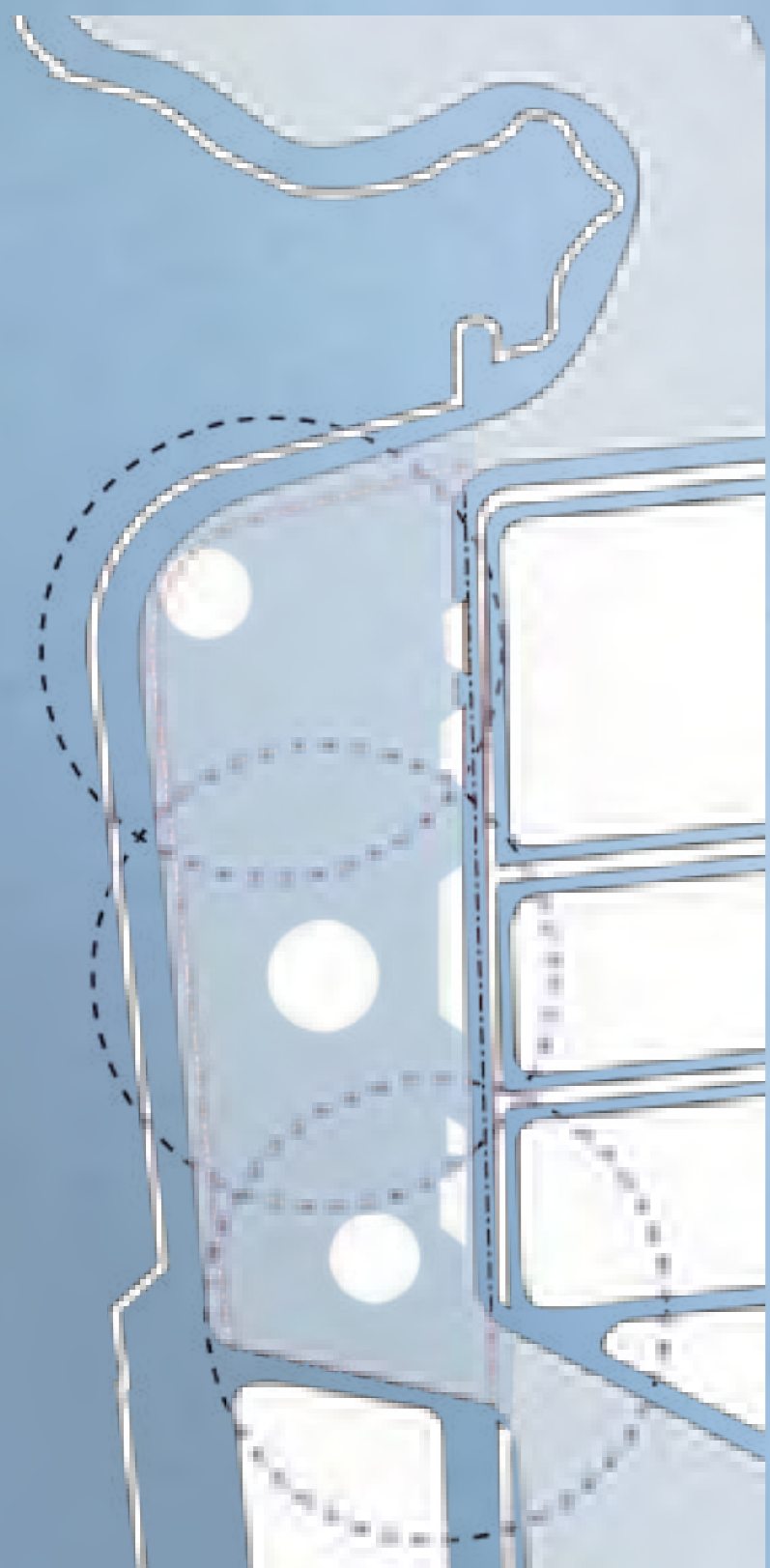


CONCEPT PLAN

PARK STRUCTURE



Circulation



Art anchors 3 park zones



Built form and water define the edge of the park

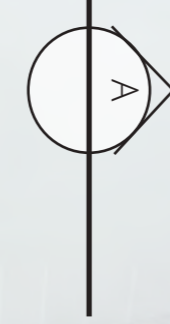
MISTING POOLS



1:400

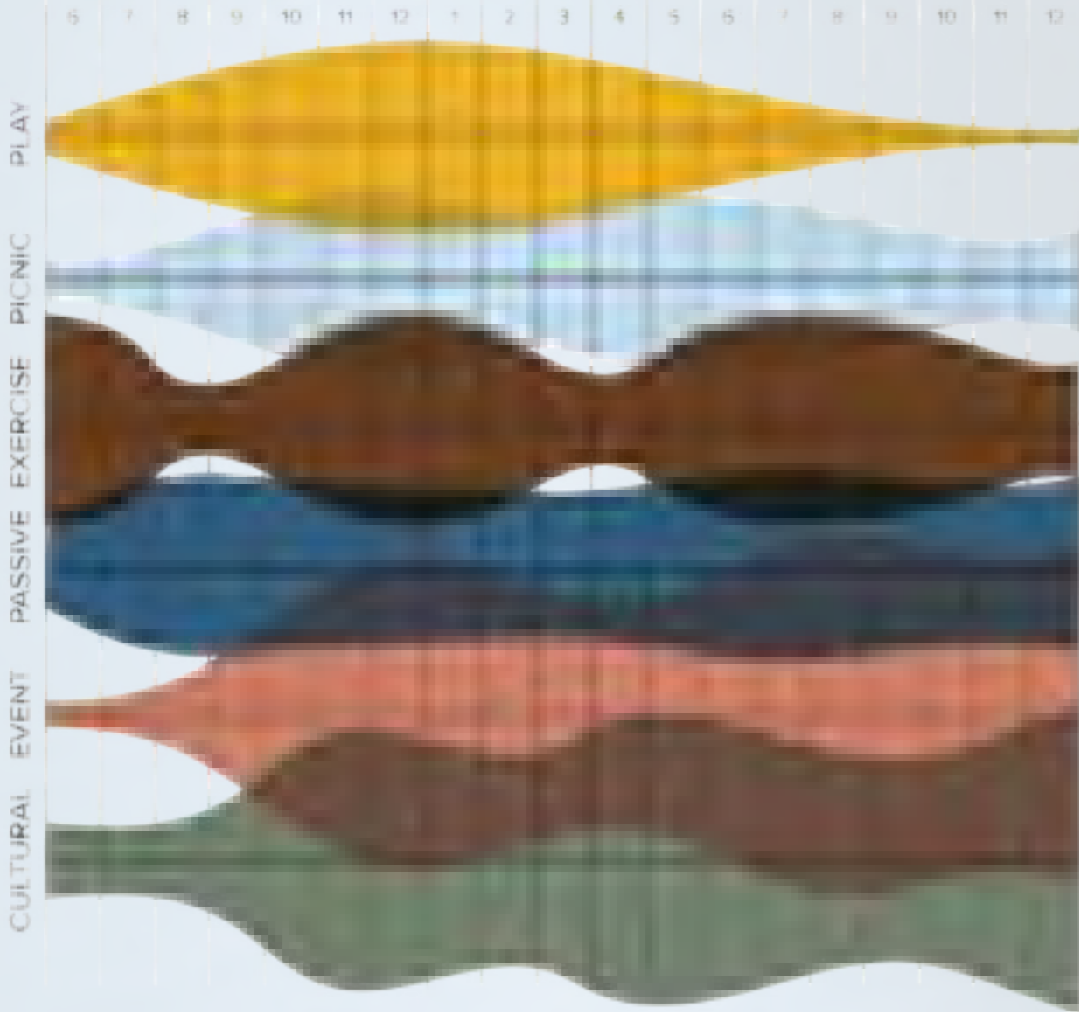
1 5 10 25

A PARK FOR EVENTS



"A DAY IN THE LIFE" - PARK ACTIVATION

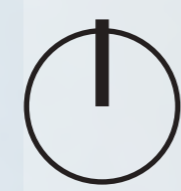
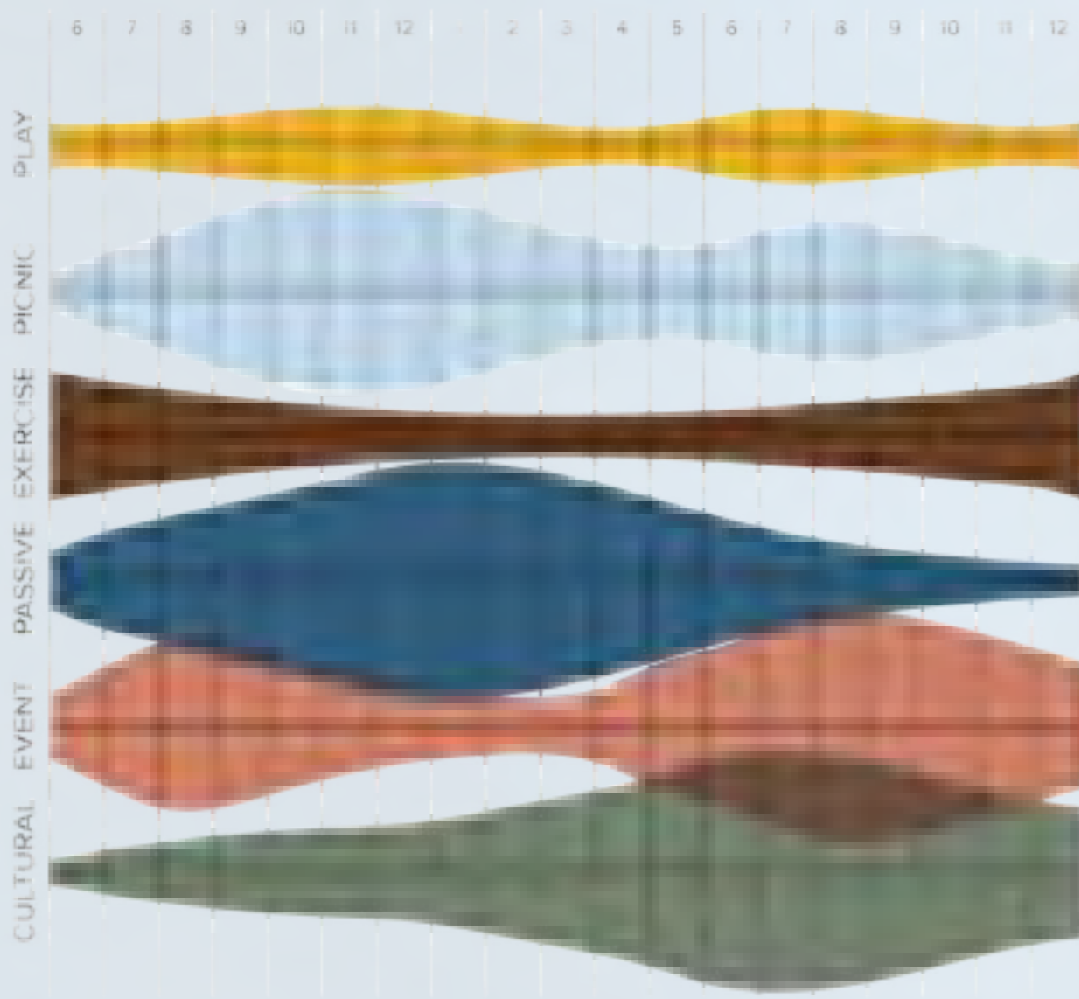
Larger capacity events can be held here throughout the year with Sydney Harbour, Me-Mel and the headland park as a backdrop. From key cultural events such as NAIDOC celebrations through to concerts, outdoor performances and the iconic Sydney Vivid, this space is dynamic in form ensuring it feels welcoming and active even when no event is taking place.



The art structure is grand in its form and a beacon for the park. It becomes a place of gathering in the spaces beneath and surrounding it. Located in proximity to the active play area, smaller events related to education, story telling and cultural workshops would be held in this area. Pop up markets and food trucks may be located in the active heart of the park.



Protected by vegetation, this zone holds opportunities to host a range or smaller events such as small performances, bush food and medicinal tours, weaving workshops and food markets.



NORTH SOUTH SECTION - NTS

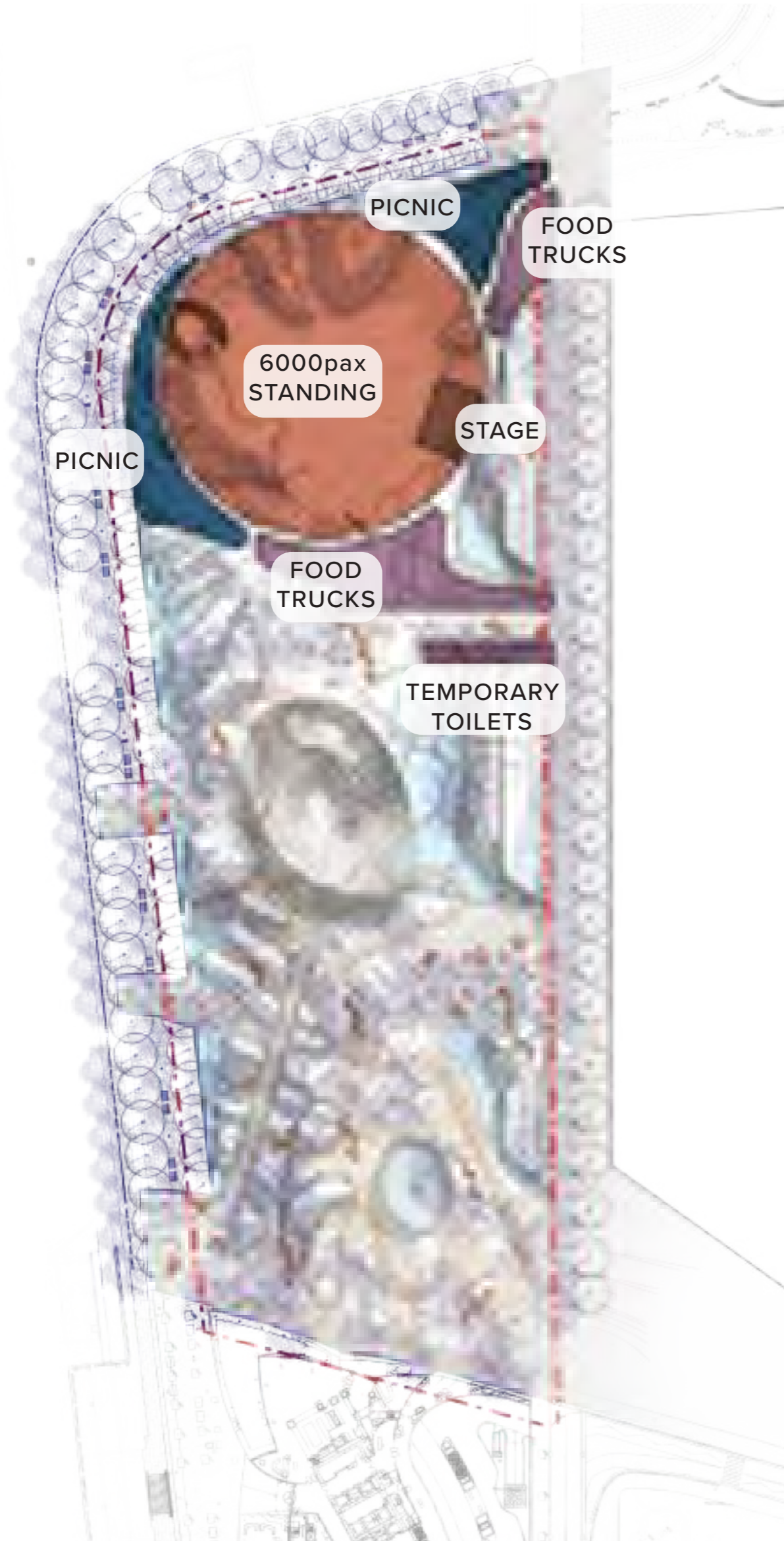


EVENT MODE OVERLAY

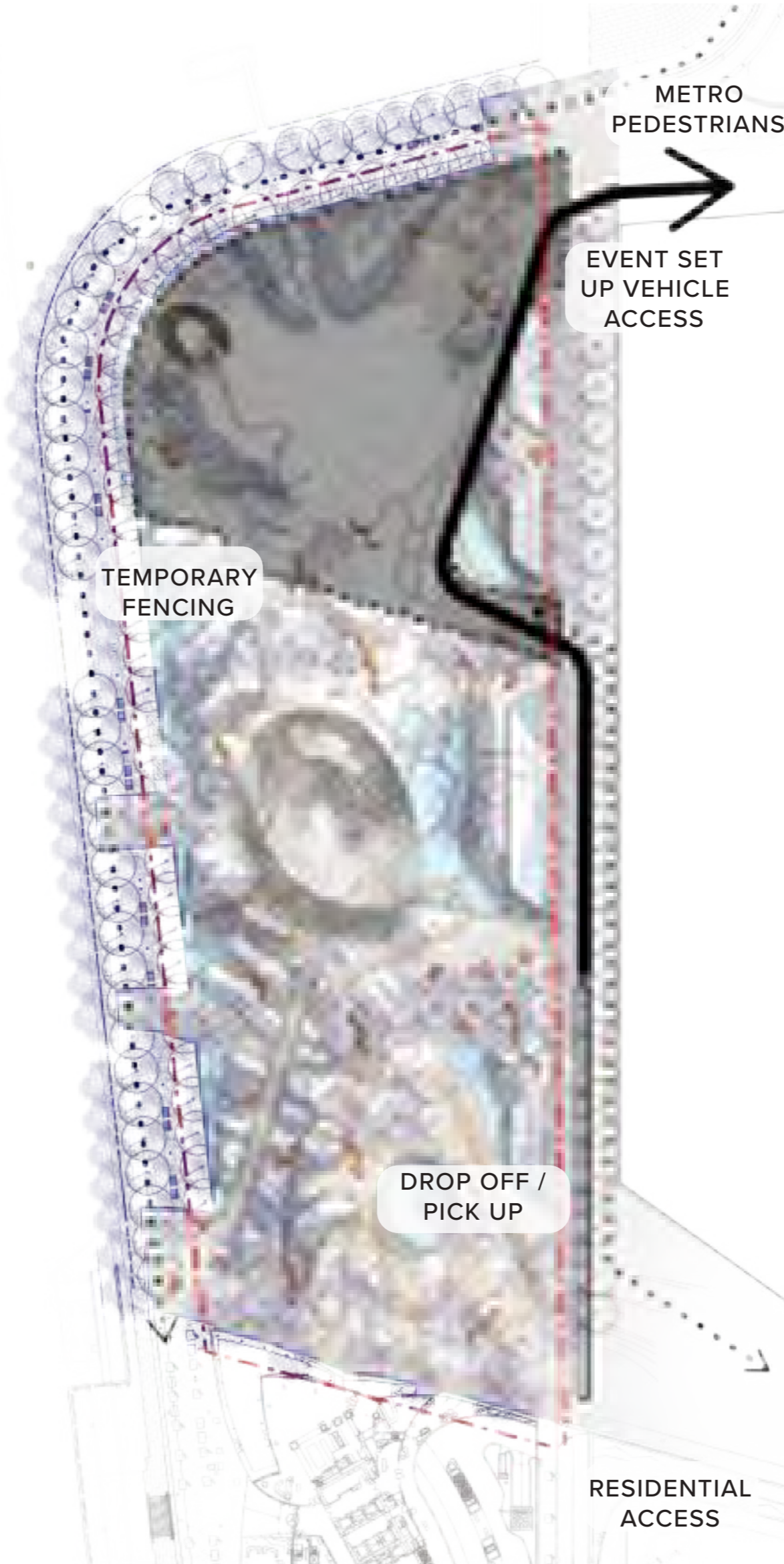
This design has focused on how to differentiate itself amongst the offering of event spaces in the local proximity. A consideration specifically for cultural ceremony and performance has been made within the event space and elsewhere throughout the park to ensure culturally safe spaces are provided for all and the local community can take ownership over the use of the park.

Designed as a celebratory space, the park can accommodate a range of activities throughout the public domain, with specific provision of an event lawn at the North of the site designed to accommodate a standing crowd of 6000 people while also providing space for smaller events to occur in parallel.

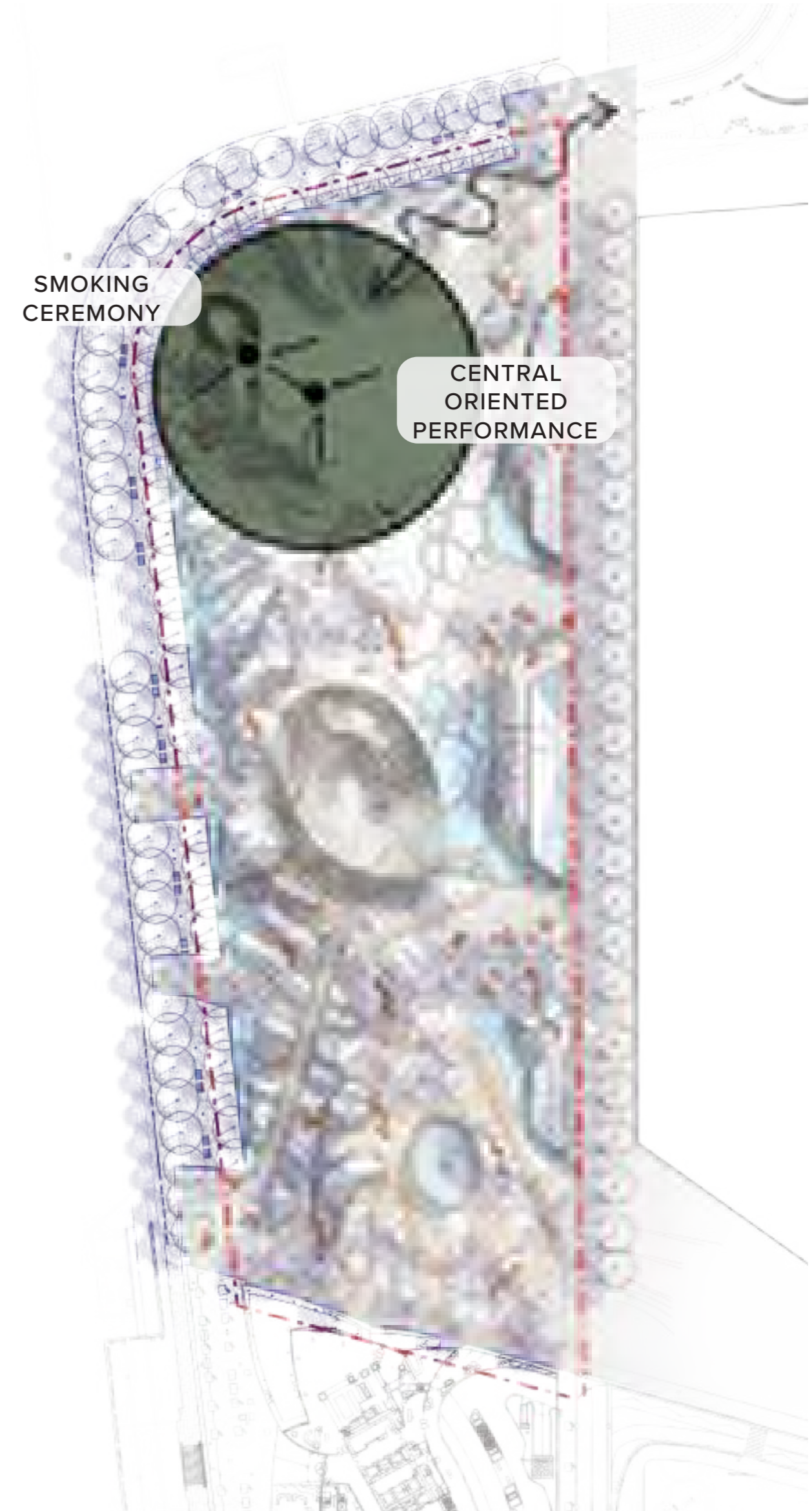
LARGE SCALE EVENTS



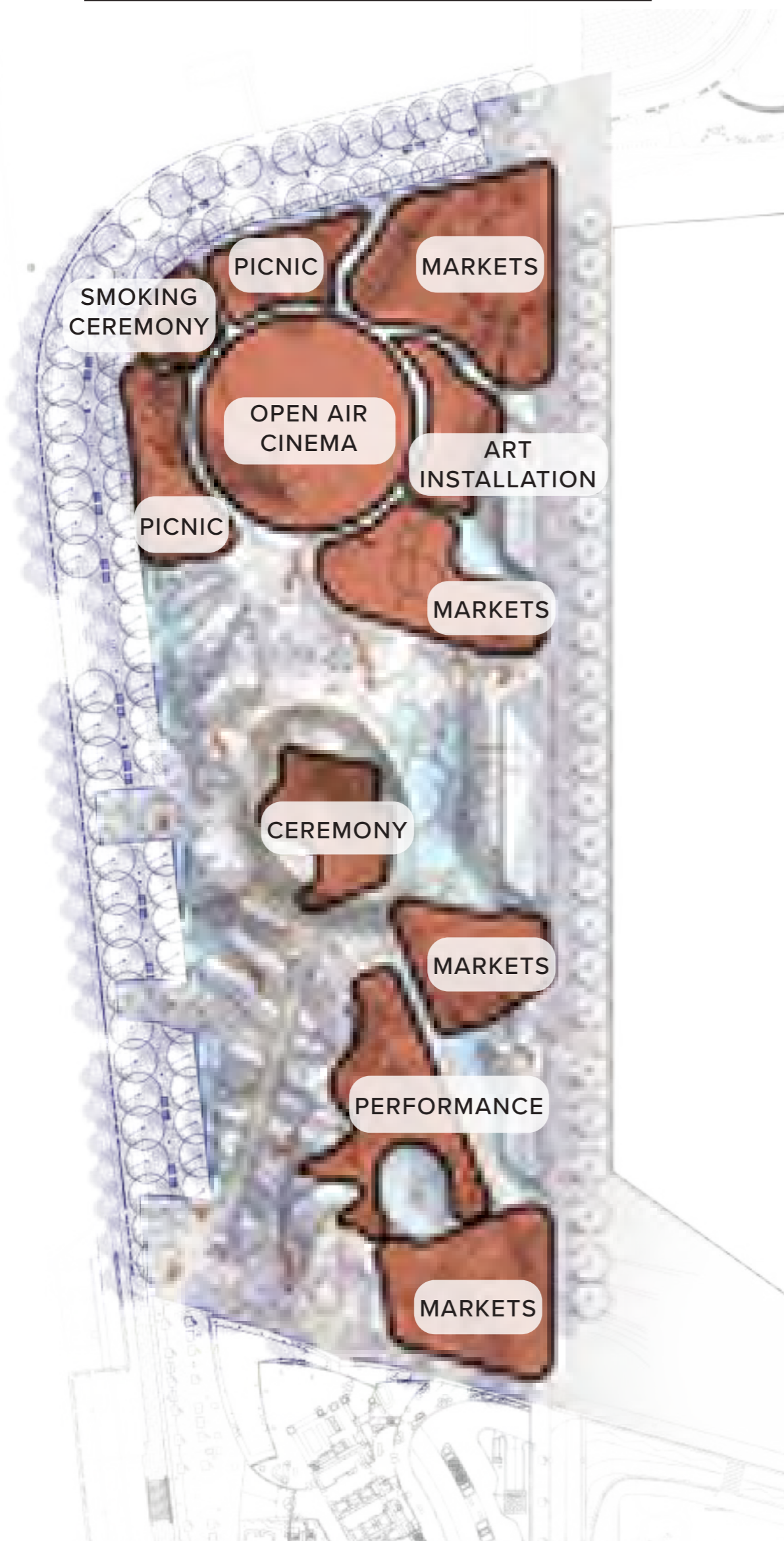
OPERATIONAL OVERLAY FOR LARGE EVENTS



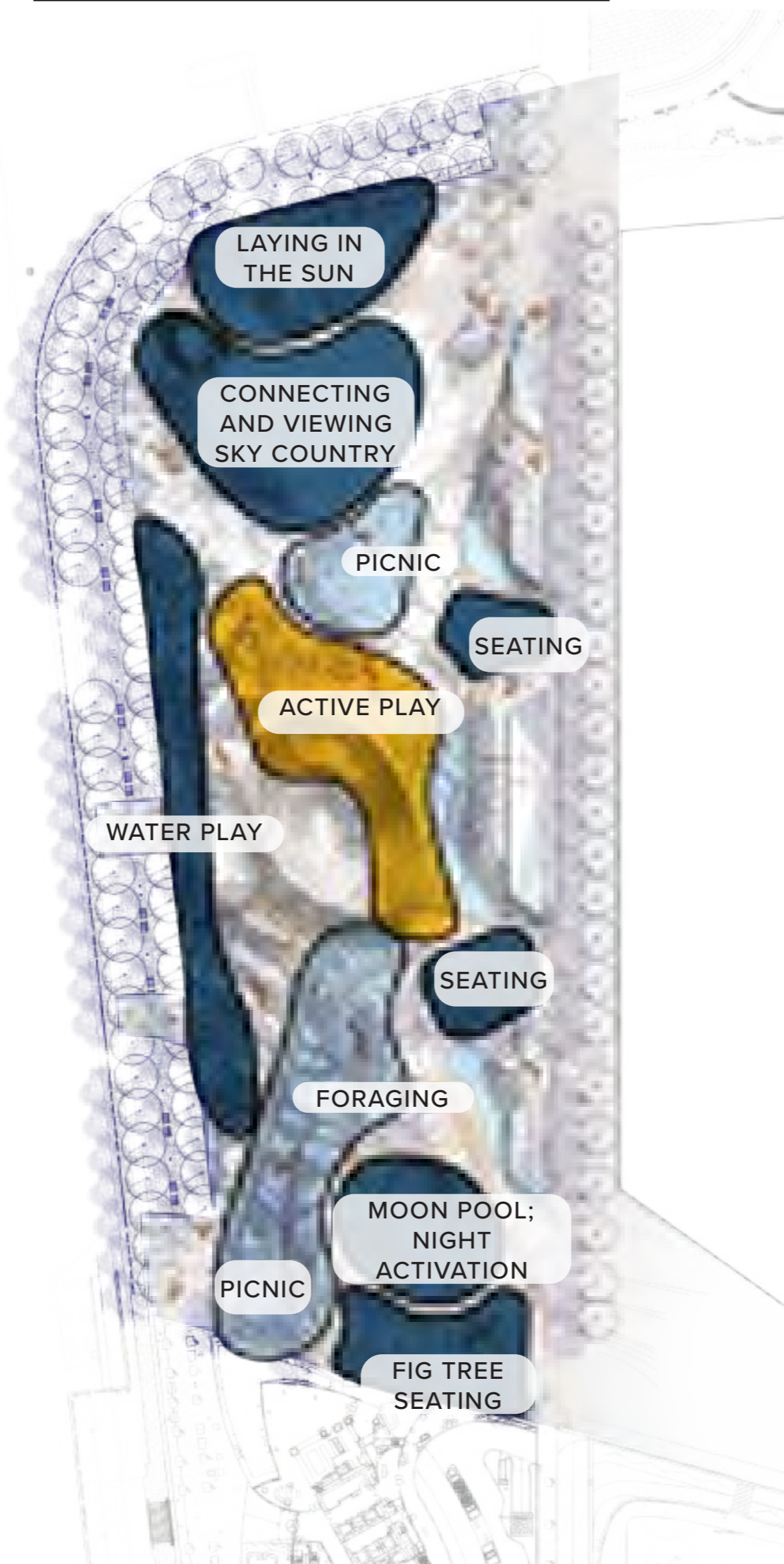
LARGE CULTURAL EVENT



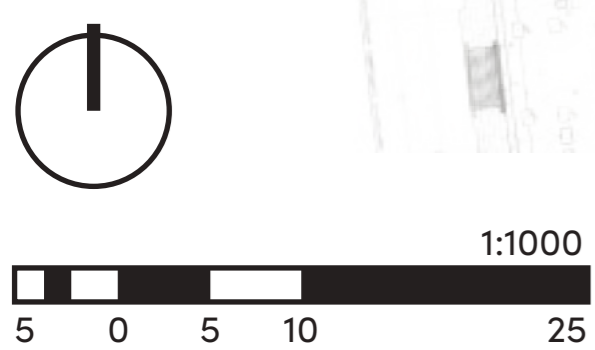
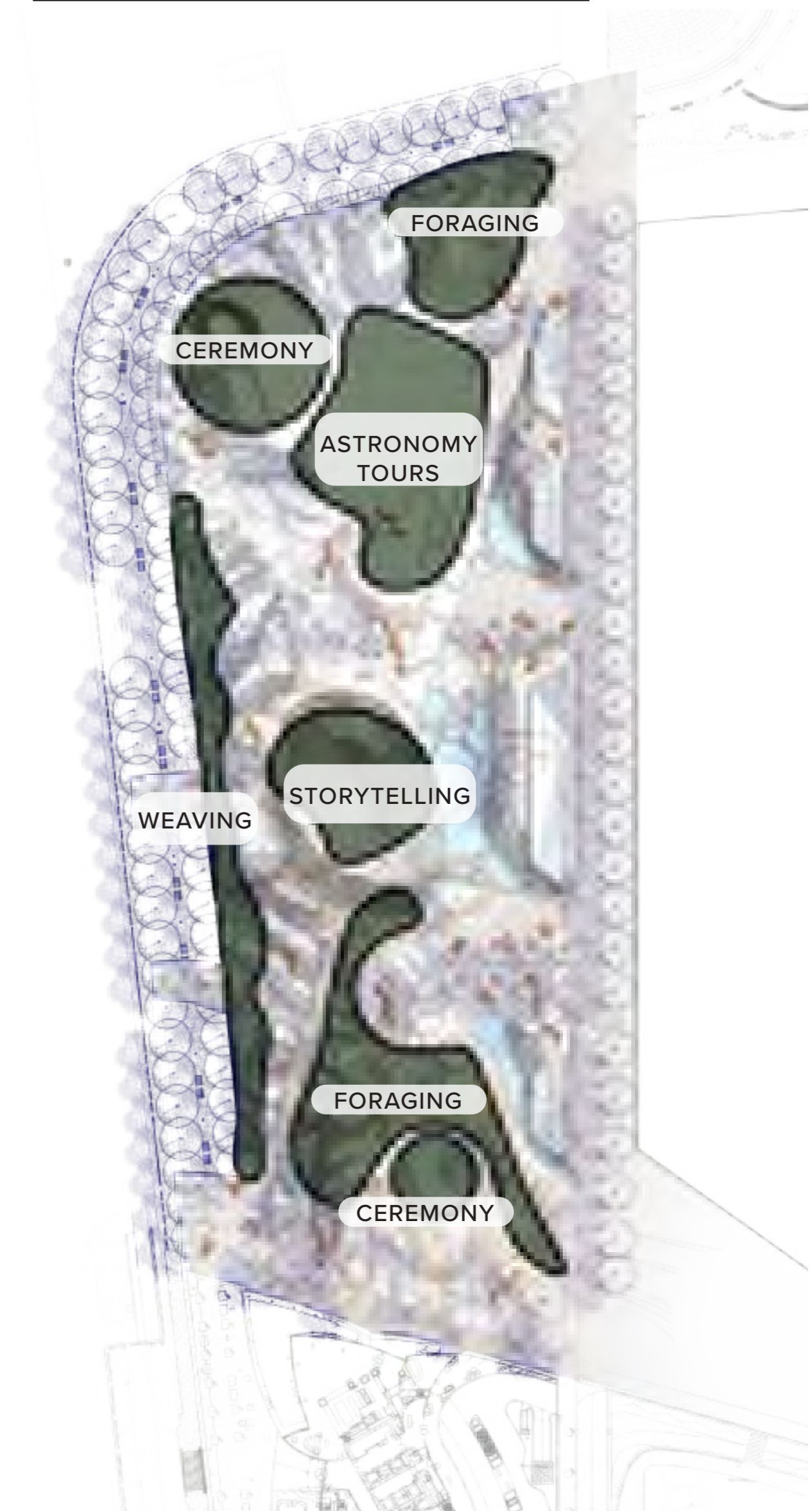
MULTIPLE SMALLER EVENTS



PASSIVE ACTIVITIES



OTHER CULTURAL OPPORTUNITIES



PUBLIC ART APPROACH

JAKE NASH + CHRIS FOX

As an interconnected songline, the artworks are held together by a response to Country, to culture. They become living cultural objects within the city. It is the people of Sydney who will make these artworks living objects.

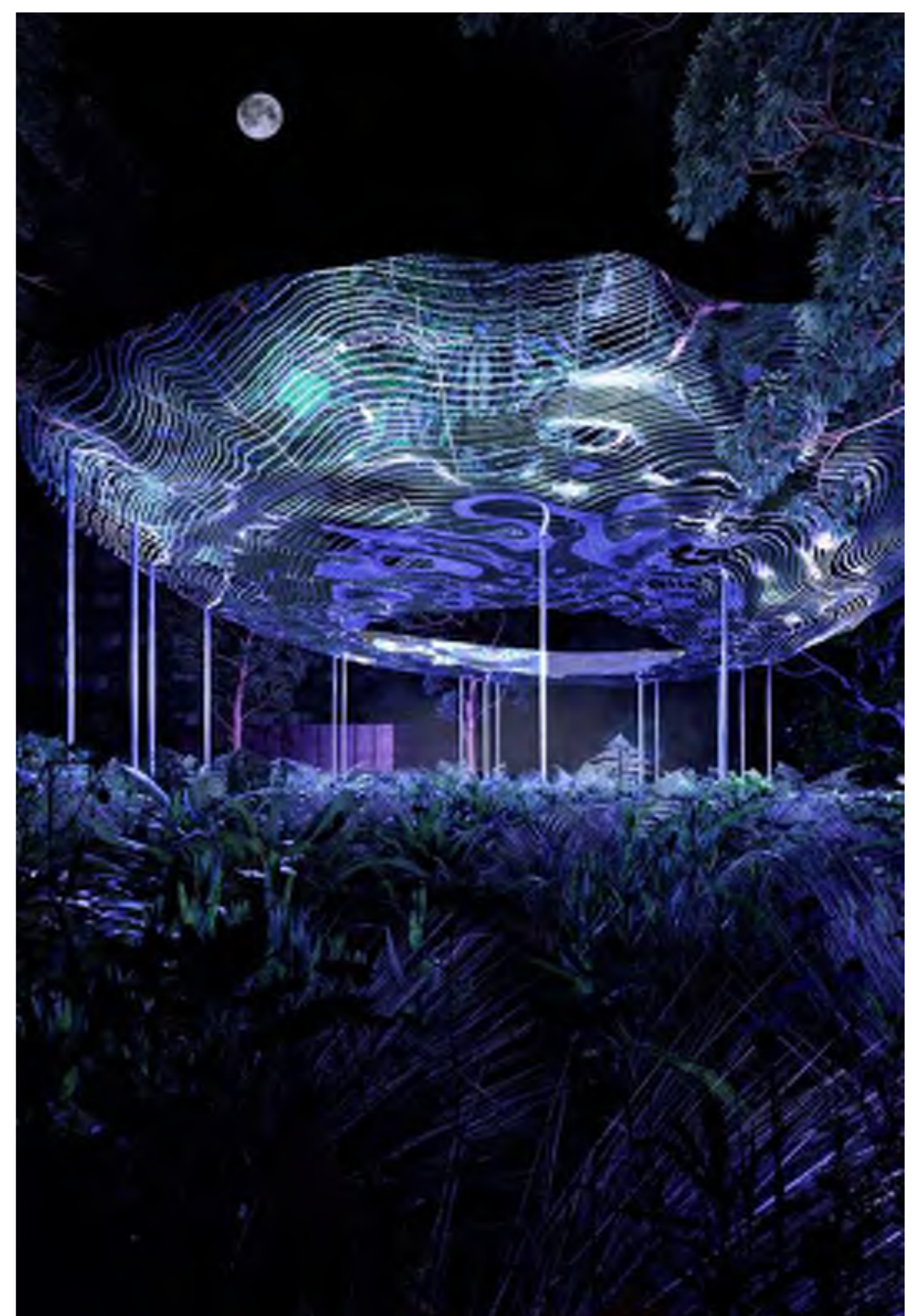
The core of connecting to Country is acknowledging the interconnectedness of everything that exists in a complex kinship system between the land, people, and spirit. We believe that our proposed artworks, both in their conception and creation, sit at the heart of all three. The three integrated artworks are currently named Moon Vessel, Wind Vessel and Water Vessel. We believe that they not only strongly answer the requirements of the Design Brief, but push beyond its expectations. They will be three interconnected landmark artworks that will exist at the forefront of contemporary First Nations and Australian art, design, and thinking.



Artworks in Park Context



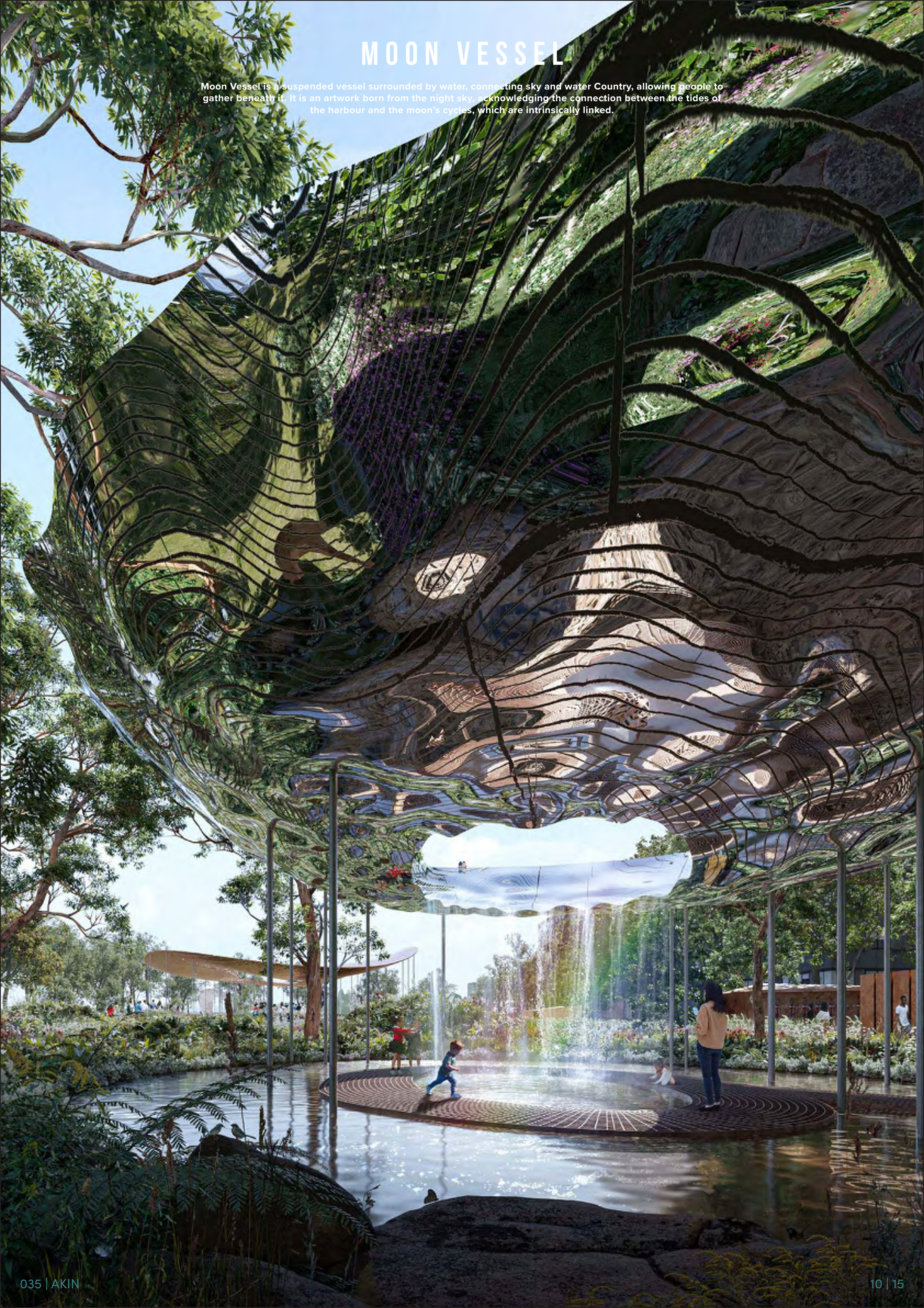
Artworks within park context



A park designed for night time activation

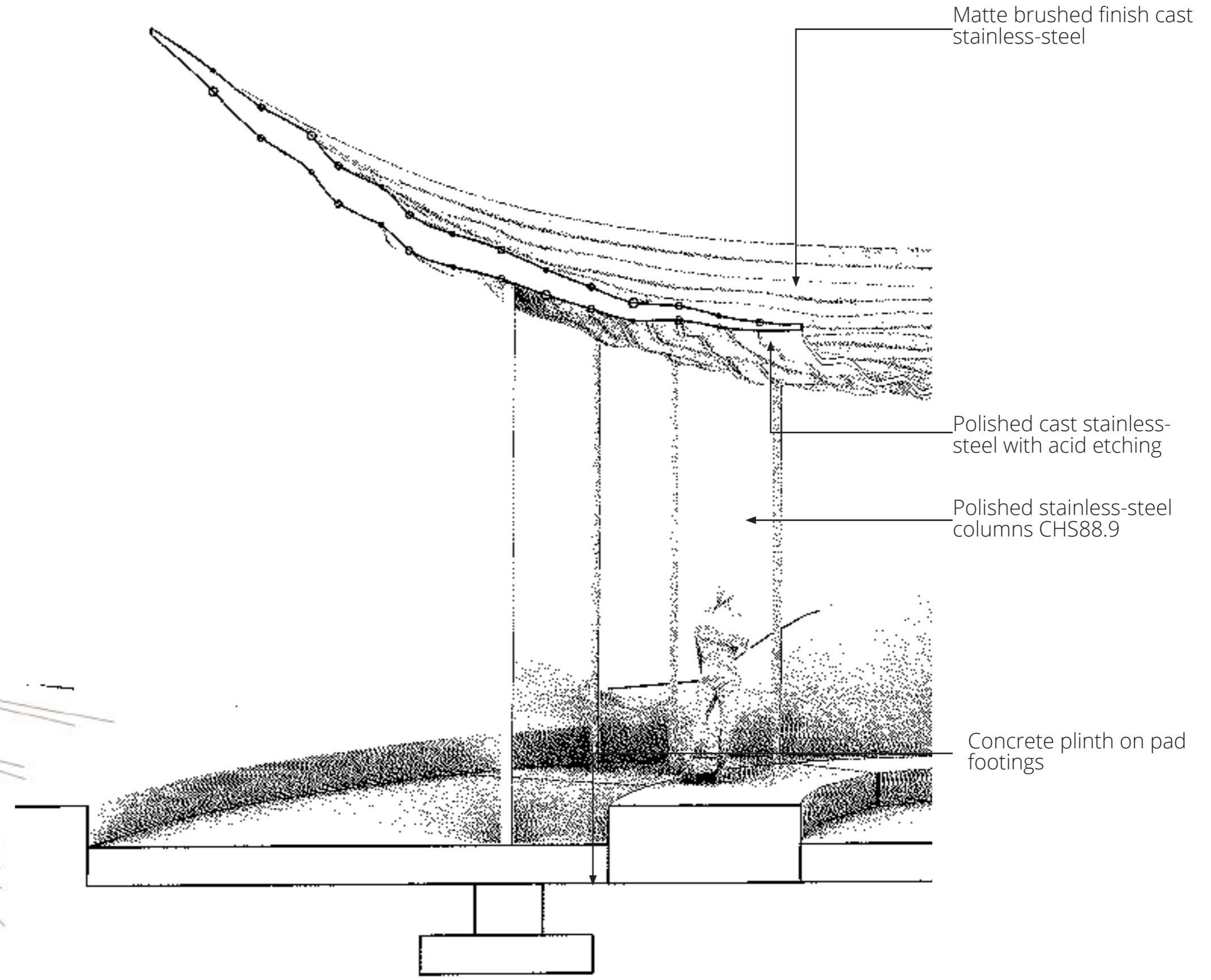
MOON VESSEL

Moon Vessel is a suspended vessel surrounded by water, connecting sky and water Country, allowing people to gather beneath it. It is an artwork born from the night sky, acknowledging the connection between the tides of the harbour and the moon's cycles, which are intrinsically linked.

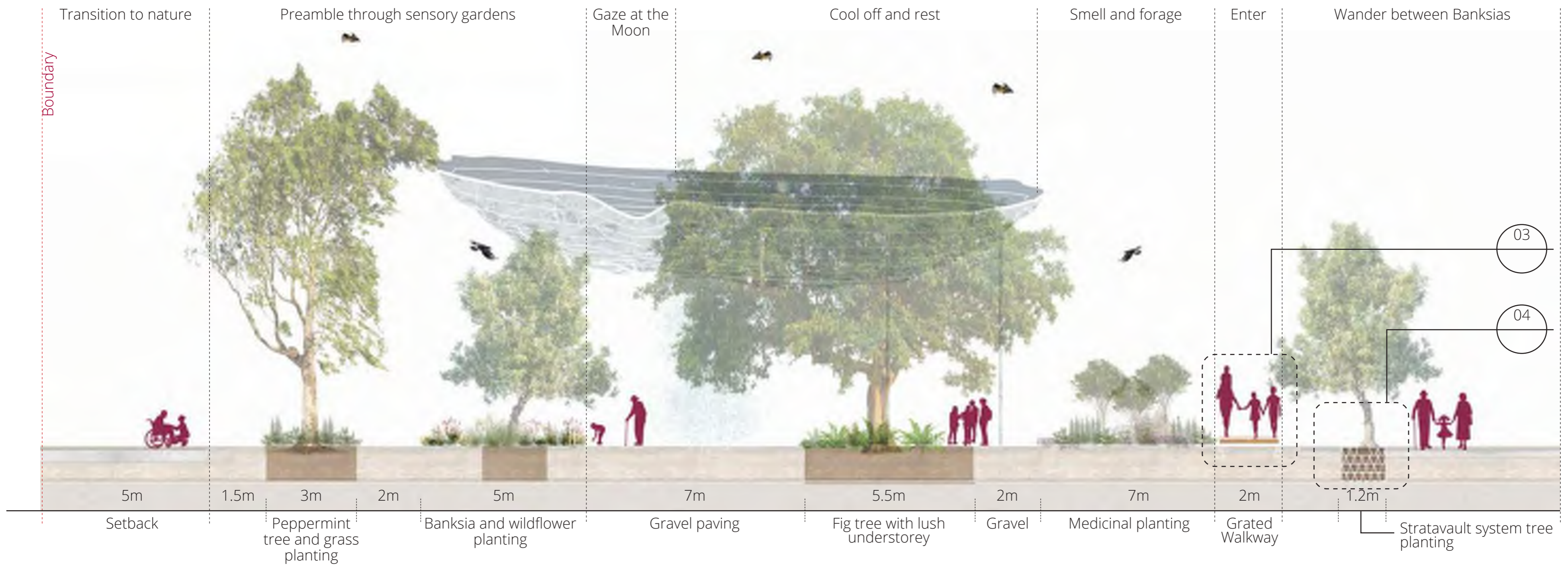


MOON VESSEL

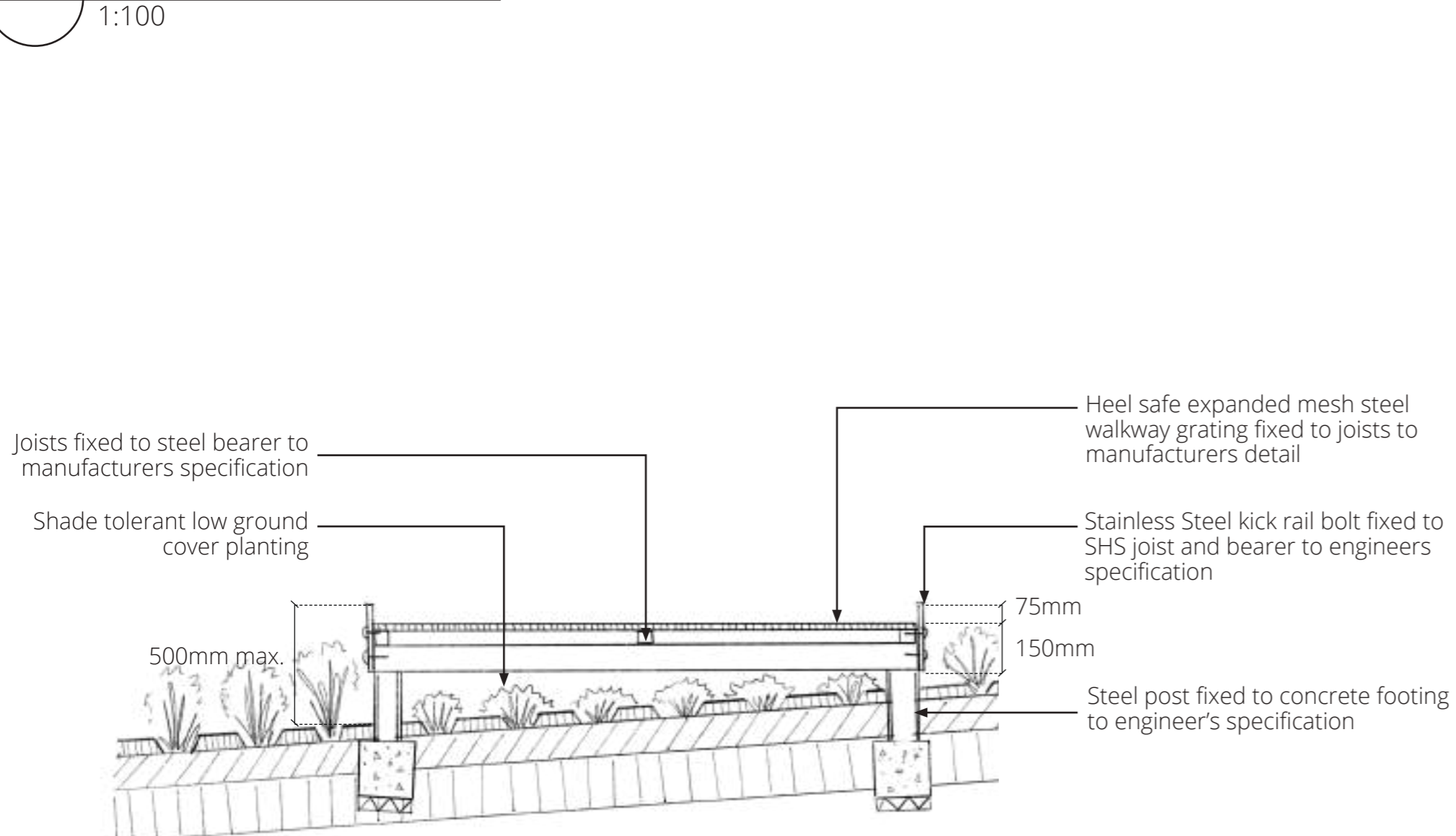
As the moon does not exist without the earth, the water and tides do not exist without the moon, the animals of the harbour do not exist without either, and we the people hold the stories that connect them all. An oculus acts as a threshold between water and sky Country, reinforcing the artwork's connection to Country and talks of the endless cycles of time.



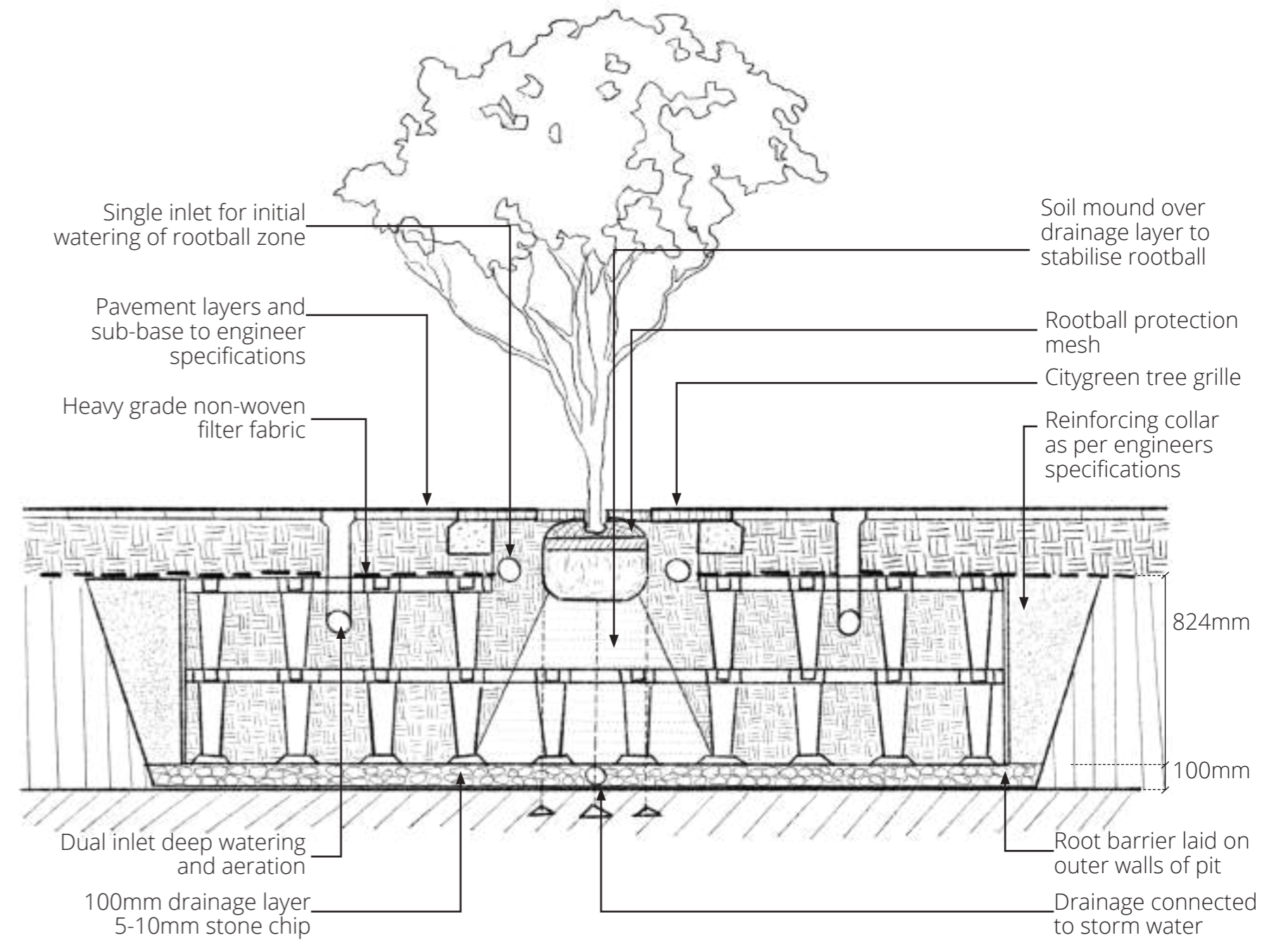
01 MOON VESSEL - PLAN
1:400



02 MOON VESSEL - SECTION
1:100



03 STEEL GRATE WALKWAY - DETAIL
1:20



04 STRATAVAULT SYSTEM - DETAIL
1:20

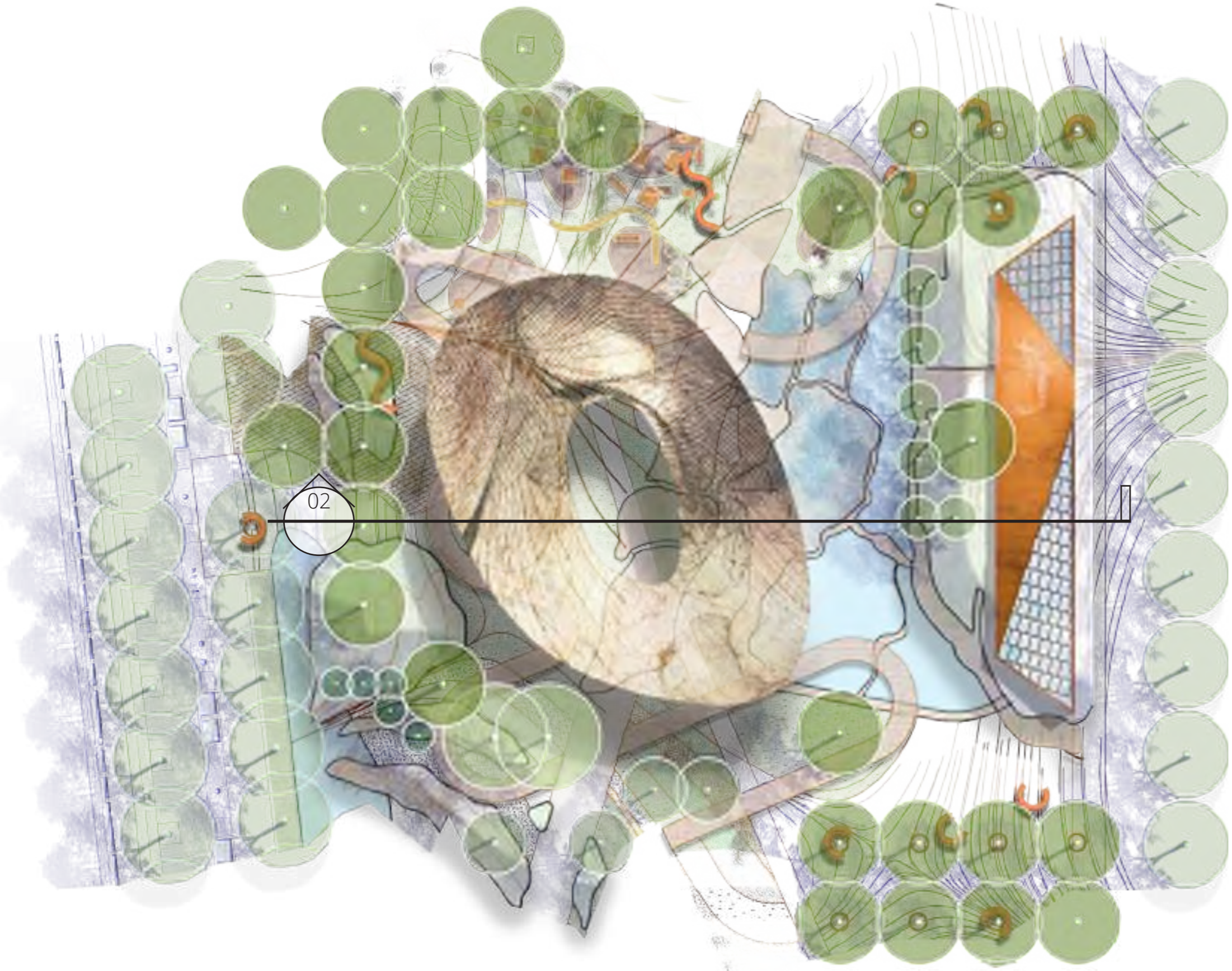
WIND VESSEL

These artworks are the places we will gather in the future, they are the places that will hold knowledge connected to Country and culture, they are the places where First Nation peoples can gather, own and share the many narratives of Sydney's past and future. Our vision is that these artworks are living cultural landmarks embedded into the heart of the city. They allow for all the stories of Sydney to be shared, the stories of who we were, who we are and the stories of who we will become.

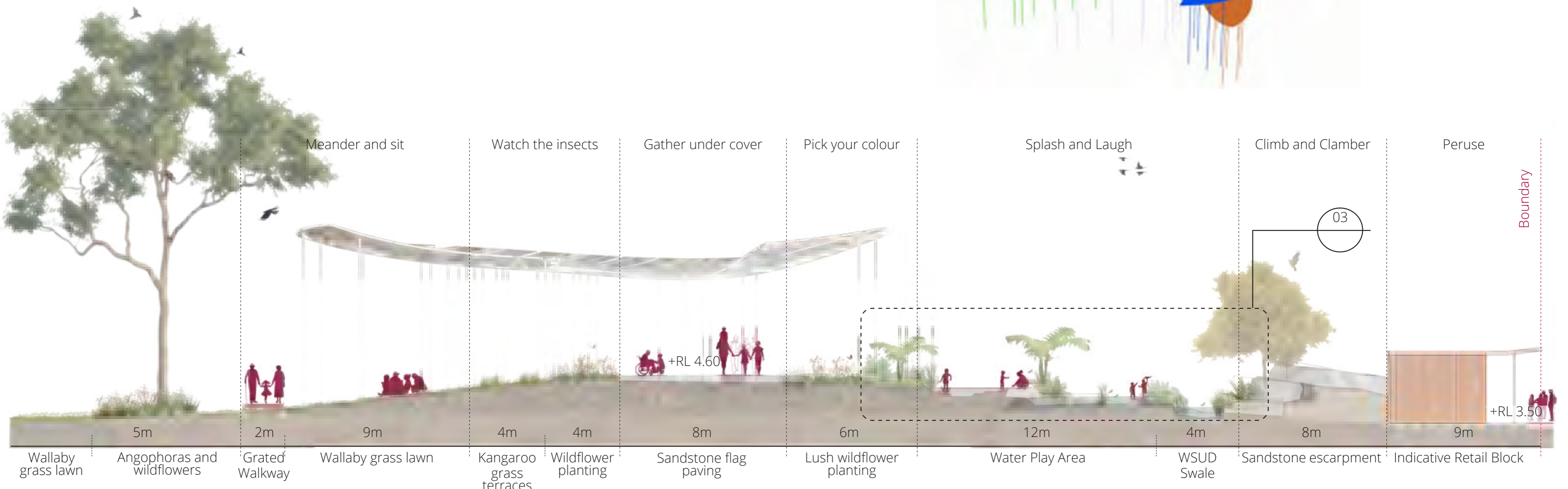
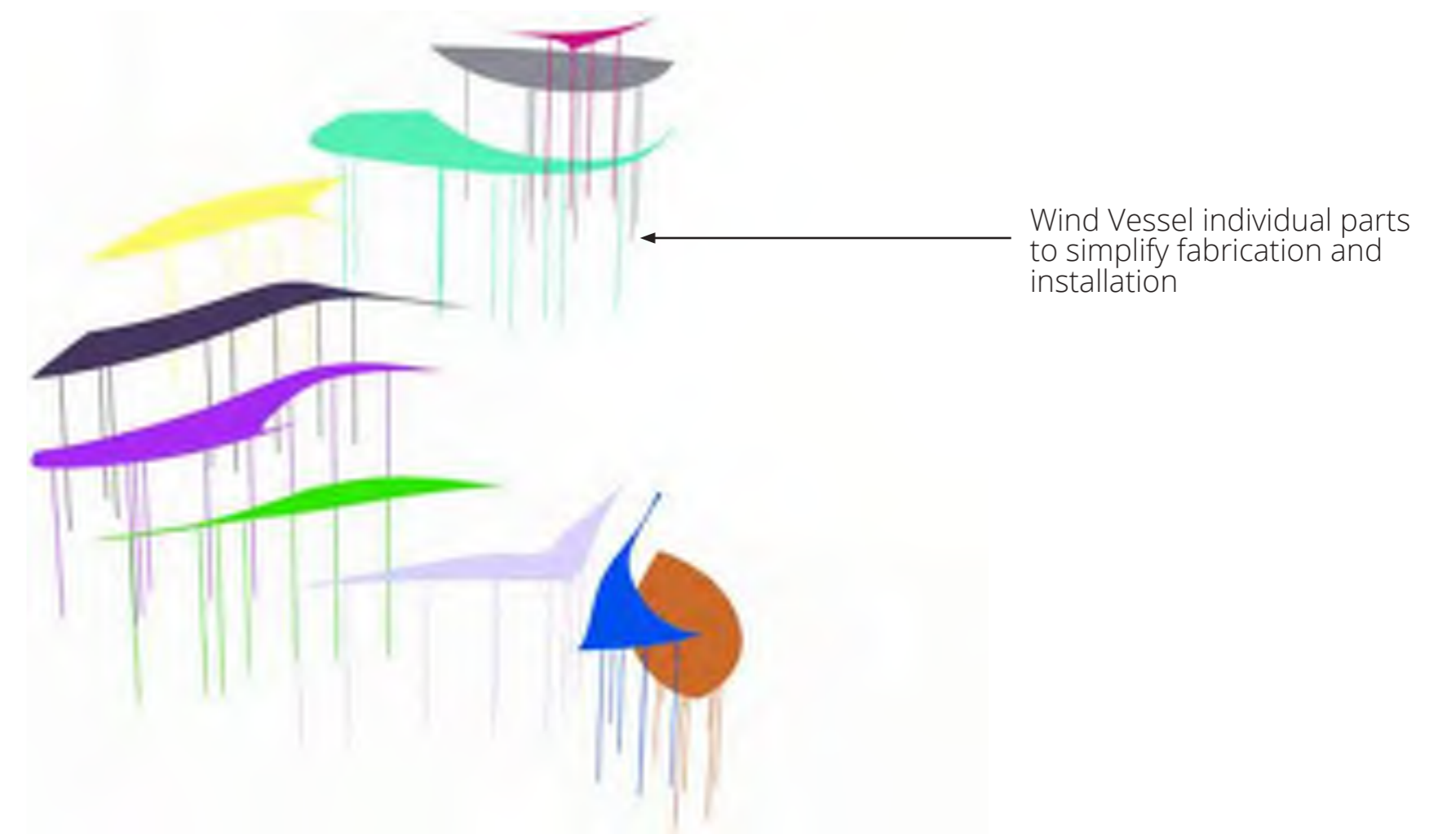
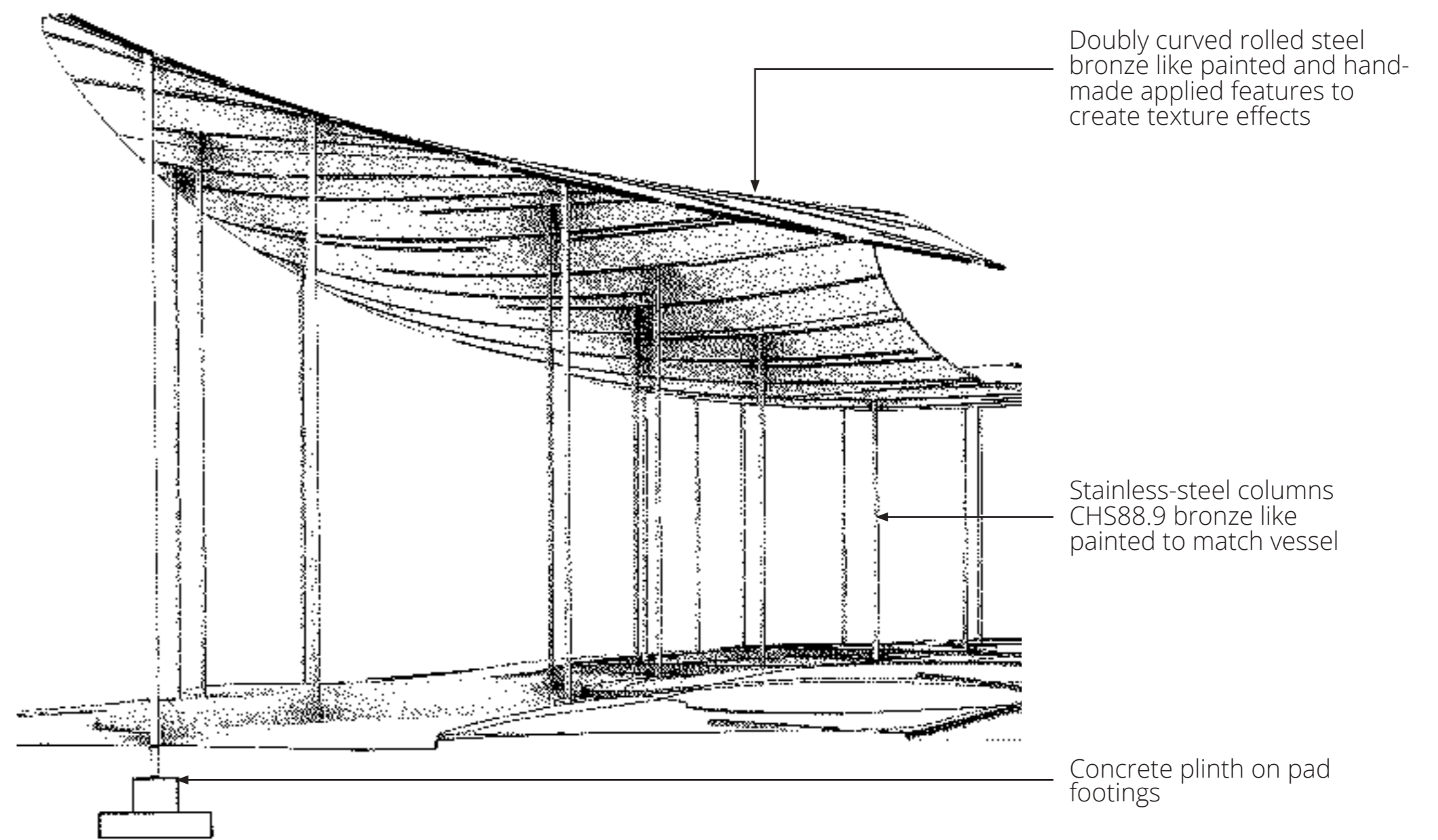


WIND VESSEL

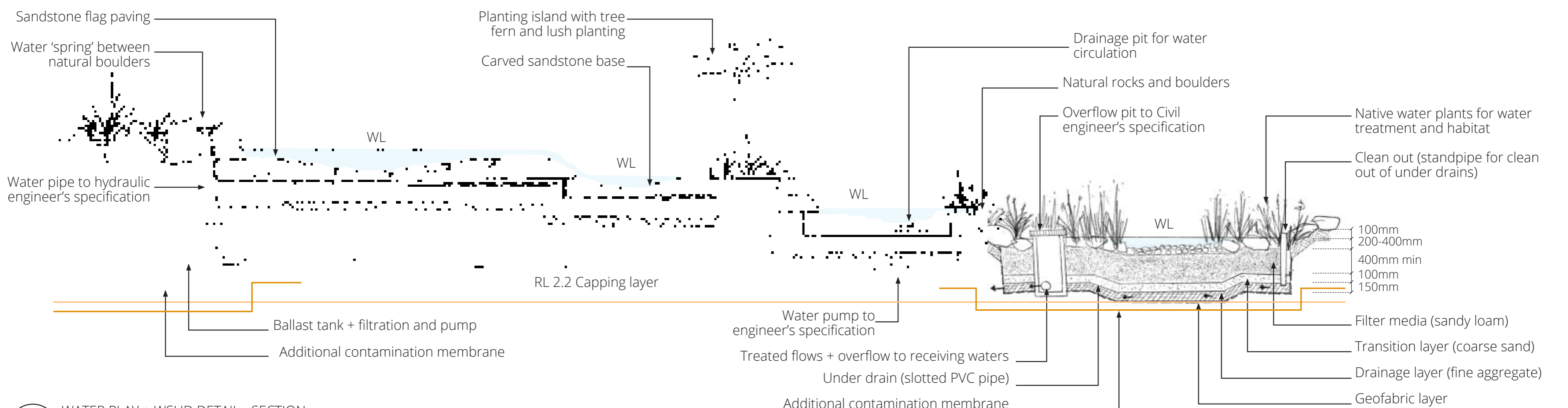
Wind Vessel positioned in the centre of the park, collects not only the people who travel through it, but also the stories, songs, and language from the past and present that travel on the wind. Suspended in the centre of the park above the ground by slender columns that are deliberately positioned by the mapping of wind across the site. These path lines expressed in the ground plane are then projected through the form above creating rolling apertures in its surface.



01 WIND VESSEL PLAN
1:400



02 WIND VESSEL SECTION
1:130



03 WATER PLAY + WSUD DETAIL - SECTION
1:20

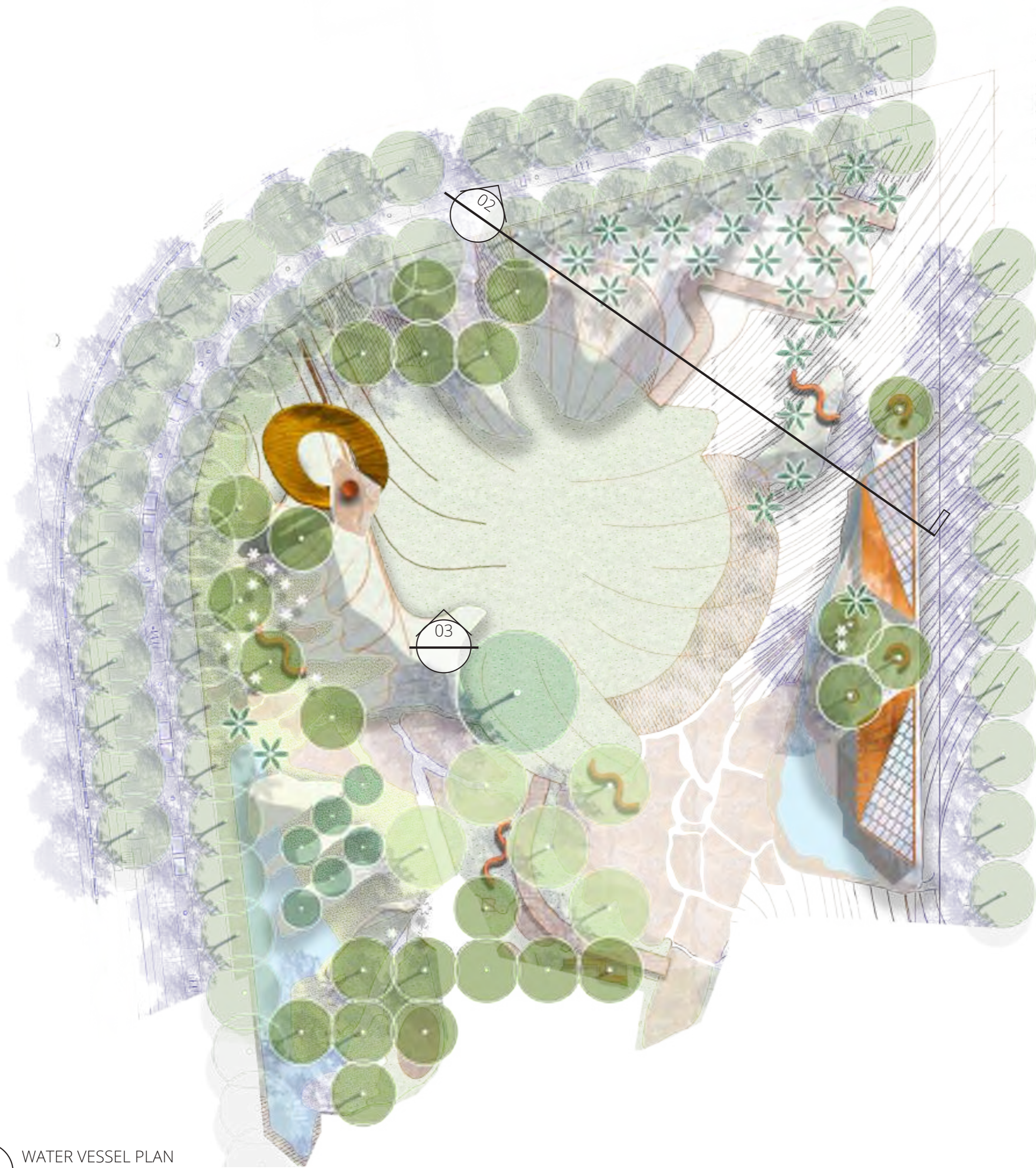
WATER VESSEL

The Water Vessel is a place of gathering. Its large aperture encompasses water, earth, and sky Country, bringing together all of the cultural narratives and knowledge of the park. It looks out to the harbour and Me-Mel, connecting the park to all of the other narratives that exist around the harbour.

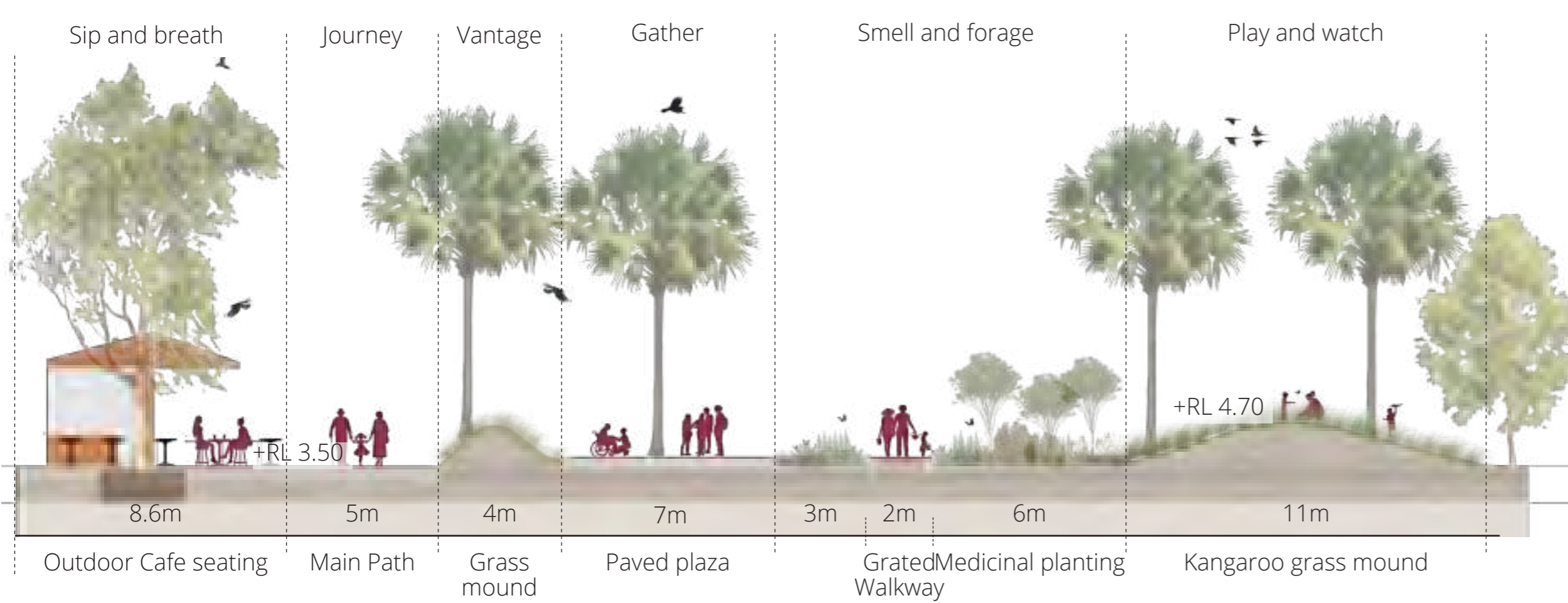


WATER VESSEL

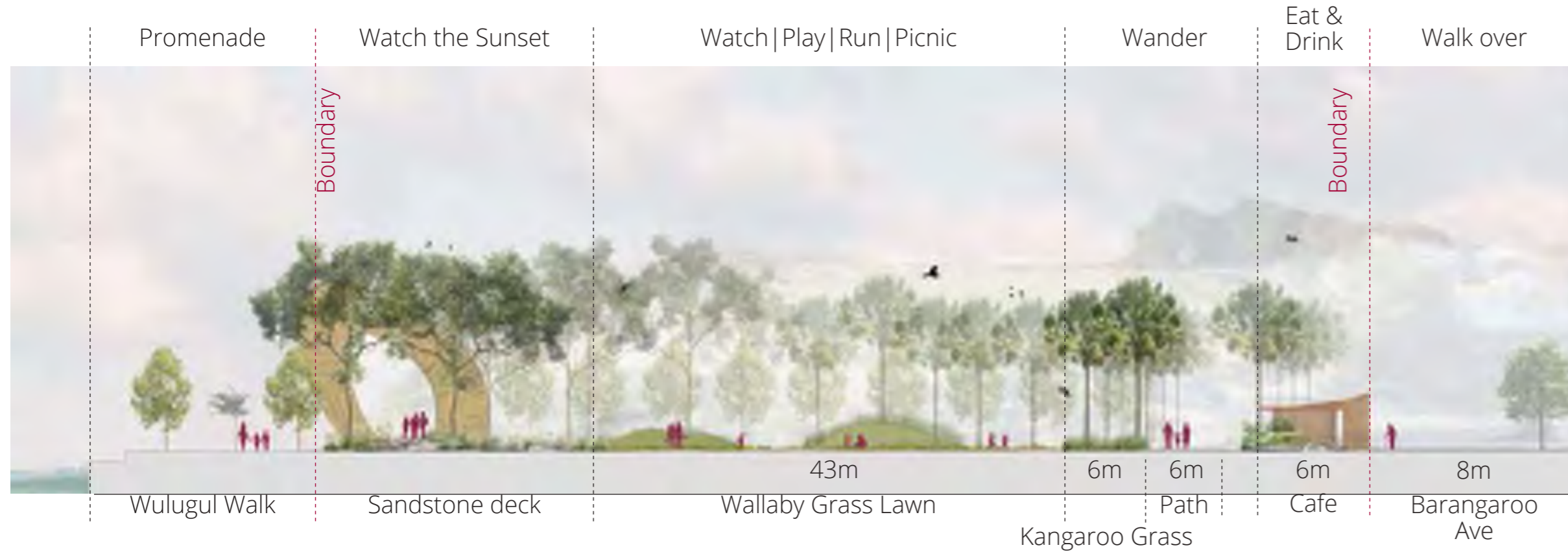
The Water Vessel is a connection point to the rest of the harbour and a place of acknowledging the past while also being a gathering place for the future. It is made from timber, with the side facing the harbour burnt and charcoaled, paying homage to the many campfires and Nawi fires that have existed across the harbour before settlement. The side facing the park is left natural and open to the elements, speaking to the shared history the city now has and its future.



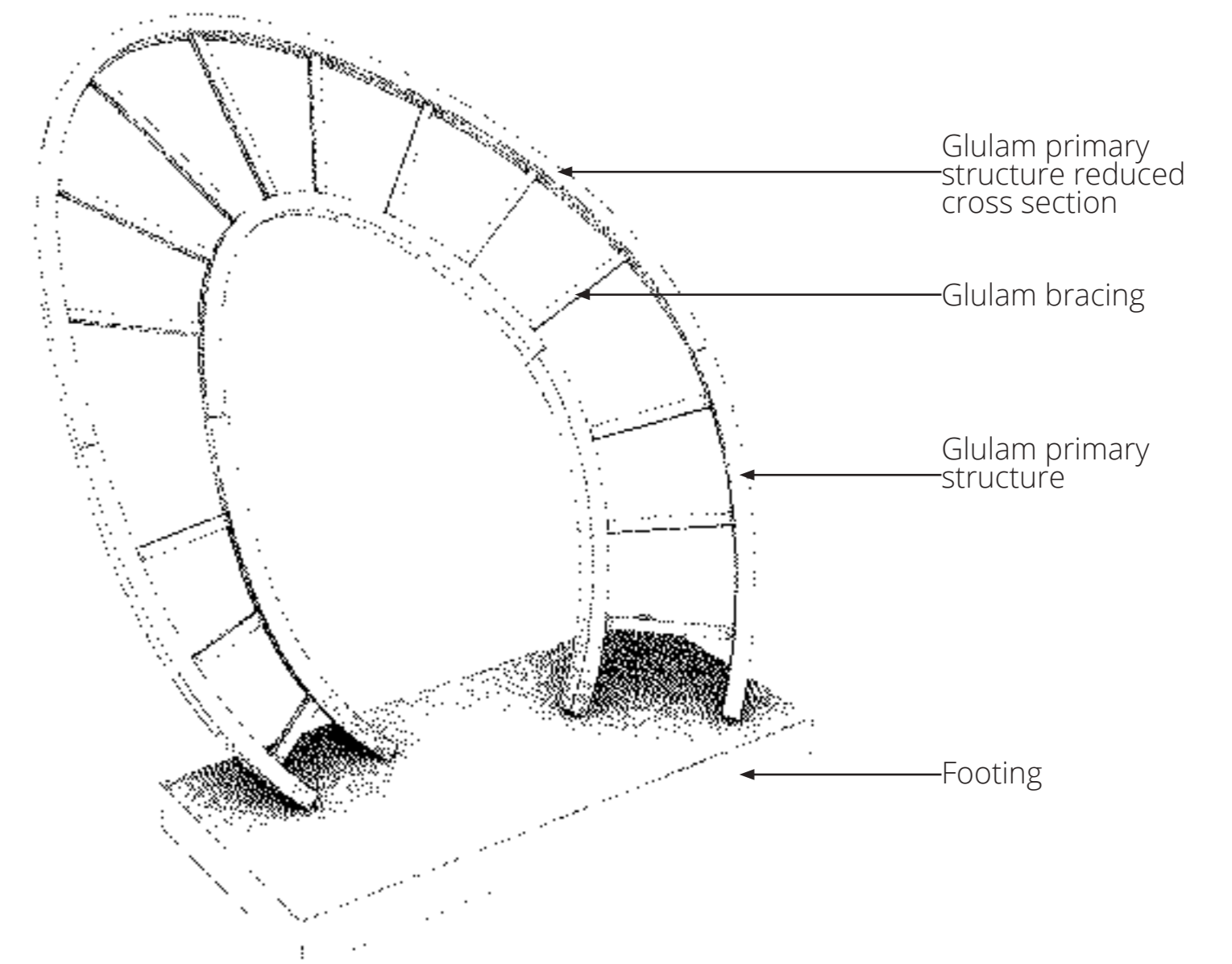
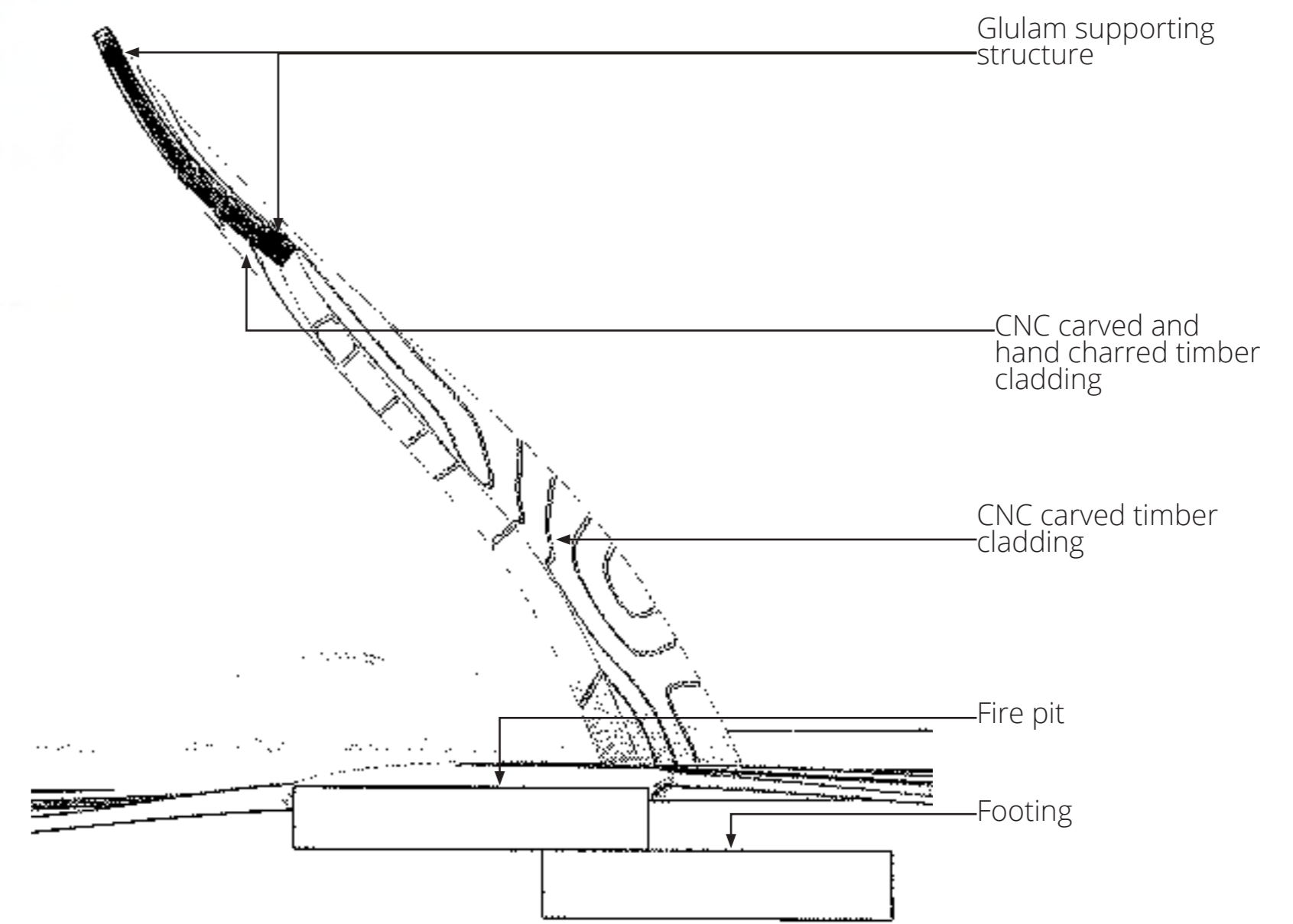
01 WATER VESSEL PLAN
1:400



02 WATER MEADOW SECTION
1:150



03 WATER VESSEL ELEVATION
1:400



WATER VESSEL STRUCTURE AND SKIN



WATER VESSEL MATERIALITY

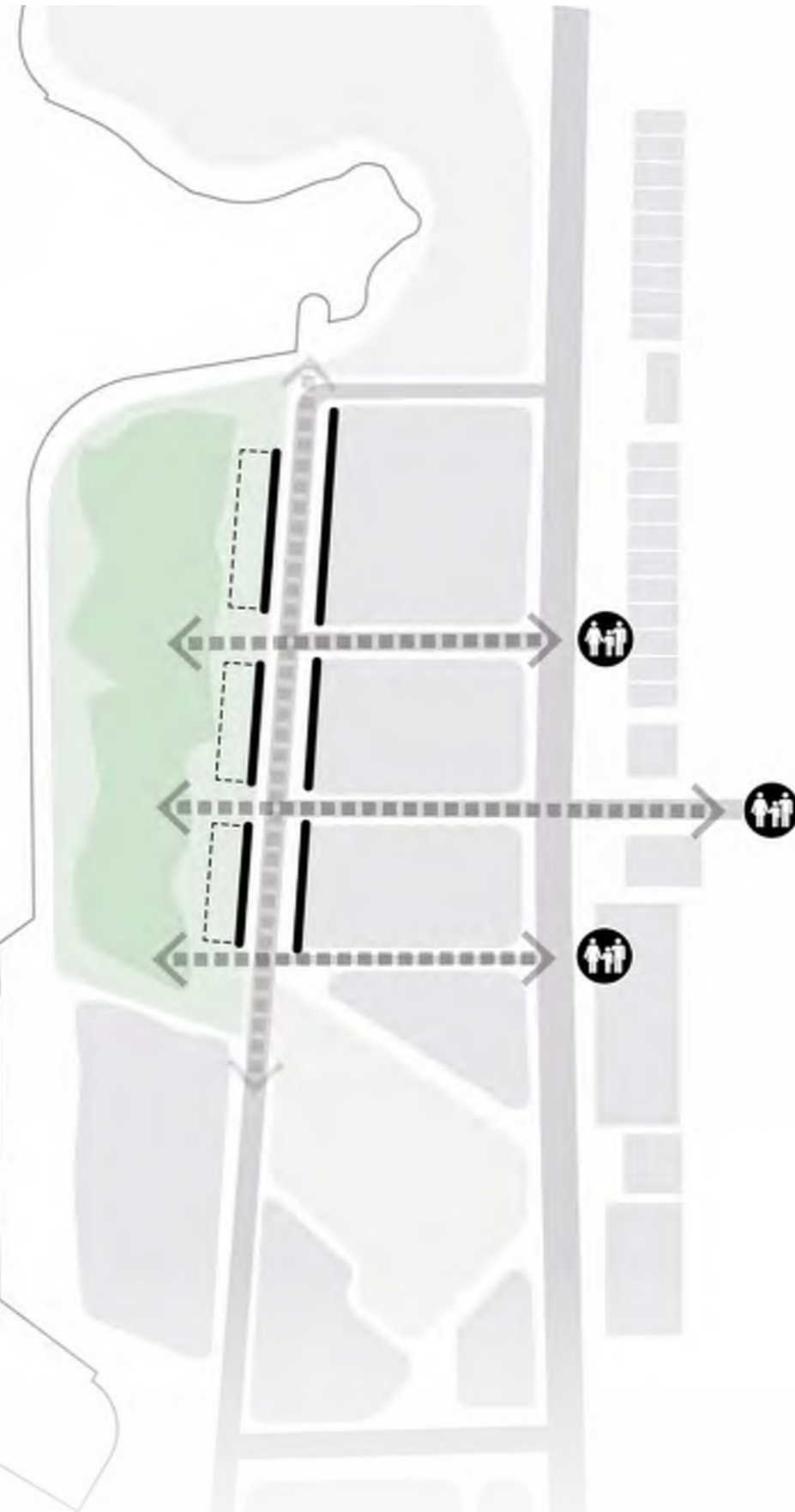
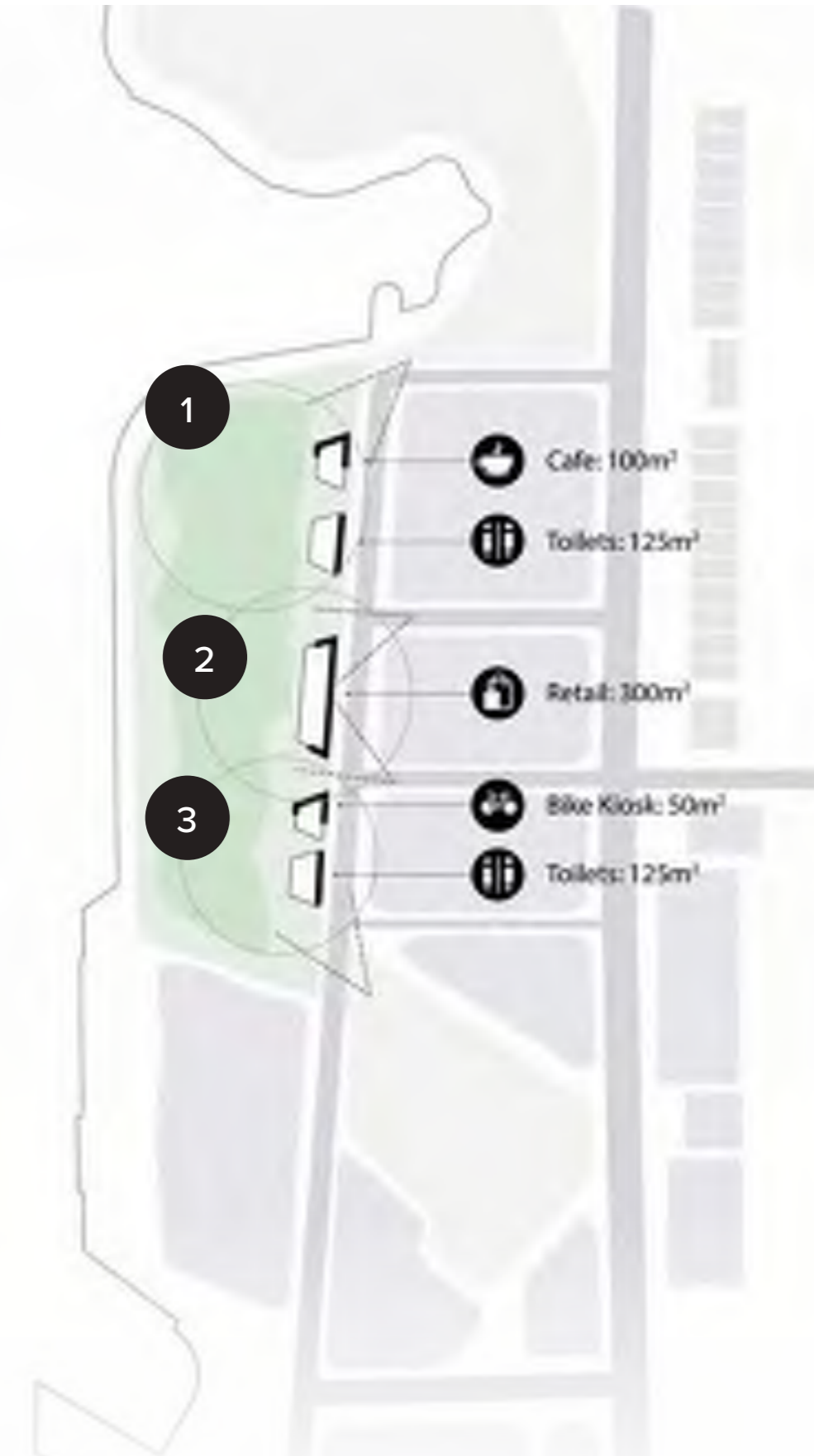


URBAN INTERFACE

1. PROGRAM AND ACTIVATION OF KEY AREAS

2. VISIBILITY AND SAFETY

3. ACCESS AND SERVICING



- 1. Interfaces with event space and cove > sun and views
- 2. Interfaces with avenue and lanes > visibility
- 3. Interfaces with South Barangaroo > connection

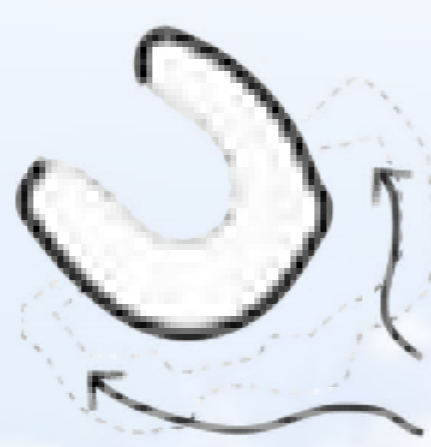
Acknowledge future urban axis and key intersections
 Maximize visibility and way-finding from key accesses
 Improve night safety by interfacing with street and retail

Activate Barangaroo Avenue and interface with built-form
 Vehicular accessibility for servicing and waste management
 Gradual transition from natural to built-form

Embrace



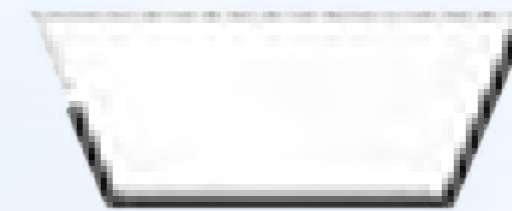
Protect



Nurture



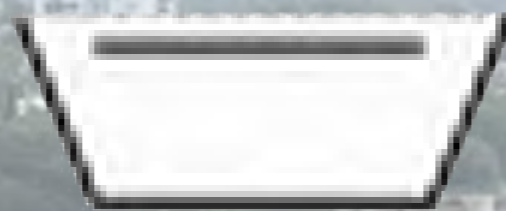
Translate to architectural elements



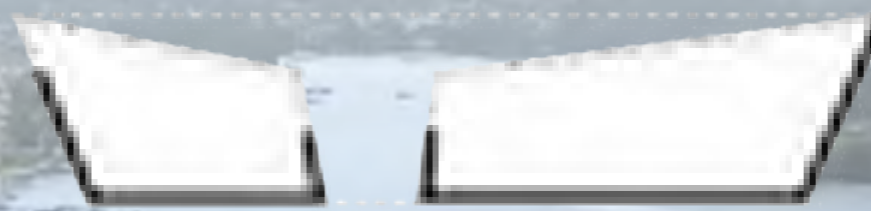
Adapt to program and context drivers



Cafe



2x Toilets



Retail



Bike Kiosk

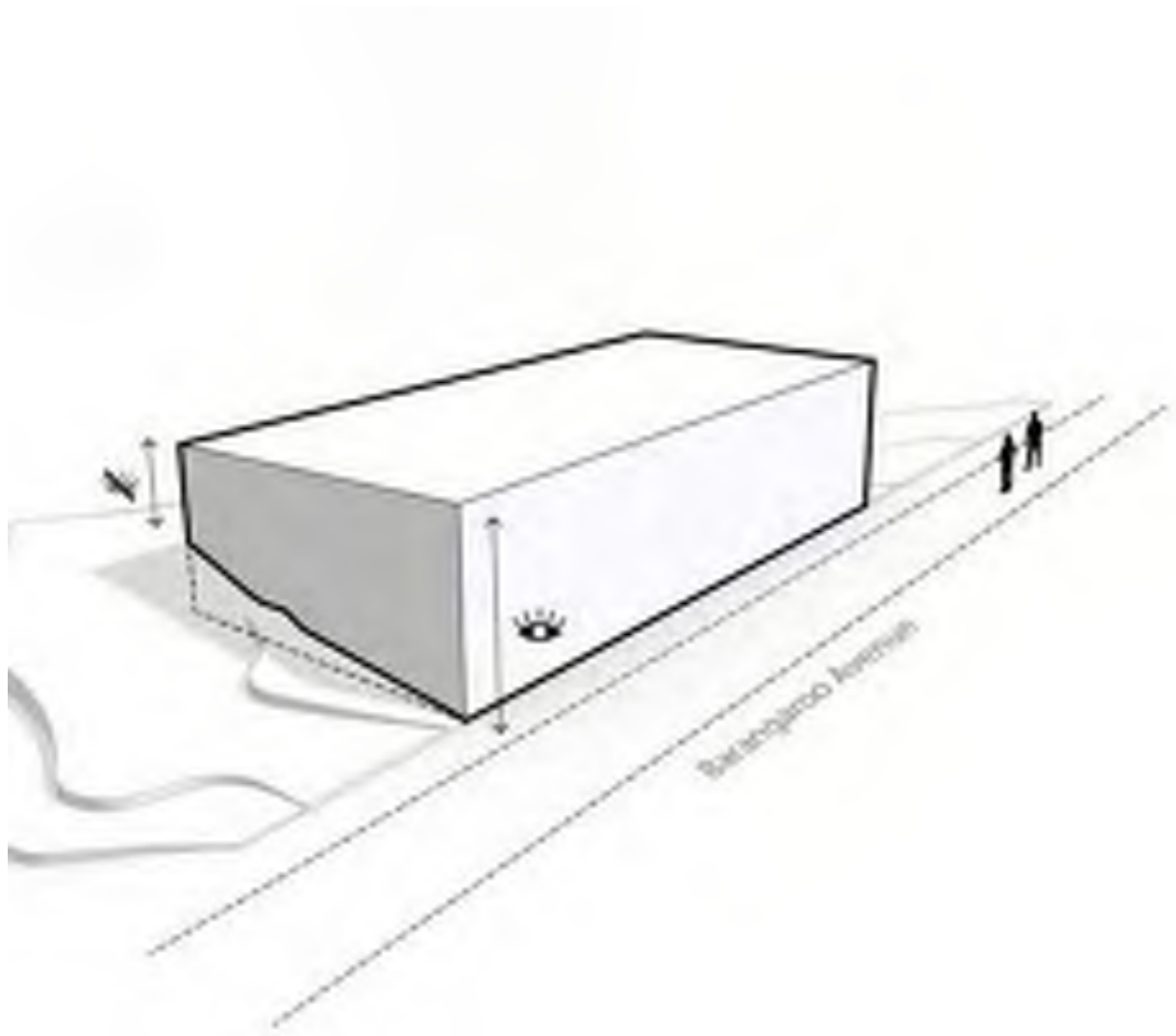


ARCHITECTURE

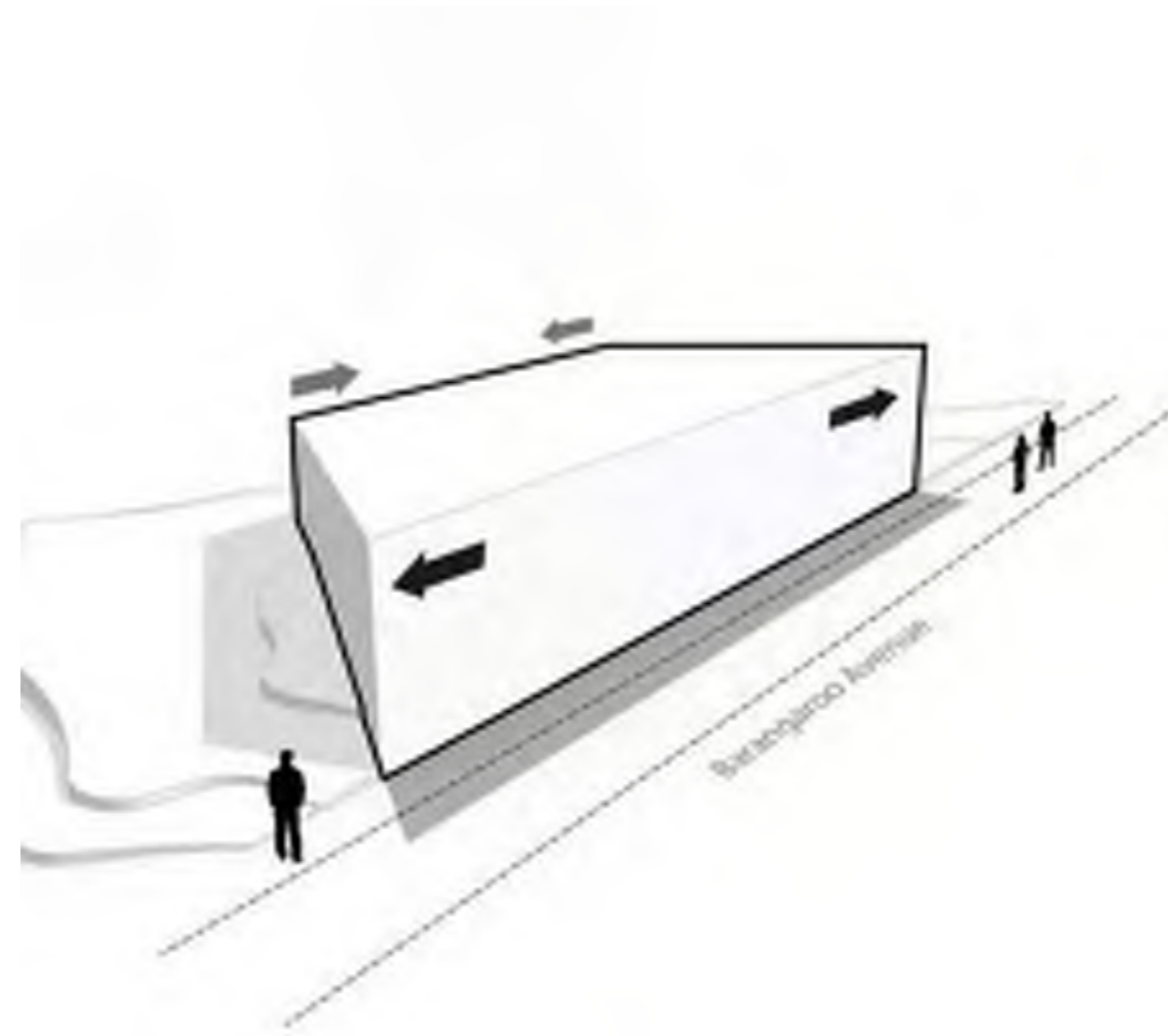
Walking in the Park,

Glimpses of weathered steel volumes through the planted landscape. A family of pure geometries, discreet and respectful to the park side are interfacing with Barangaroo Avenue, creating a transition between city and nature.

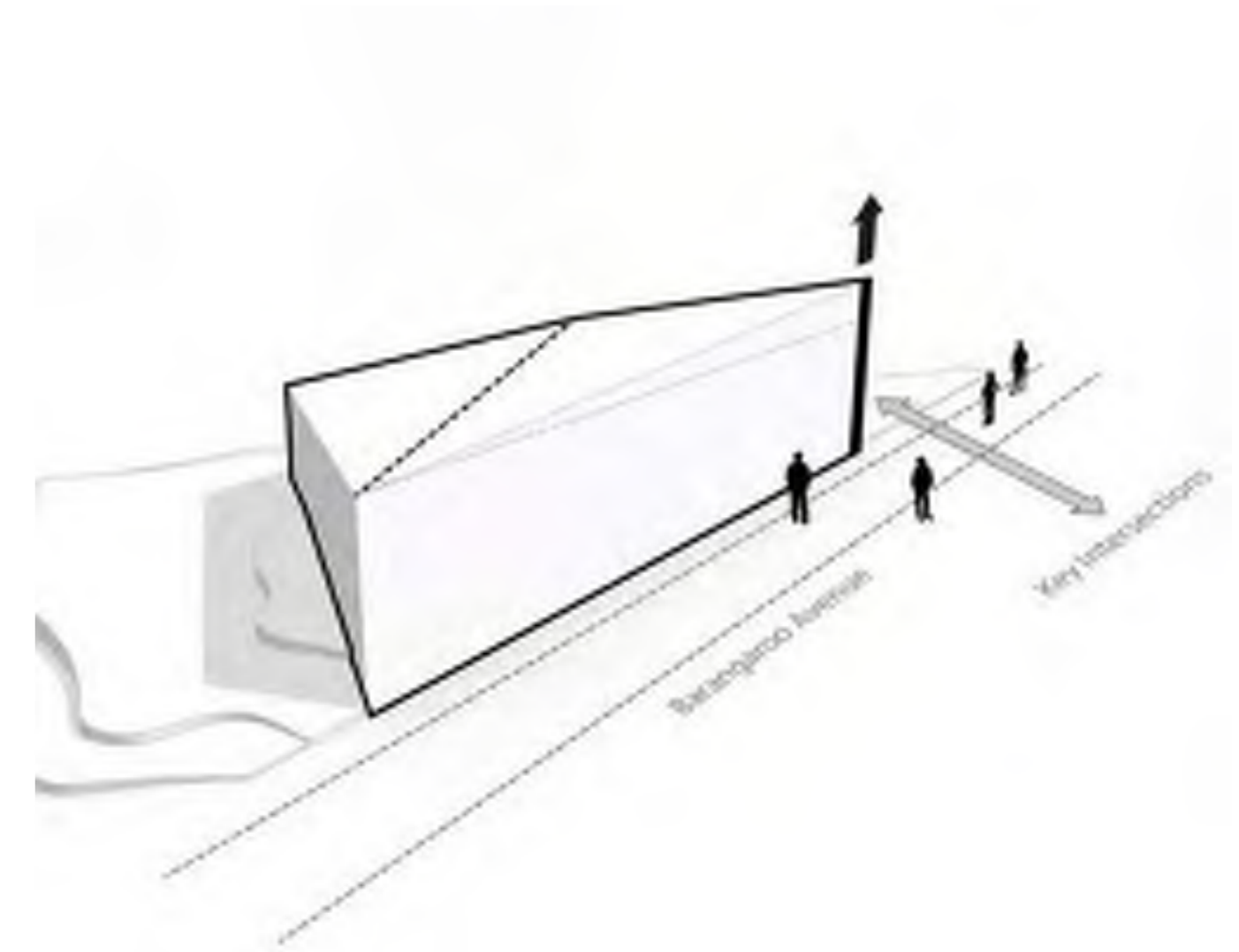
Carefully placed at the key intersections of the site these structures maximise the human experience by framing views, protecting from the elements, serving as orientation and way-finding elements and most importantly, supporting the activity and enjoyment of the Park.



1. Interface with street and integrated in landscape



2. Maximise street frontage and minimise impact on Park

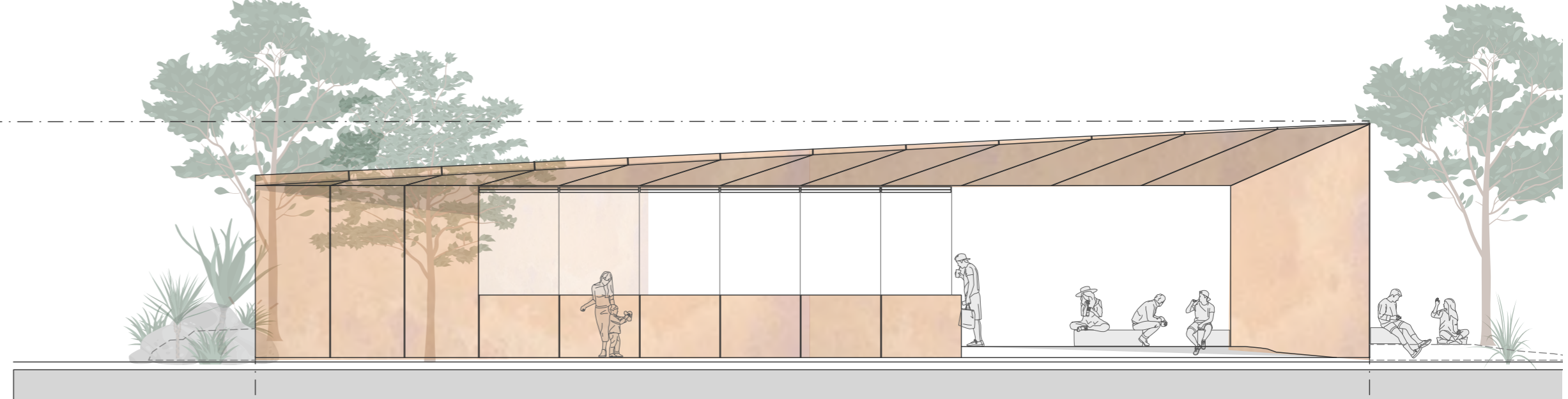


3. Maximise visibility at key intersections

CAFE

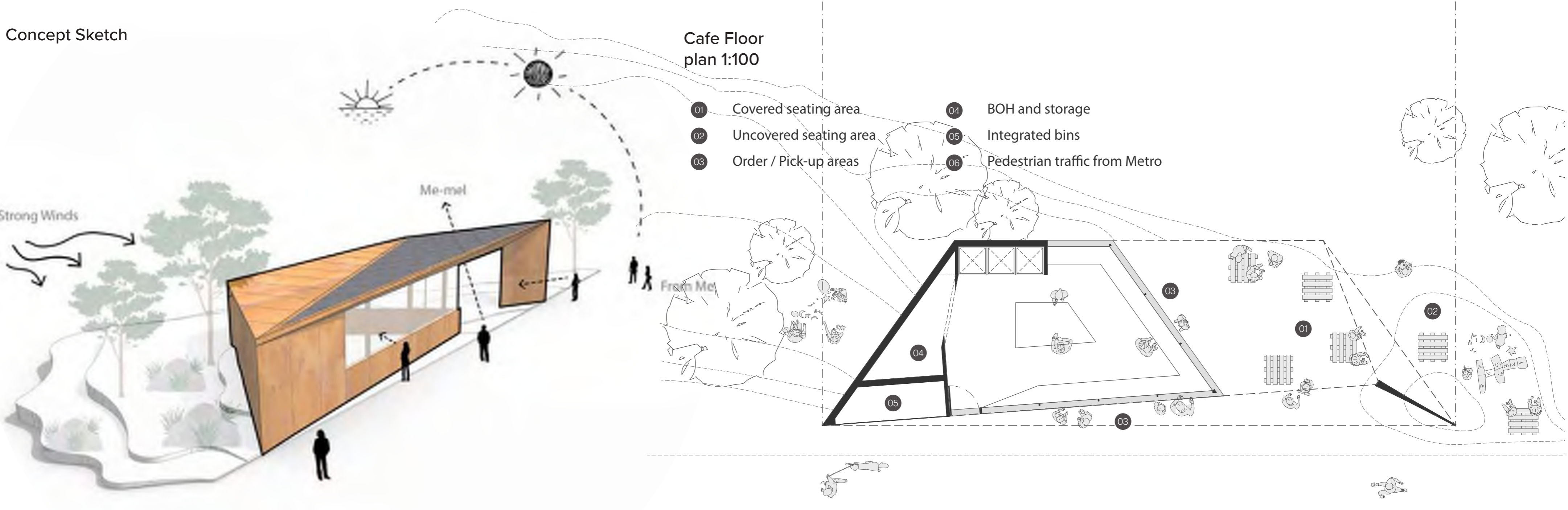


Cafe Section 1:100



Cafe Elevation 1:100

Concept Sketch

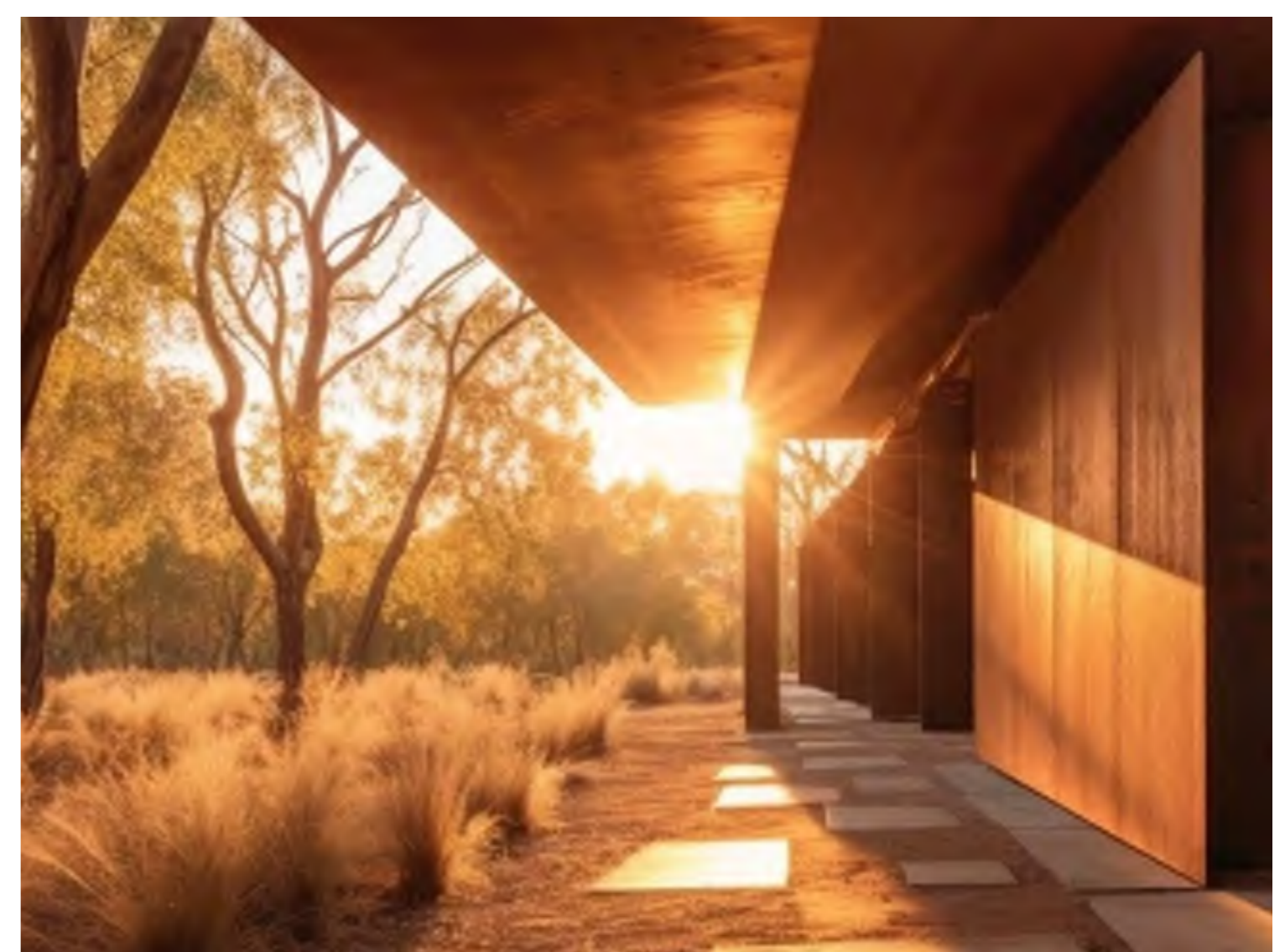


Barangaroo Avenue

UP-CYCLING STEEL SCRAPS

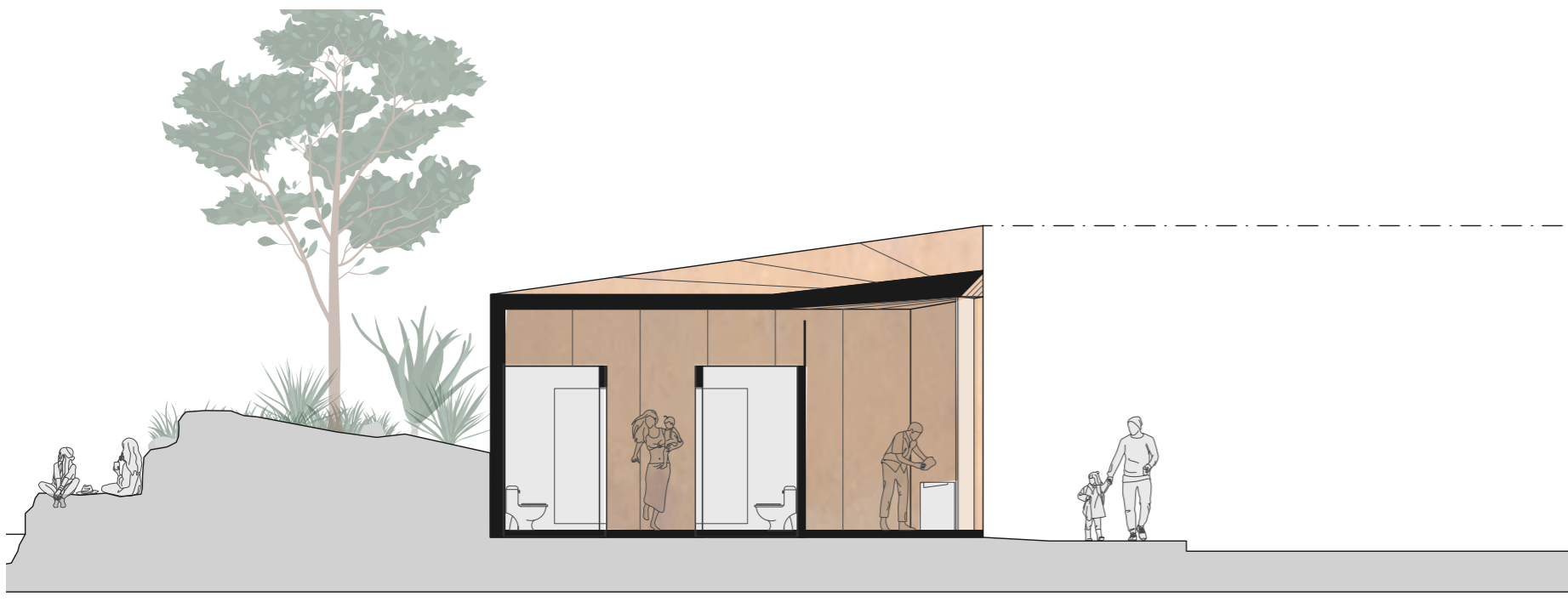
Each year, scrap merchants process about 1.9 millions tons of ferrous scraps. Not only these scraps are still incredibly durable and versatile and 100% recyclable, but the recycling process is cheaper than producing new steel.

Recycling 1 tonne of steels saves 1,131Kg of iron ore, 54kg of limestone and 633kg of coal.

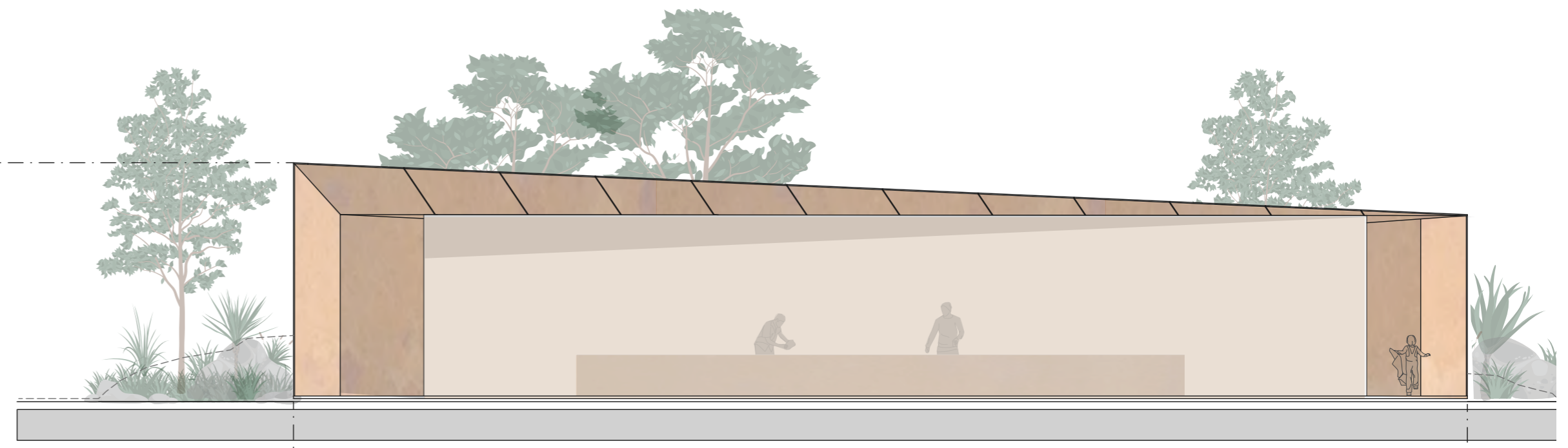


ARCHITECTURE

TOILETS



Toilets Section 1:100



Toilets Elevation 1:100

Concept Sketch

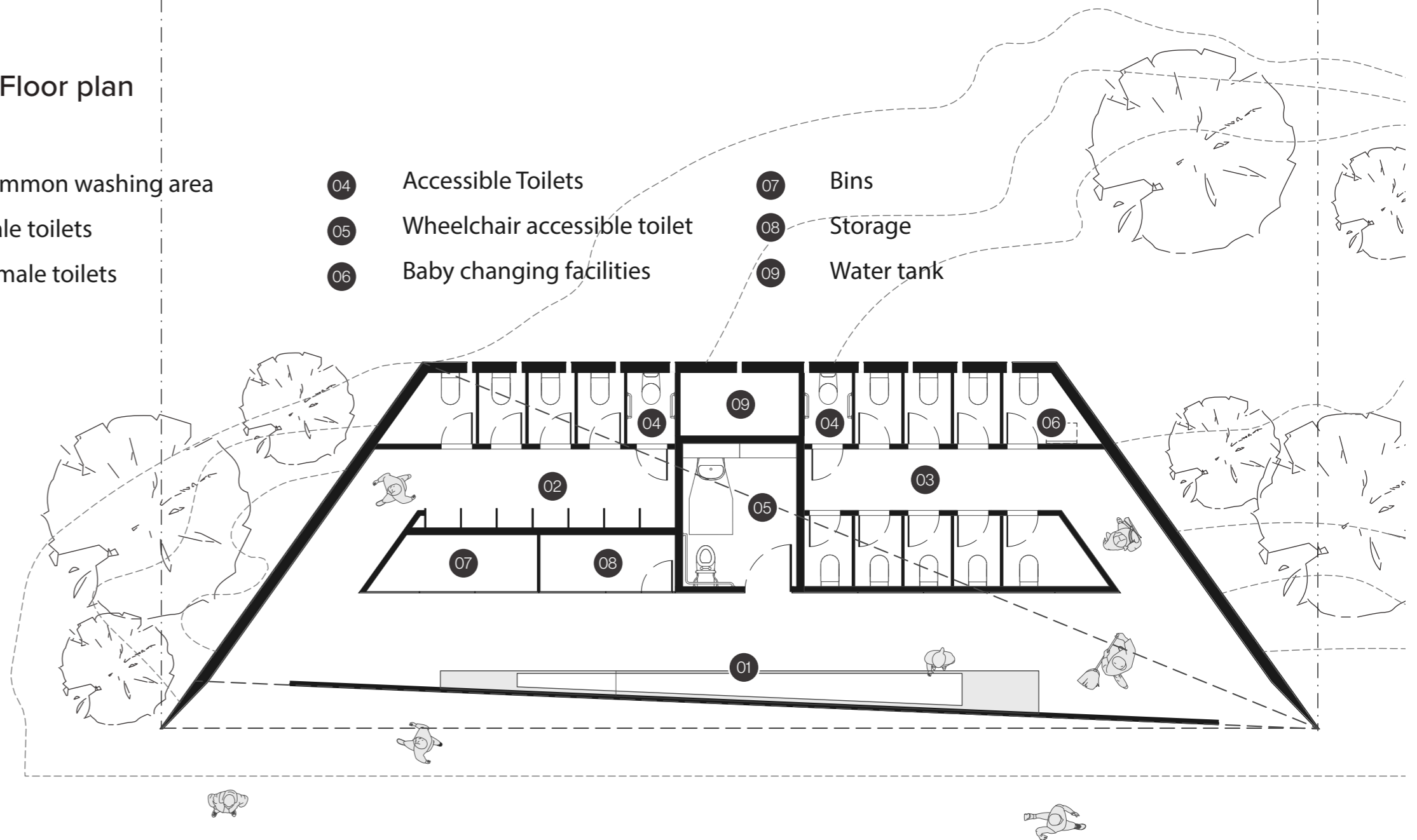


Toilets Floor plan 1:100

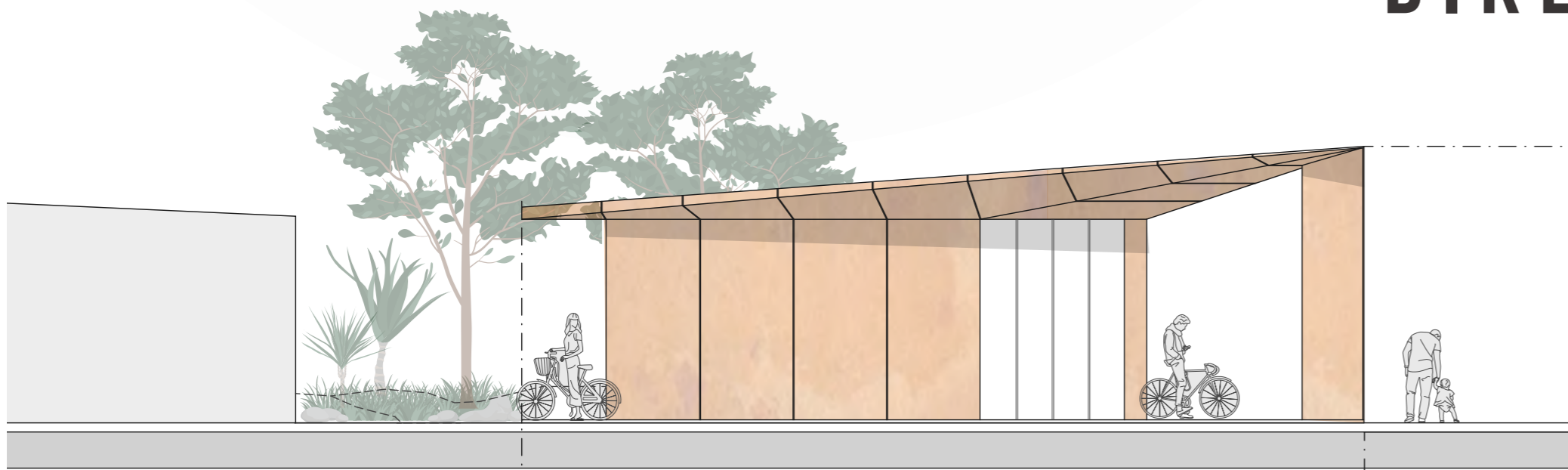
- 01 Common washing area
- 02 Male toilets
- 03 Female toilets

- 04 Accessible Toilets
- 05 Wheelchair accessible toilet
- 06 Baby changing facilities

- 07 Bins
- 08 Storage
- 09 Water tank



BIKE KIOSK



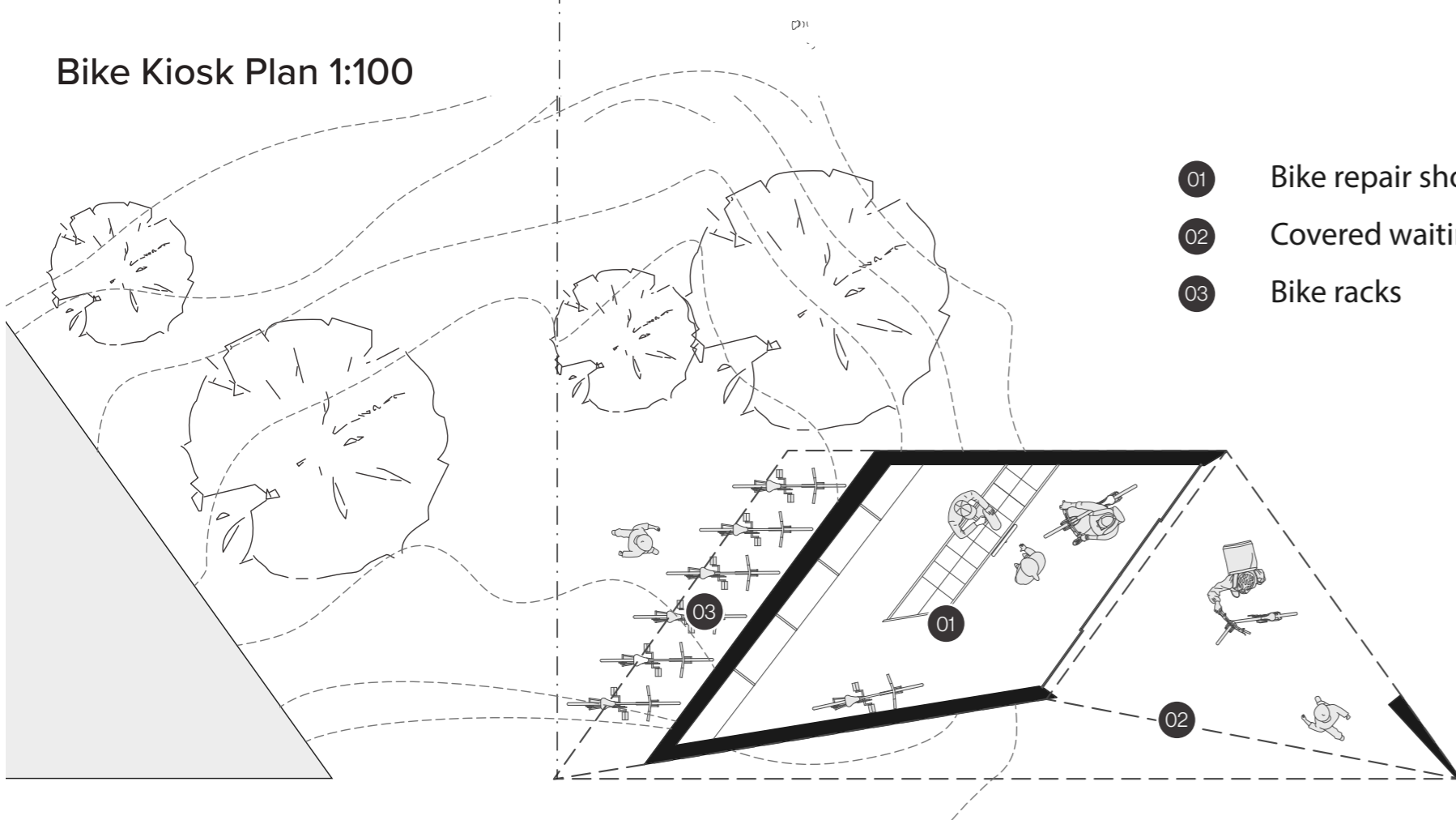
Bike Kiosk Elevation 1:100



Bike Kiosk Section 1:100

Bike Kiosk Plan 1:100

- 01 Bike repair shop
- 02 Covered waiting area
- 03 Bike racks



Concept Sketch



East West Elevation 1:400



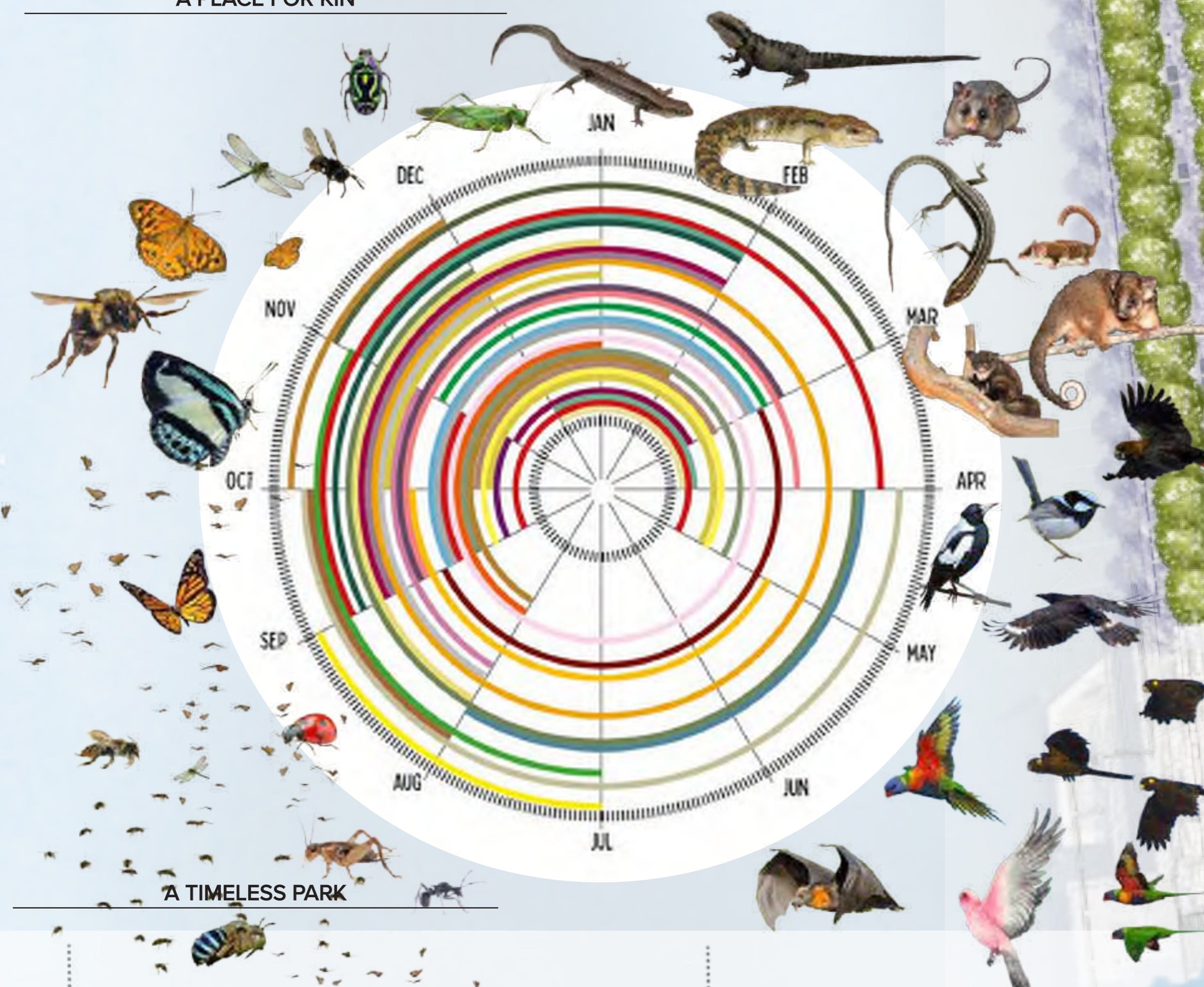
PLANTING PLAN - TREES

This park is a gallery of native trees that showcase the elements of Country. They sit thoughtfully within the landscape elevating the park design and enhancing the park experience for visitors. Trees not only provide amenity for park visitors, they importantly provide habitat for our non human kin, ensuring bio-diverse landscape for insects, birds, amphibians and other endemic species.

TREE SUCCESSION PLANTING FOR AN EVOLVING PARK



A PLACE FOR KIN



A TIMELESS PARK



PLANTING PLAN - UNDERSTOREY

The landscape beneath the canopy provides a vast array of experiences for people within the park as well as habitat for non human kin to thrive. Endemic and native plant mixes provide seasonal flourishes throughout the year whilst the foliage creates a multi-textural understory of silvers and luscious greens.

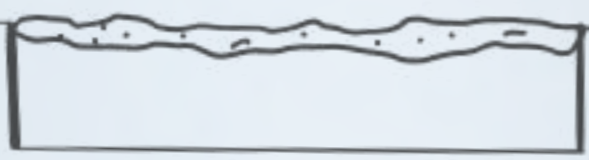
ON SITE SOIL CREATION

Before construction



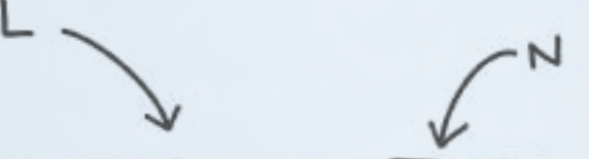
1. Create an on-site food waste depository for composting for surrounding residents.

During construction



2. Organic matter created through composting process

Planting Bed Setout



3. Injection of Nitrogen and Lime with organic matter

Pre-planting



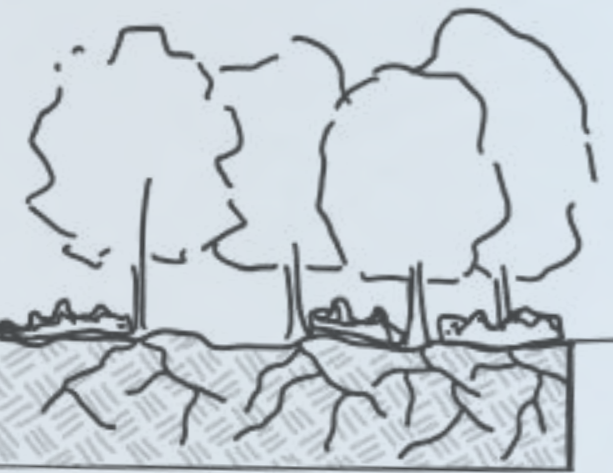
4. Planting nitrogen fixing plant species to further improve soil quality

Planting

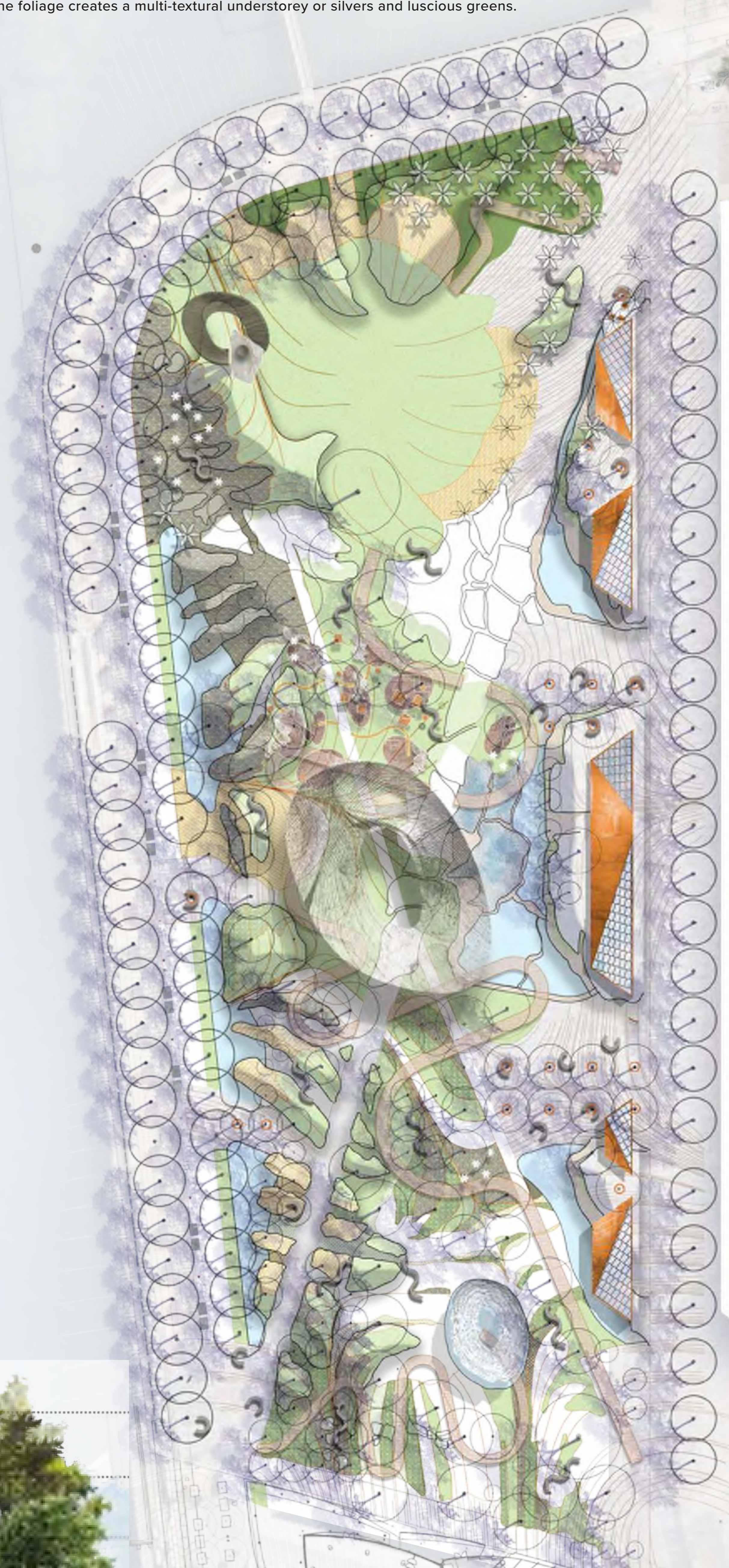


5. Supporting the decomposers to break down dead organic matter and release nutrients

Establishment



6. Plants establish successfully in healthy regenerated soil



100



1:400
1 5 10 25

PLANT SCHEDULE

PRODUCTIVE / MEDICINAL LANDSCAPE



PRODUCTIVE / MEDICINAL LANDSCAPE

| | | | |
|---------------------------|--------------------|-----------|--|
| Antidesma erostre | Wild Currant | 3 x 2 | Leave are used to bathe sores and boils |
| Carpobrotus glaucescens | Pig Face | 0.2 x 1 | The juice of leaves applied to insect bites, burns and scalds. Also used as a gargle for sore throats |
| Cissus antarctica | Kangaroo vine | 3 x 5 | Fruit was used as a gargle for sore throats. Tuber was also eaten to relieve stomach pain. |
| Clematis aristata | Old mans beard | 2 x 2 | The fragrant leaves are boiled with water and inhaled to relieve colds, headaches and fevers. Gum can be applied directly to sores and abrasions |
| Cymbopogon obtectus | Poa grass | 1 x 1.5 | The leaves are chopped and boiled in water. The yellow-green liquid is drunk to reduce cough and cold symptoms. The liquid can also be used as a liniment for sore muscles or headaches, and as an antiseptic to treat sores. The leaves can be rubbed into a ball and placed in the nostrils to clear congestion. The roots can be crushed and liquid poured into the ear to relieve earache. |
| Dianella caerulea | Flax lily | 1 x 0.5 | Fruit used to treat those suffering from sea ulcers |
| Dodonaea viscosa | Hop Bush | 2 x 2 | The juice of the root was applied for toothache and cuts. The chewed leaf and juice were put on stonefish and stingray stings and bound up for four or five days |
| Eremophila maculata | Emu bush | 1 x 1 | Leaves are applied directly to body to treat chest pain |
| Leptospermum petersonii | lemon tea tree | 7 x 5 | The leaves were gathered from the wild for use as a tea and to extract an essential oil, with both having antibacterial properties. |
| Lomandra longifolia | Mat rush | 0.4 x 1 | Roots were crushed to relieve the pain of bites from hairy grubs and ants. |
| Mentha australis | River mint | 0.7 x 1 | A leaf decoction is used for the relief of coughs and colds. The leaves can also be crushed and smelt to aid in the treatment of headache. |
| Prostanthera sp. | Bush mint | 0.3 x 0.3 | The leaves are boiled in water to produce a warm decoction, which can be sweetened with honey or sugar. The liquid is taken to relieve colds, nasal congestion, coughs, various aches and pains and to invigorate the body. |
| Scaevola spinescens | Maroon bush | 1 x 1.5 | The roots were also infused in water and taken to help with digestive pain. The berries themselves are edible, tasting best when purple-black in colour (ripe). |
| Smilax glyciphylla | Sarsparilla | 2 x 3 | Leaves and stems are boiled in water which is then drunk to relieve stomach pains, the decoction is also helpful in the treatment of colds, coughs, bronchitis, arthritis, rheumatism and diabetes. |
| Swainsona galegifolia | Indigo plant | 0.5 x 3 | A warm poultice of crushed leaves, stems and roots is applied to bruises and swelling. |
| Viola hederacea | Native violet | 0.1 x 0.8 | Leaves and flowers were eaten as a preventative against arthritis |
| Zieria smithii | Sandfly zieria | 2 x 1 | Leaves crushed and inhaled to relieve the symptoms of headache. |
| Atriplex nummularia | Old mans saltbush | 3 x 2 | Edible leaves |
| Austromyrtus dulcis | Midjin berry | 1 x 1.5 | Edible fruits |
| Backhousia angustifolia | Curry myrtle | 3 x 2 | Edible leaves |
| Backhousia citriodora | Lemon myrtle | 3 x 2 | Edible leaves |
| Correa alba | White correa | 1.5 x 1.5 | Edible leaves |
| Cymbopogon ambiguus | Native lemon grass | 1.5 x 1.5 | Edible leaves |
| Dianella caerulea | Blue flax lily | 0.5 x 0.5 | Edible fruits and roots |
| Enchylaena tormentosa | Ruby Saltbush | 1 x 1 | Edible fruits |
| Eustrephus latifolius | Wombat berry | 1 x 5 | Edible fruits |
| Kunzea pomifera | muntries | 0.5 x 3 | Edible fruits |
| Lomandra longifolia | Mat rush | 1.2 x 1 | Seeds grinded into flour for bread. Leaves used for weaving |
| Microceris lanceolata | Yam Daisy | 0.4 x 0.2 | Edible roasted roots |
| Persoonia linearis | Geebung | 2 x 2 | Edible fruits |
| Prostanthera incisa | Native Thyme | 1 x 1 | Edible leaves |
| Prostanthera rotundifolia | Native oregano | 1 x 1 | Edible leaves |
| Rhagodia candolleana | Seaberry saltbush | 1 x 1.5 | Edible fruits |
| Rubus parvifolius | Native raspberry | 1 x 1 | Edible fruits |

WILDFLOWER MEADOW



WILDFLOWER MEADOW

| | | | |
|---------------------------|--------------------------|-----------|--|
| Actinotus helianthi | Flannel Flower | 1.2 x 0.5 | Bees, butterflies and other insects |
| Actinotus minor | Lesser flannel flower | 0.5 x 0.2 | Bees, butterflies and other insects |
| Ajuga australis | Australian Bugle | 0.5 x 3 | Insects |
| Anigozanthos flavidus | Kangaroo Paw | 2 x 1 | Nectar eating birds |
| Arthropodium milleflorum | Vanilla Lily | 1 x 0.4 | Bees, butterflies and other insects |
| Arthropodium strictum | Chocolate Lily | 0.5 x 0.3 | Bees and insects |
| Chrysocephalum apiculatum | Yellow buttons | 0.3 x 0.5 | Bees, butterflies and other insects |
| Correa alba | White correa | 1 x 1 | Nectar eating birds and other insects |
| Dampiera stricta | Blue dampiera | 0.4 x 0.3 | butterflies |
| Eriostemon australasius | Wax flower | 2 x 1 | Bees |
| Gompholobium grandiflorum | Glory pea | 1 x 1 | Bees |
| Grevillea laurifolia | Royal mantle | 0.25 x 6 | Bees, butterflies and other insects |
| Grevillea linearifolia | Linear-leaf grevillea | 1.2 x 1 | Nectar eating birds and other insects |
| Hardenbergia violacea | Purple coral pea | 15 x 1 | |
| Isopogon anethifolius | Drumsticks | 0.7 x 0.8 | Bees, nectar eating birds, butterflies and other insects |
| Isotoma axillaris | Pink Star Creeper | 0.3 x 0.3 | Bees, butterflies and other insects |
| Lechenaultia biloba | Blue lechenaultia | 0.3 x 0.5 | Bees, butterflies and other insects |
| Myoporum parvifolium | Creeping boobialla | 0.1 x 0.8 | Bees |
| Patersonia sericea | Native iris | 0.6 x 0.4 | Iris skipper butterfly |
| Philothea salsolifolia | Star wonder | 2 x 1 | Bees and butterflies |
| Rhodanthe chlorocephala | Everlasting daisy | 0.6 x 0.4 | Bees and other pollinators |
| Scaevola aemula | Fan flower | 0.5 x 1 | Butterflies |
| Wahlenbergia stricta | Bluebell | 0.4 x 0.4 | Butterflies |
| Xerochrysum bracteatum | Paper daisy | 0.5 x 0.5 | Butterflies and other insects |
| Xerochrysum viscosum | Sticky everlasting daisy | 0.5 x 0.4 | Bees, butterflies and other insects |

WETLAND / RAIN FOREST



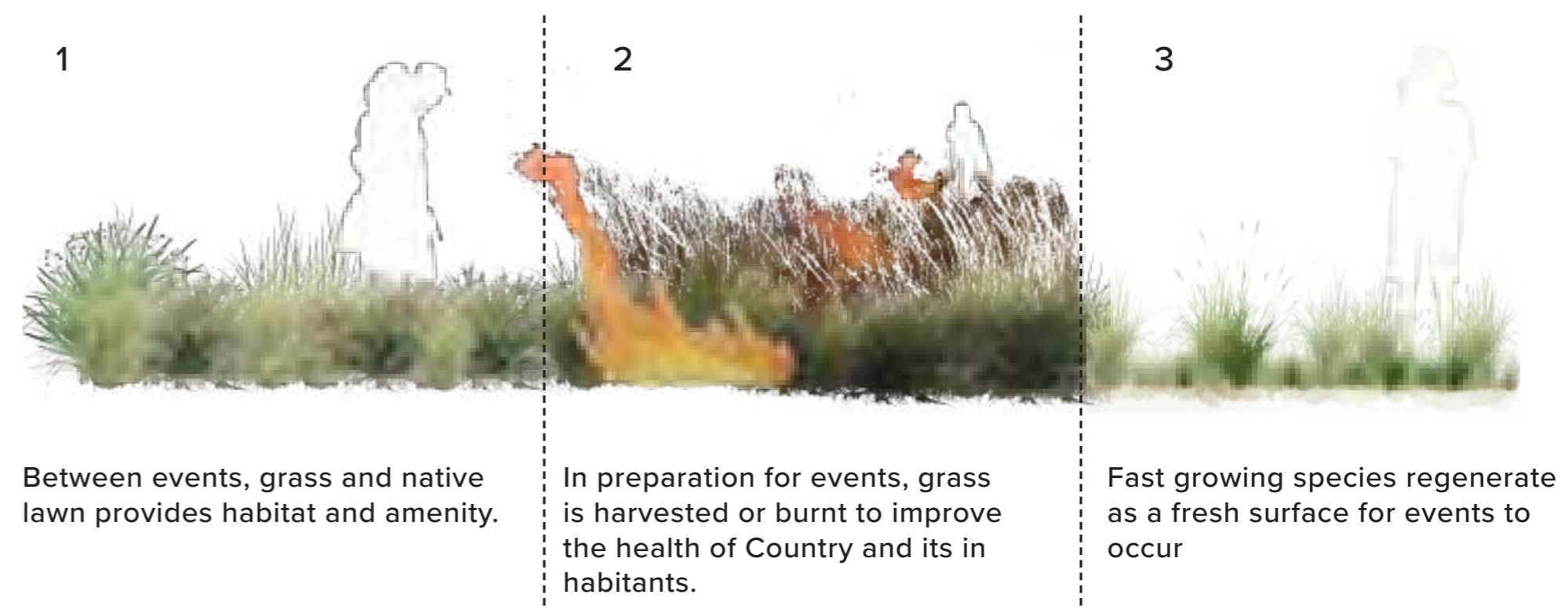
WETLAND / RAINFOREST

| | | | |
|----------------------------|-------------------------|------------|-----------------------|
| Acacia longifolia | Sydney Golden Wattle | 2.5 x 2 | |
| Adiantum aethiopicum | Maidenhair fern | 0.45 x 0.6 | |
| Alpinia caerulea | Native ginger | 2.5 x 2 | |
| Asplenium australasicum | Birds nest fern | 6 x 3 | |
| Backhousia myrtifolia | Cinnamon myrtle | 3 x 2 | |
| Banksia robur | Swamp banksia | 1.5 x 1 | |
| Blechnum nudum | Fishbone fern | 0.6 x 0.6 | |
| Dianella caerulea | Flax lily | 1 x 0.5 | |
| Dichondra repens | Kidney Weed | 0.1 x 0.05 | |
| Dodonea triquetra | Hop Bush | 2 x 1 | |
| Gahnia sieberiana | Red fruit saw sedge | 1.5 x 2 | |
| Helmholtzia glaberrima | Stream lily | 2 x 1 | |
| Juncus usitatus | Common rush | 1.2 x 0.5 | |
| Proteaceae telopea | Waratah | 3 x 2 | |
| Viola hederacea | Native violet | 0.1 x 0.8 | |
| Carex appress | Tall sedge | 1 x 1 | Basin |
| Carex fascicularis | Tassel sedge | 1 x 0.75 | Basin |
| Cymbopogon refractus | Barbed wire grass | 1.2 x 1 | Basin |
| Cyperus polystachyos | Flat sedge | 0.7 x 0.5 | Basin |
| Daviesia ulicifolia | Gorse bitter pea shrub | 2 x 2 | Basin and batters |
| Dianella longifolia | Blueberry lily | 1.5 x 0.75 | Batters and landscape |
| Dianella revoluta | Blue flax lily | 1 x 1.5 | Basin |
| Dichelachne micrantha | Shorthair plume grass | 1 x 0.8 | Basin |
| Ficina nodosa | Knobby club rush | 1 x 0.8 | Basin |
| Gahnia filum | chaffy saw-sedge | 1.2 x 1 | Basin |
| Juncus kraussii | Sea rush | 1.2 x 1 | Basin |
| Juncus pallidus | Pale rush | 2 x 1 | Basin |
| Juncus usitatus | Common rush | 1.2 x 0.8 | Basin |
| Lachnagrostis billardierei | Sand wind grass | 0.6 x 0.5 | Basin |
| Lomandra filiformis | Wattle mat rush | 0.5 x 0.2 | Batters and landscape |
| Melaleuca erubescens | Pink honey myrtle shrub | 1 x 1 | Basin and batters |
| Microlaena stopides | Weeping grass | 0.3 x 0.5 | Batters and landscape |
| Pennisetum alopecuroides | Swamp foxtail grass | 1 x 1.2 | Basin and batters |
| Poa labillardieri | Tussock grass | 1 x 1 | Basin |

NATIVE GRASS MIX

Native Grass Maintenance

Cultural burning, developed by First Nations Australians to enhance the health of the land and its people. Is to be utilised as a commonplace maintenance method. It is not a spectacle, rather a Country derived method of regeneration and management.



Between events, grass and native lawn provides habitat and amenity.

In preparation for events, grass is harvested or burnt to improve the health of Country and its inhabitants.

Fast growing species regenerate as a fresh surface for events to occur

GRASSLAND

| | | | |
|--------------------------|---------------------|------------|---|
| Themeda australis | Kangaroo grass | 1.5 x 0.5 | Seeds were grinded to make flour for cooked damper |
| Rytidosperma caespitosum | Wallaby Grass | 0.9 x 0.5 | |
| Rytidosperma geniculatum | Oxley Wallaby Grass | 0.15 x 0.2 | |
| Poa labillardierei | Tussock grass | 1 x 1 | Used for weaving; basket making |
| Doryanthes excelsa | Gymea Lily | 2 x 2 | Stems were eaten, fibres from leaves used in making brushes and matting. Feature planting amongst grassland |

TREES

TREES

| | | | | |
|--|---------------------------------|------------------------|--|---|
| | Acacia decurrens | Black Wattle | Sky Country - Seasonal flowers and seeds | Birds, insects, butterflies, possums |
| | Angophora costata | Sydney Red gum | Deep Country - Root system following underground sandstone | Lorikeets, bees, possums, flying foxes |
| | Angophora floribunda | Rough barked apple | Deep Country - Root system following underground sandstone | Birds, bees and butterflies |
| | Banksia integrifolia | Coast banksia | Wind - Coastal plant being salt and wind tolerant | Honeyeaters |
| | Casuarina glauca | Swamp Oak | Wind Country - Calming sounds of the casuarina | Glossy Black Cockatoo |
| | Corymbia citriodora 'scentuous' | Lemon Scented gum | Wind Country - Scent carried by wind | Nectar-eating birds, butterflies, bees and insects |
| | Cyathea cooperi | Tree fern | Water Country - growing well in moist environments | |
| | Eucalyptus piperita | Sydney peppermint | Wind Country - Scent carried by wind | Flying foxes, birds and gliders (nectar feeding) |
| | Ficus rubiginosa | Port Jackson fig | Sky Country - providing great shade | Birds (including endangered coxens fig parrot), flying foxes, fig wasps |
| | Livistona australis | Cabbage tree palm | Sky Country - High canopy provides expansive views out | Birds |
| | Melaleuca quinquenervia | Broad-leaved paperbark | Water Country - Thrives in water environments | Birds and bees |
| | Xanthorrhoea johnsonii | Grass tree | Deep Country - growing and thriving in sandstone Country | Birds, bees and insects |

HARDWORKS PLAN

Materials selection has consciously considered a connection to Country and how hardscape materials can enhance the park design and narrative. Materials from Country should be sourced rather than seeking imported alternatives. Materials selection must also support the notion of regeneration and sustainability. Where possible materials are to be recycled, re-purposed or have a neutral carbon footprint. Permeable surfaces will be promoted over hardscape. Materials selection will also strive to mitigate the urban heat island effect across this site.



Selection: Sunset Gold Granite
Details: 80mm thk
Supplier: Sam the Paving Man



Selection: Sandstone Flagstones
Supplier: Gosford Quarry



Selection: Natural Sandstone
Details: Random sized logs and boulders
Supplier: Gosford Quarry



Selection: Heelsafe expanded walkway mesh
Supplier: Total Steel



Selection: Envisia "Green Concrete" insitu Paving
Supplier: Boral



Selection: Crushed Sandstone, stabilised.
Supplier: Sydney Landscape Supplies



Selection: Decomposed Granite - Red, Stabilised.
Supplier: Sydney Landscape Supplies



Selection: Sunset Gold Granite laser cut to design.
Details: 80mm thk



Selection: Water Misters
Supplier: Mistafog



Water Sensitive Urban Design Pond



Selection: Circular Tree Grate
Supplier: Commercial Systems Australia



Selection: Custom Bench Seating

