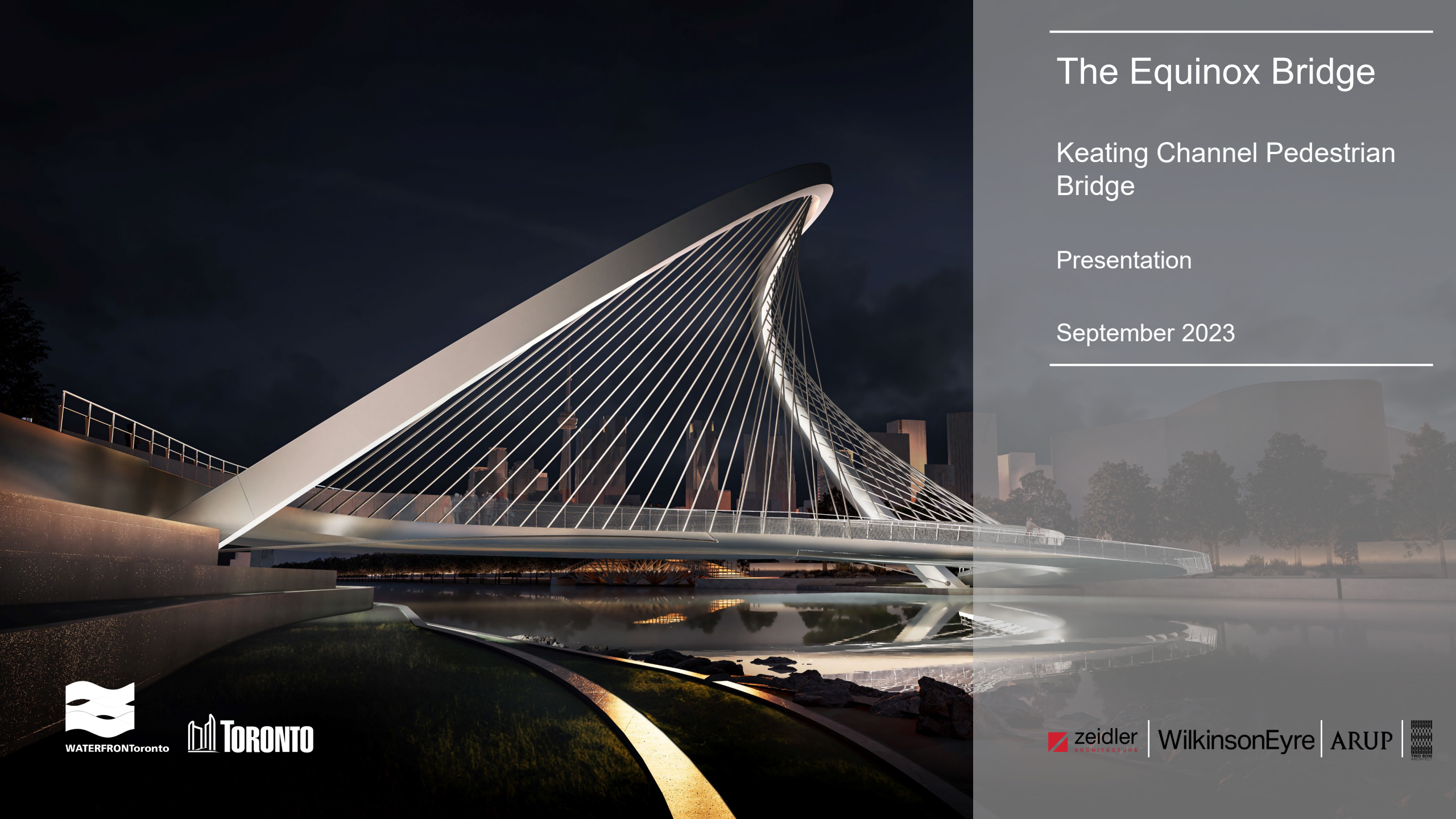


# The Equinox Bridge

## Keating Channel Pedestrian Bridge

Presentation

September 2023

WATERFRONTToronto

TORONTO

zeidler ARCHITECTURE | WilkinsonEyre | ARUP | TWO ROW ARCHITECT

# Land Acknowledgement

*“Waterfront Toronto acknowledges that the land upon which we are undertaking our revitalization efforts, and where the designs in this procurement will be realized, is part of the traditional territory of the Mississaugas of the Credit First Nation and that Toronto is covered by Treaty 13 with the Mississaugas of the Credit First Nation (MCFN).*

*In addition, Waterfront Toronto acknowledges that Toronto has historically been a gathering place for many Indigenous people, including the Mississaugas of the Credit, the Anishinaabe, the Chippewa, the Haudenosaunee and the Wendat peoples, and is home to many First Nations, Inuit and Métis peoples today.”*

*From Design Brief*

# Team

| | |
|---|---|
| zeidler ARCHITECTURE | Prime Proponent |
| WilkinsonEyre | Design Lead |
| ARUP | Engineering |
| PLANT | Plant |
| TWO ROW ARCHITECT | Indigenous Consultant/architect |
| BTY | Cost/QS |

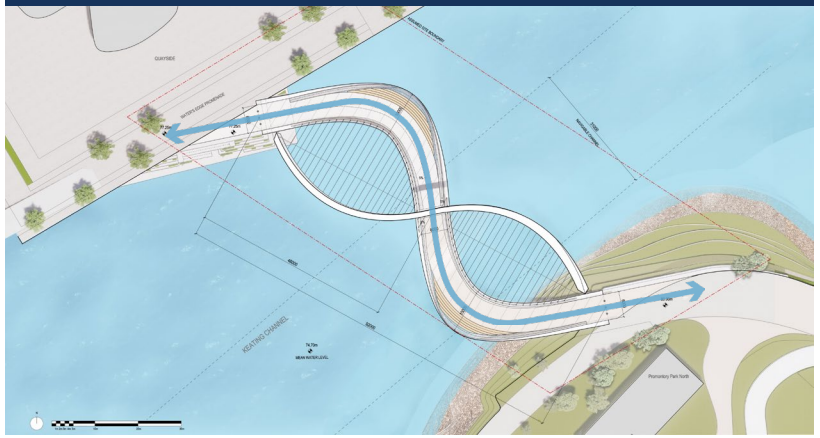
Dominic Bettison
WilkinsonEyre

Meighan King Wall
Two Row

# Six Project Goals

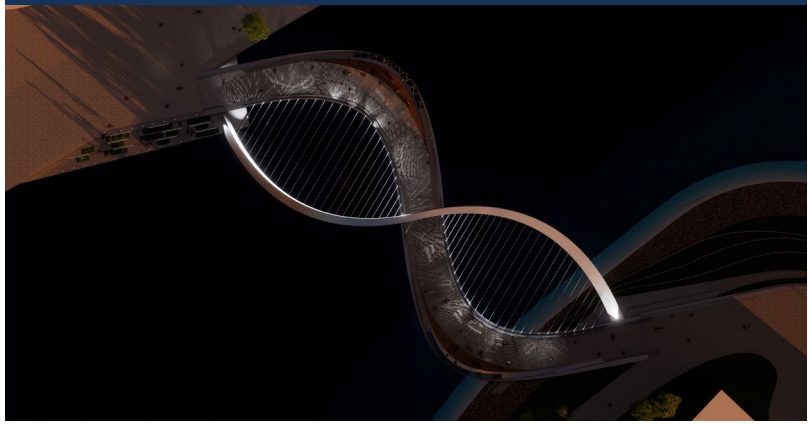
## Beautiful and Distinctive Gateway to the Waterfront

## Connecting the City and Villiers Island



## Incorporate a Living Landscape

## Create with Indigenous Voice and Agency



## Embody Sustainable Strategies and Innovation

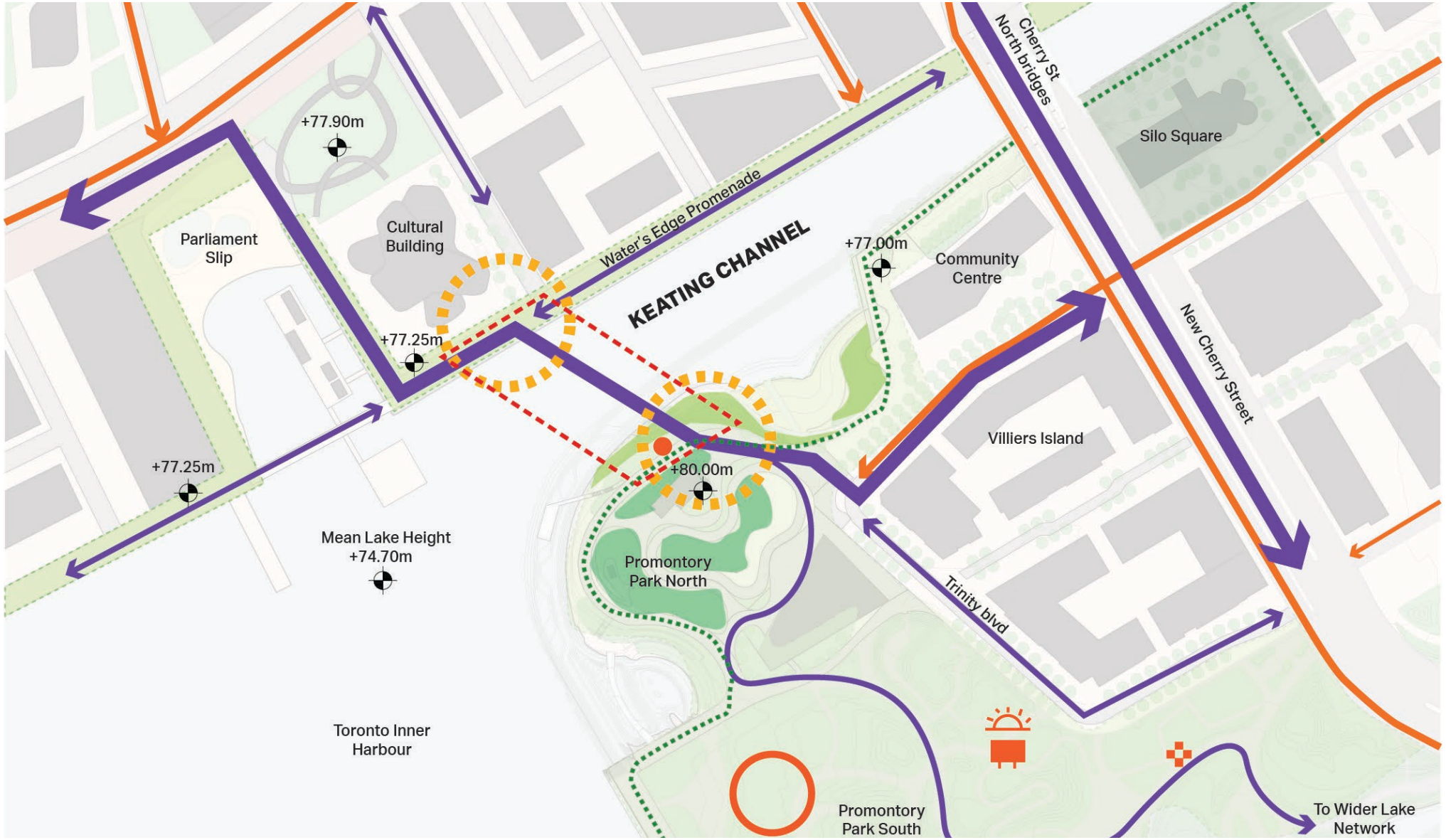
## Create a Place for All People

# Site Analysis

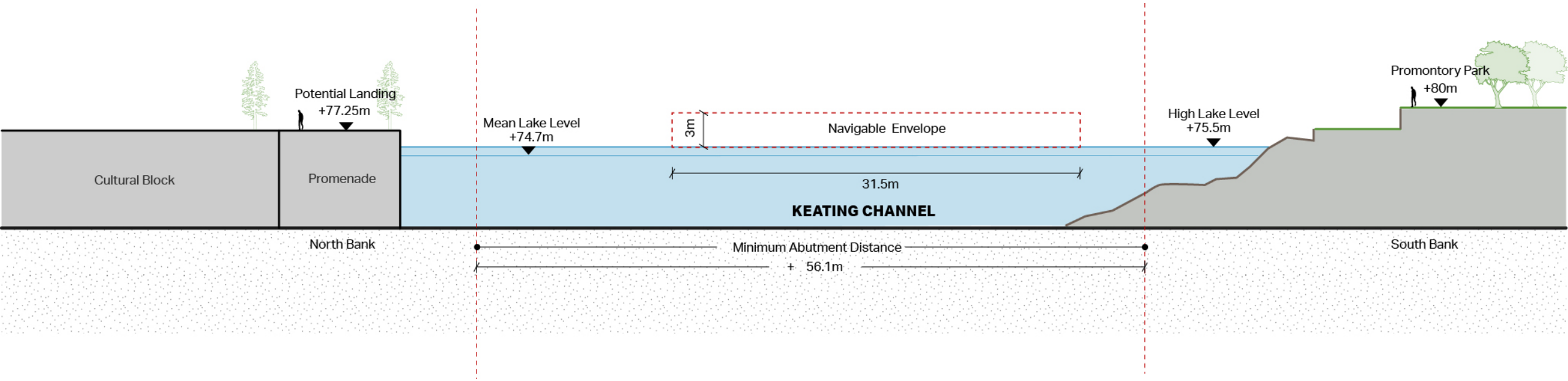
Existing naturalised site condition along the south bank.

Existing site condition along the north bank with concrete slab.

# Connectivity

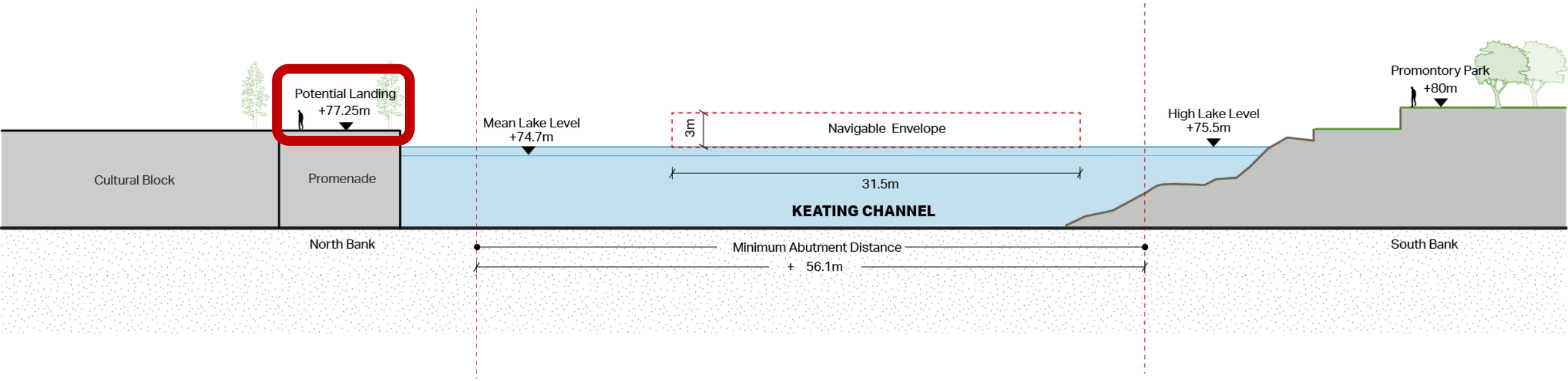


# Site Analysis



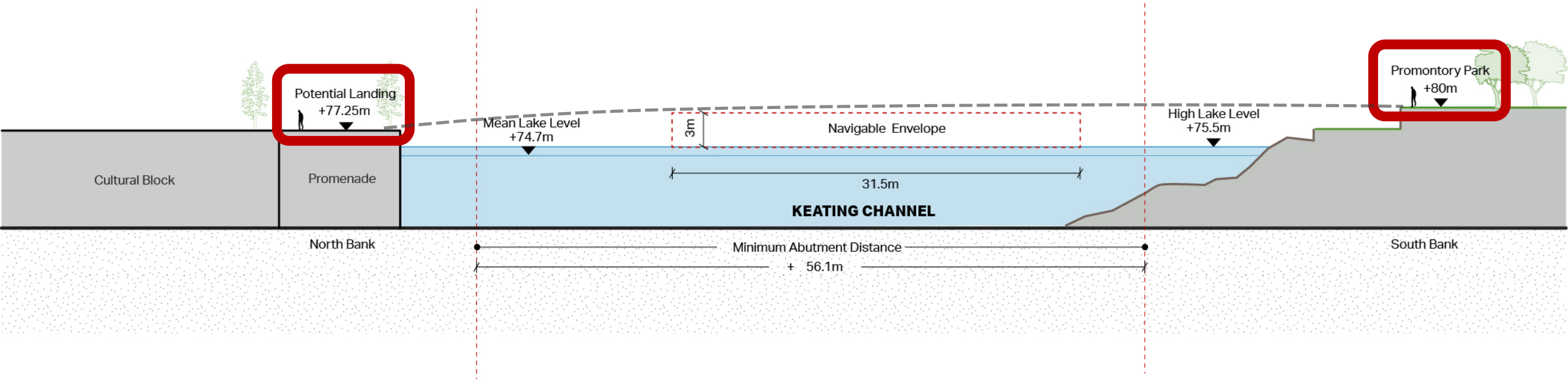

Section through Keating Channel with key site constraints

# Site Analysis



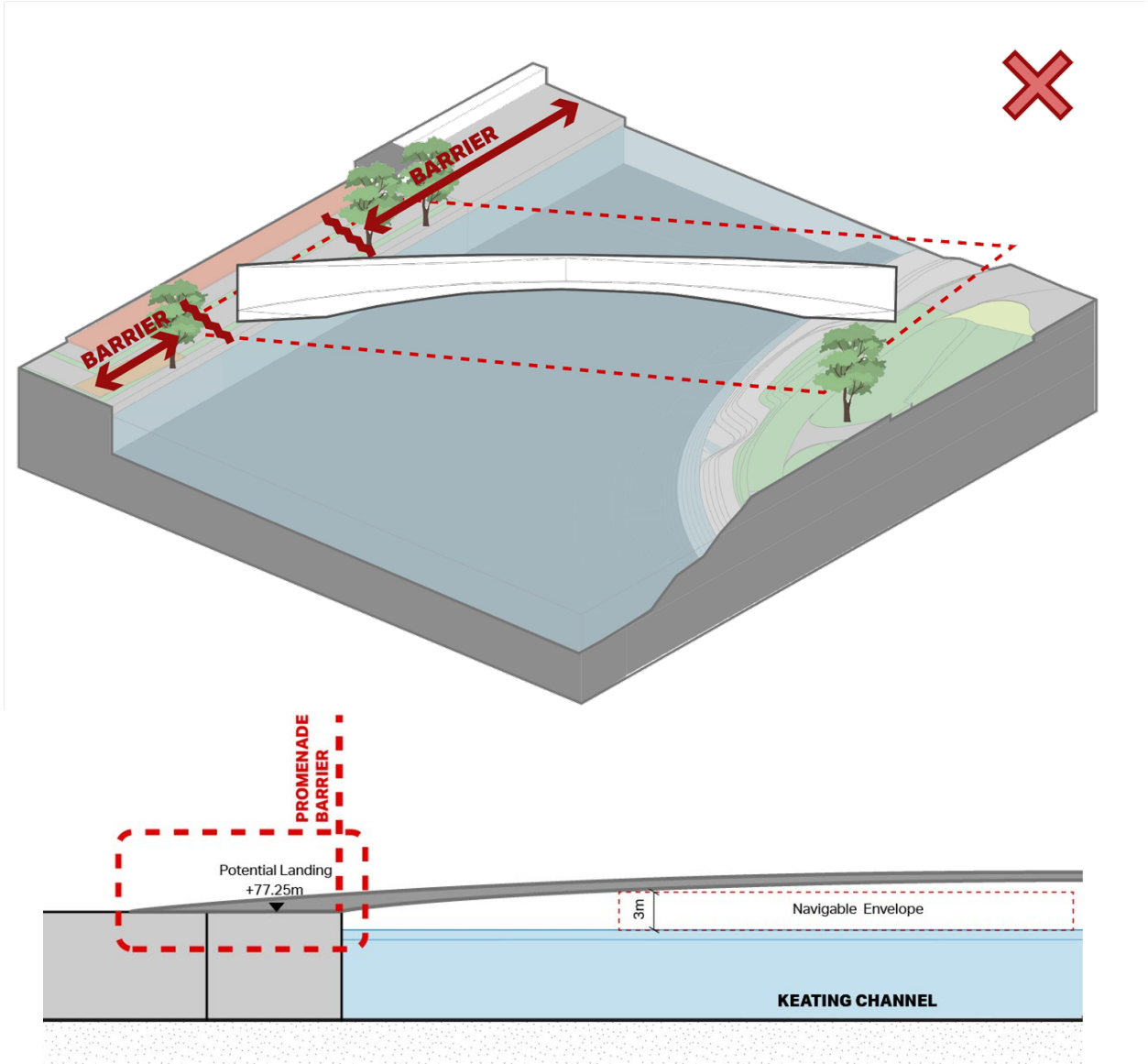

Section through Keating Channel with key site constraints

# Site Analysis



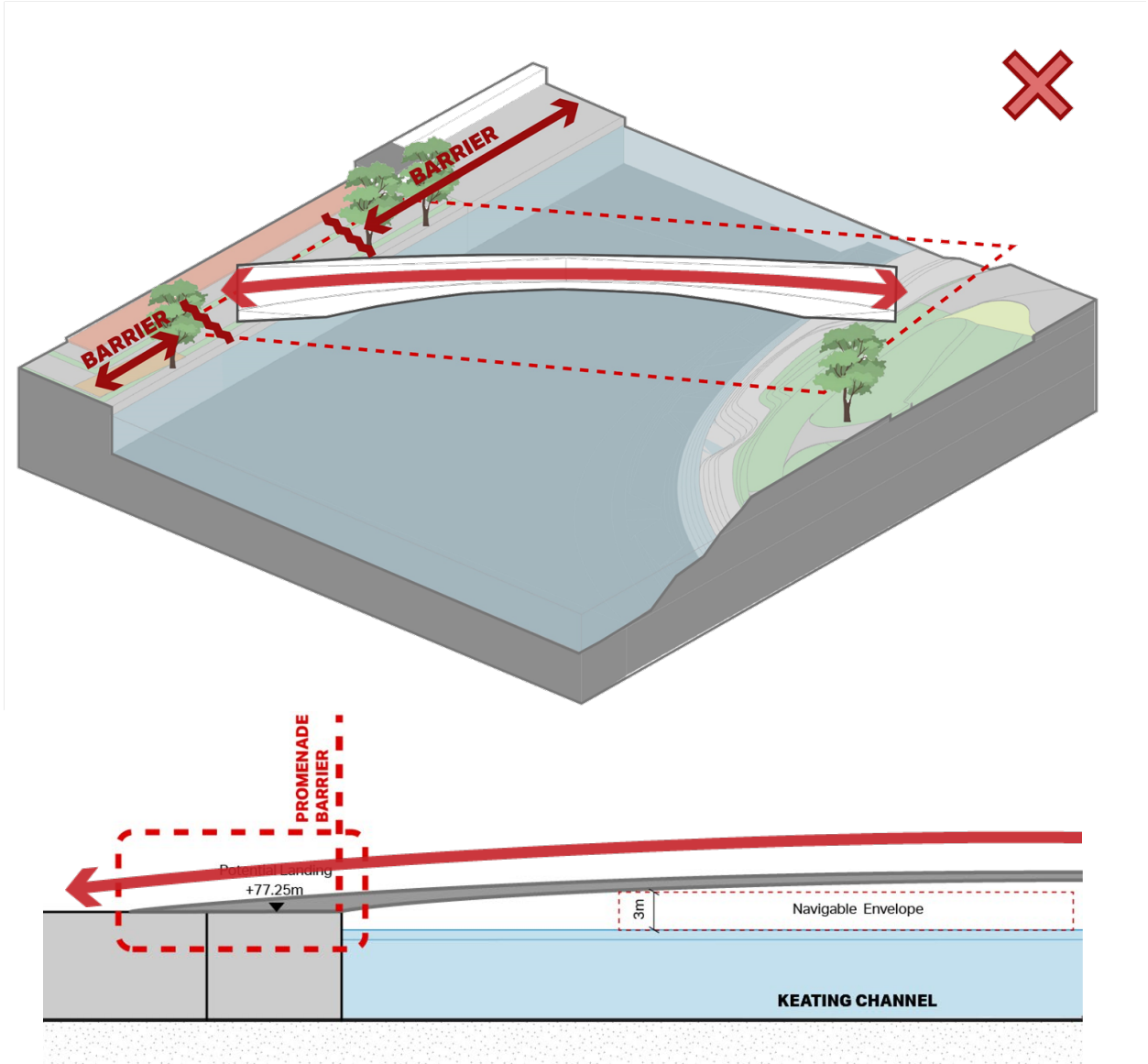

Section through Keating Channel with key site constraints

# Concept Design Studies




Straight Bridge with Ramped Deck

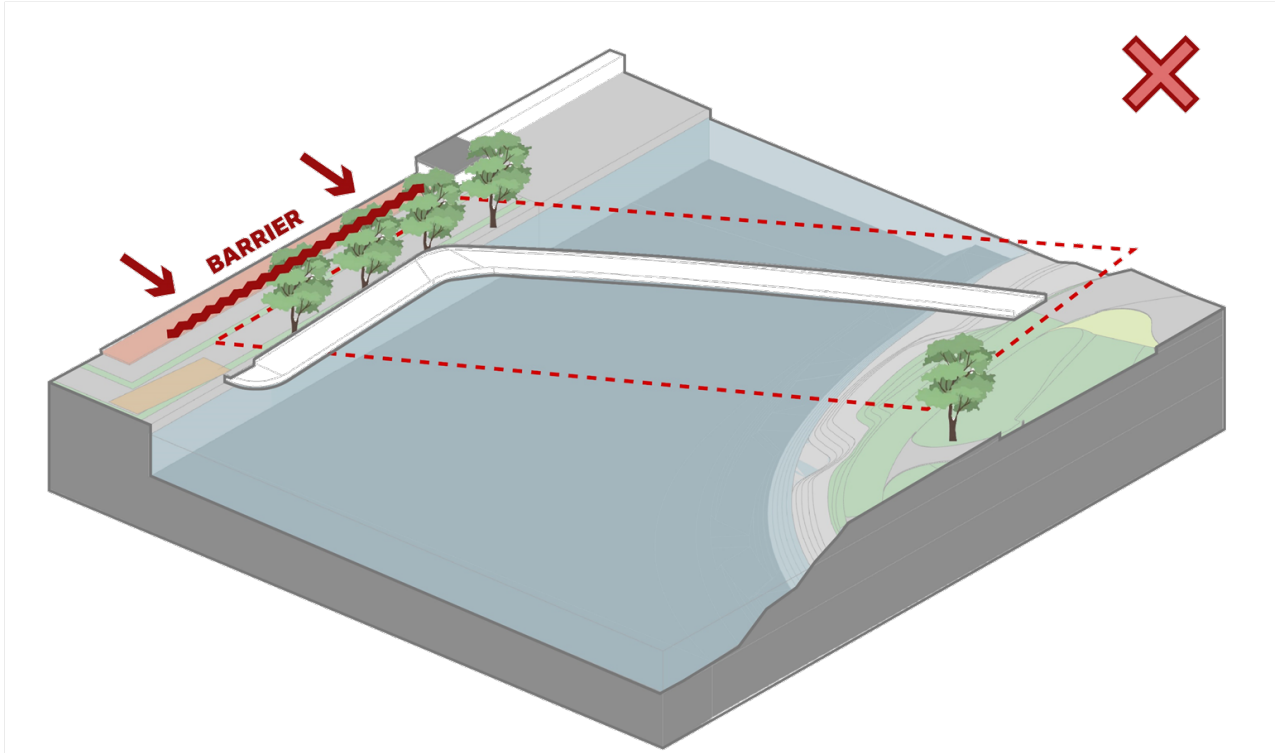
# Concept Design Studies




## Straight Bridge with Ramped Deck

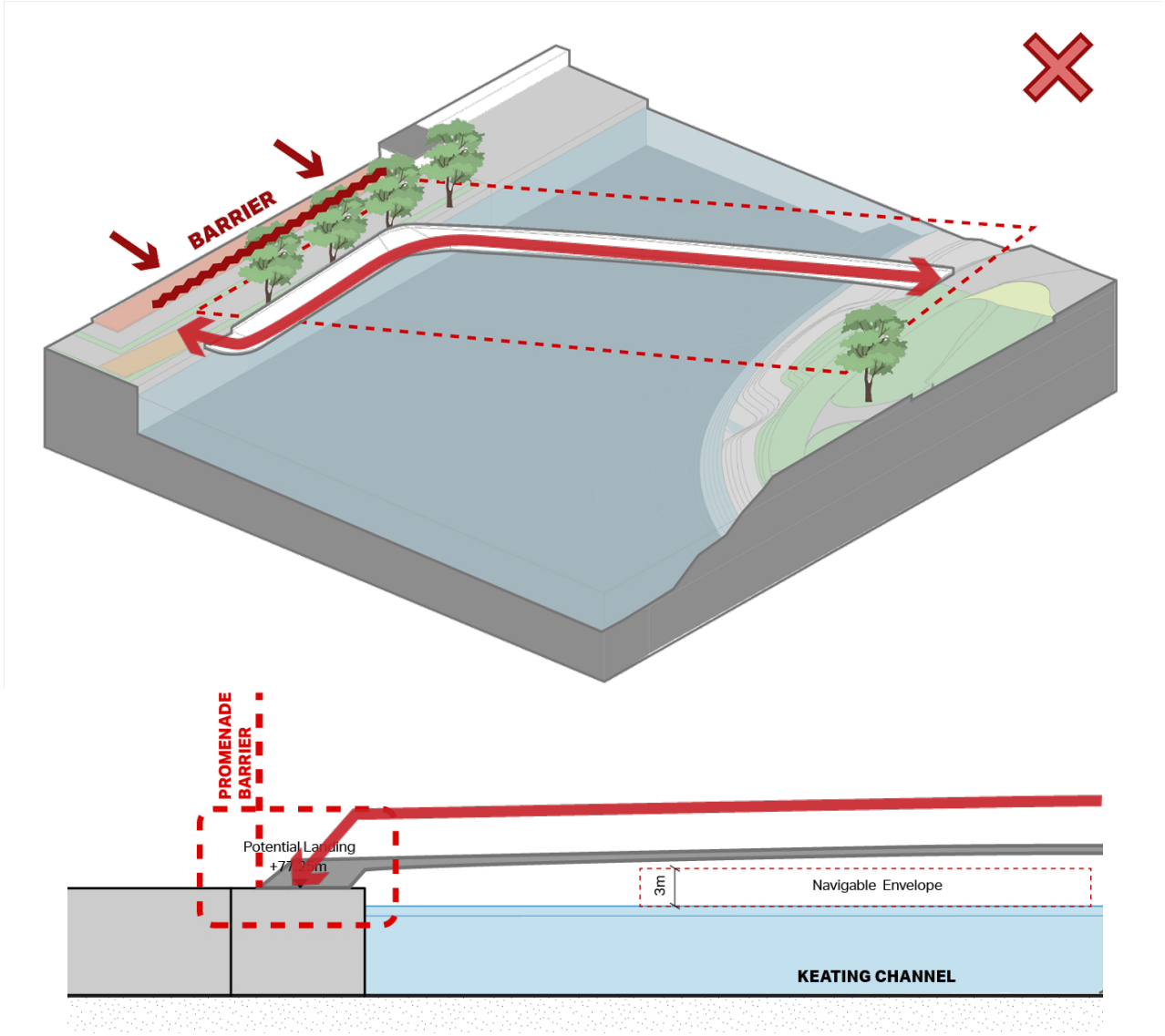
- Diagonal bridge alignment required to minimise impact on quayside
- Creates physical east-west barrier along quayside
- Significant ramp run off on quay edge to resolve levels

# Concept Design Studies




Straight Bridge with Ramping on Quayside

# Concept Design Studies



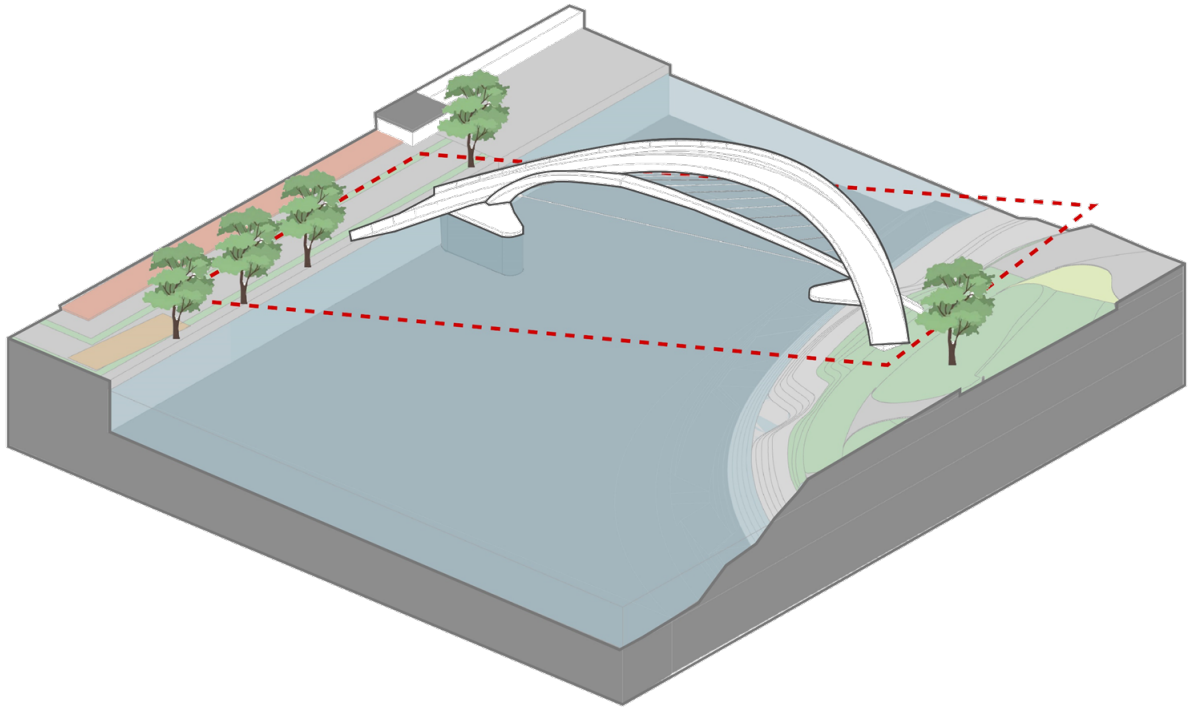

## Straight Bridge with Ramping on Quayside

+ Bridge alignment less critical

- Creates physical north-south barrier to water along quayside

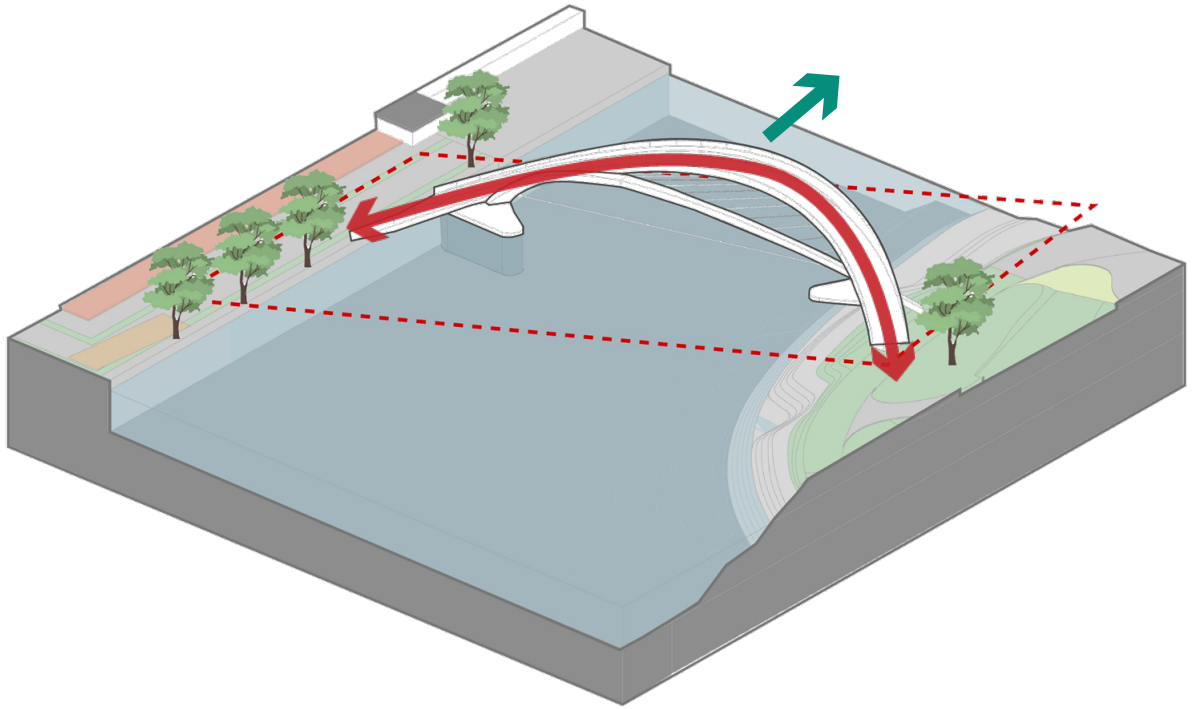
- Significant ramp run off parallel to quay edge to resolve levels

# Concept Design Studies



Curved Deck and Arch

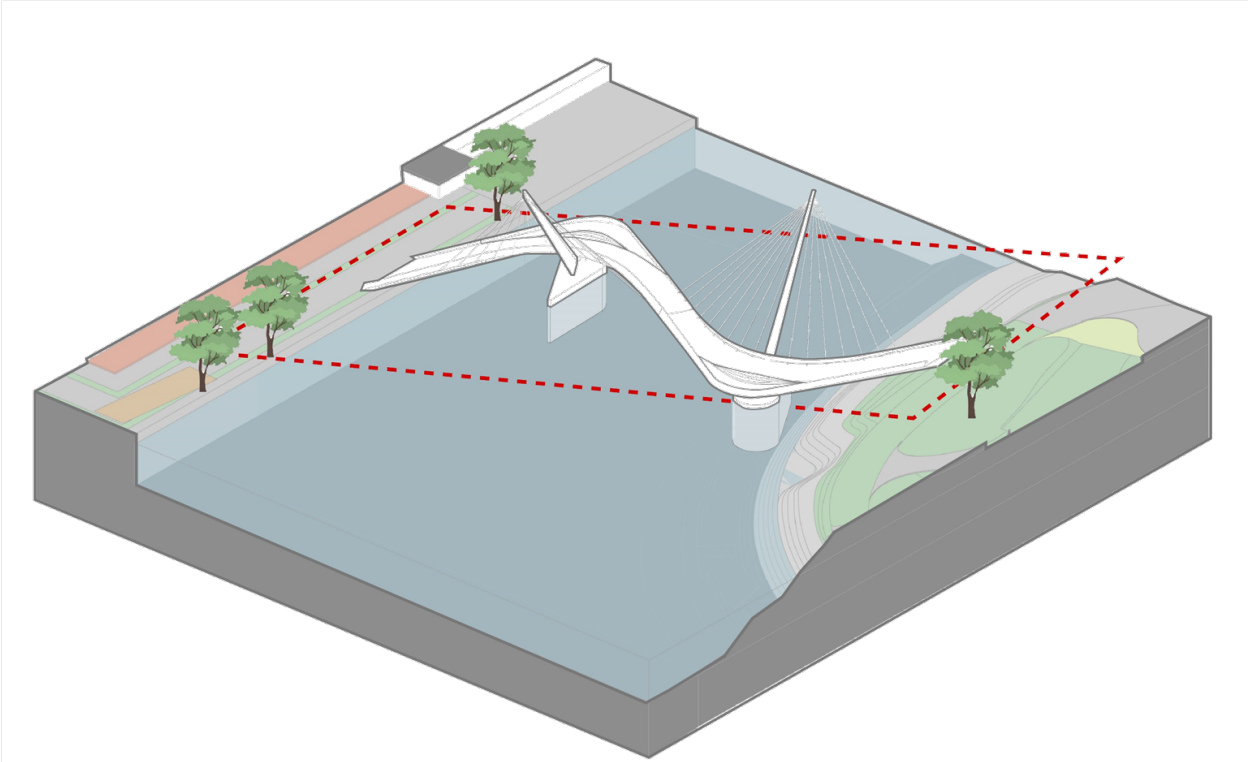
# Concept Design Studies



## Curved Deck and Arch

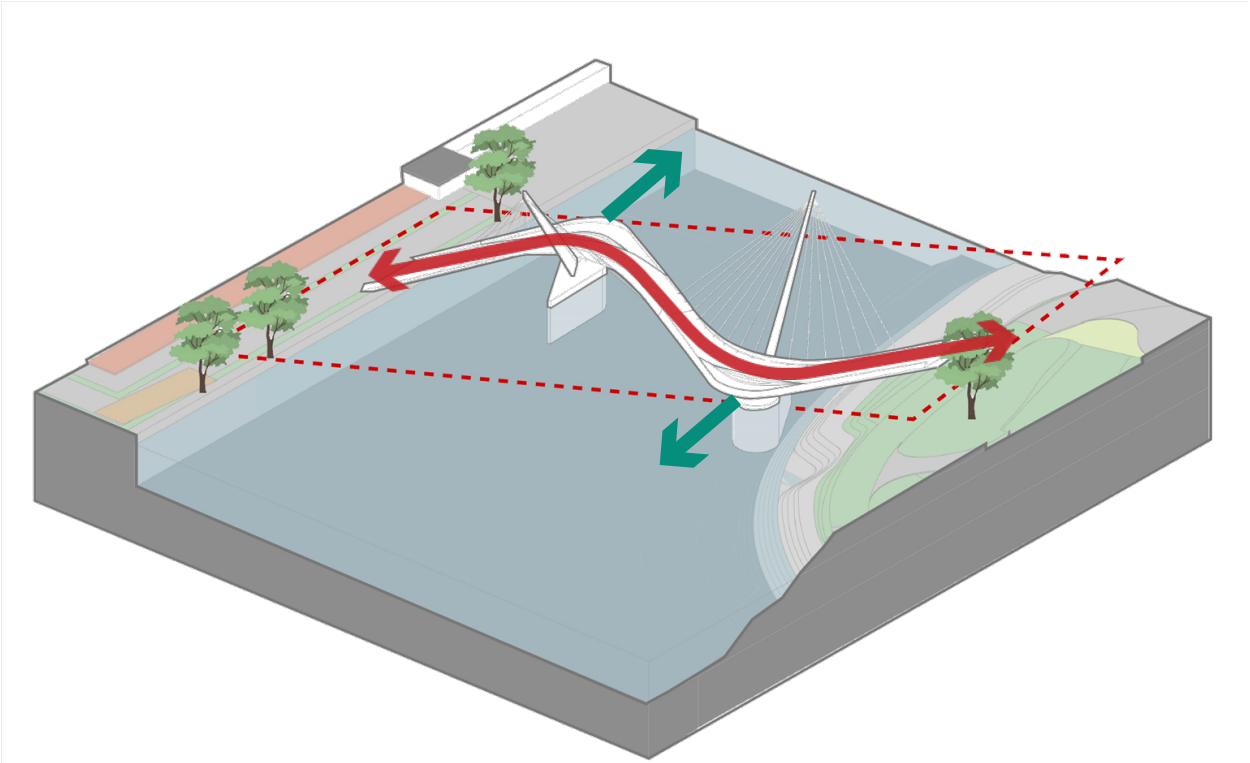
+ No barriers at Quayside promenade
+ Curving deck length resolves levels at Quayside
+ Structurally efficient and cost effective to build
- Deck projects inland, views are not as good

# Concept Design Studies



S-Deck and Masts

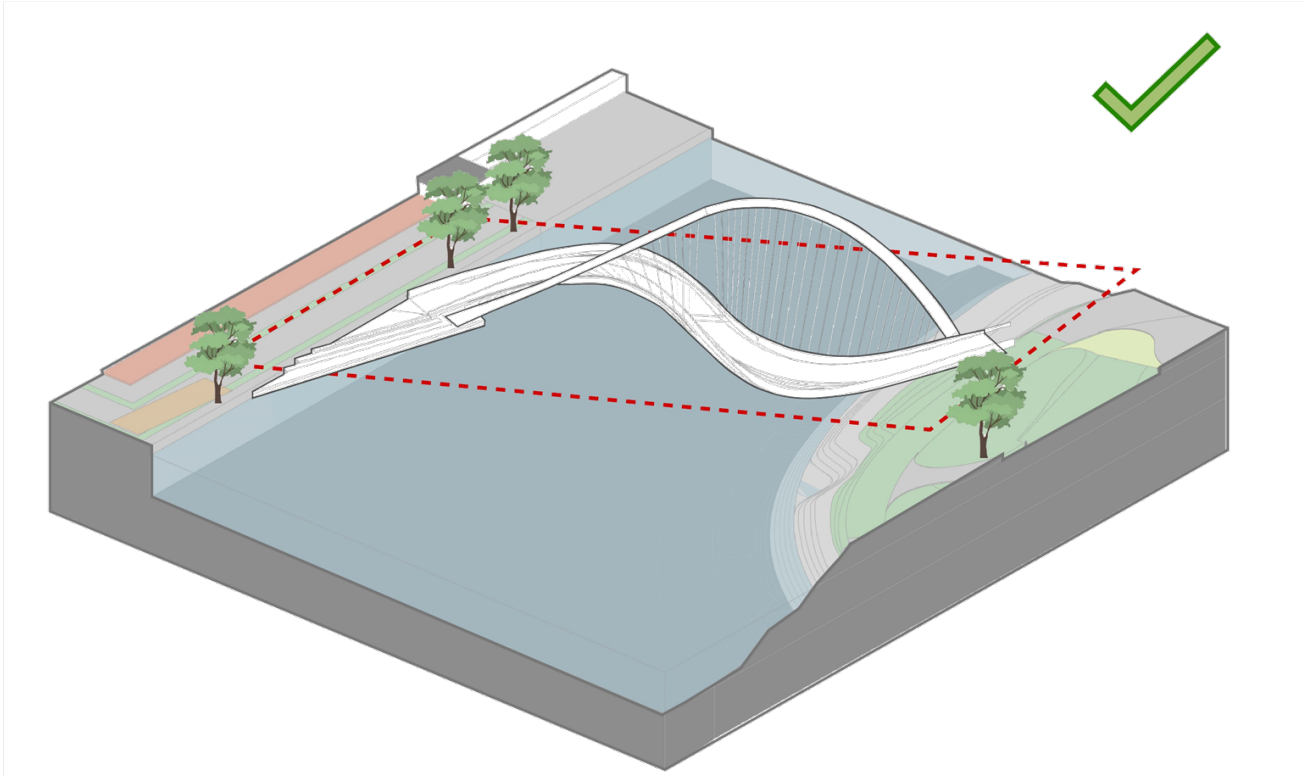
# Concept Design Studies



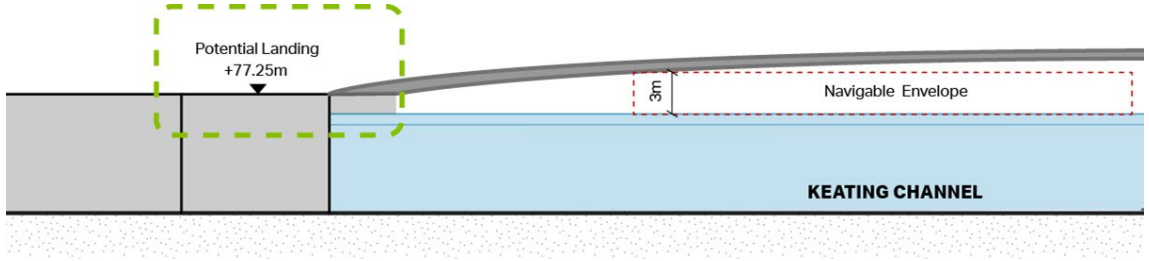
## S-Deck and Masts

+ No barriers at Quayside promenade
+ Curving deck length resolves levels at Quayside
+ Natural traffic calming effect to allow pedestrians and cyclists to share bridge safely
+ Equal importance to each side of the bridge, creating a balanced approach and views to both sides
+ Informed by directionality and a connection to place
- Masts are structurally complicated and require piers in the water, more expense
- Doesn't tie in with the family of bridges

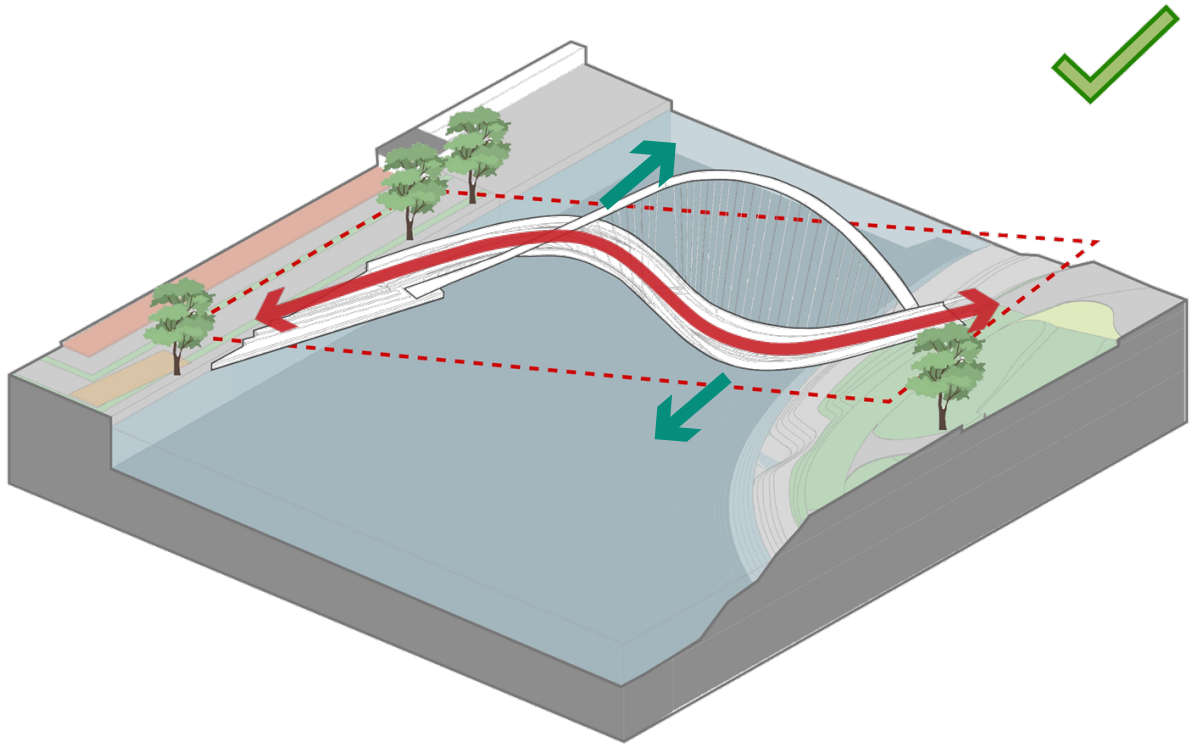
# Concept Design Studies

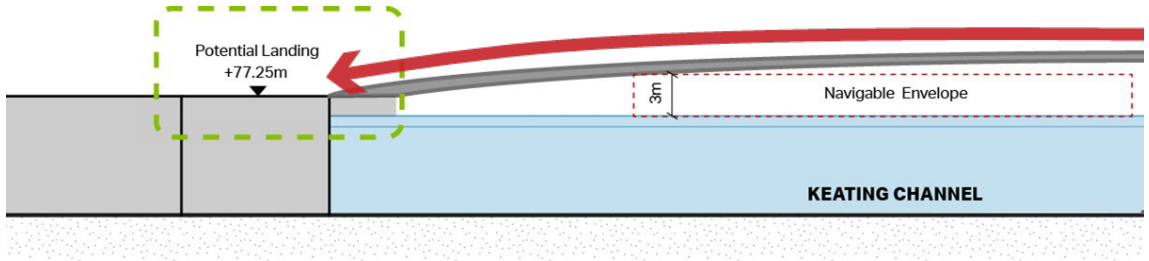


S-Deck and Arch



# Concept Design Studies



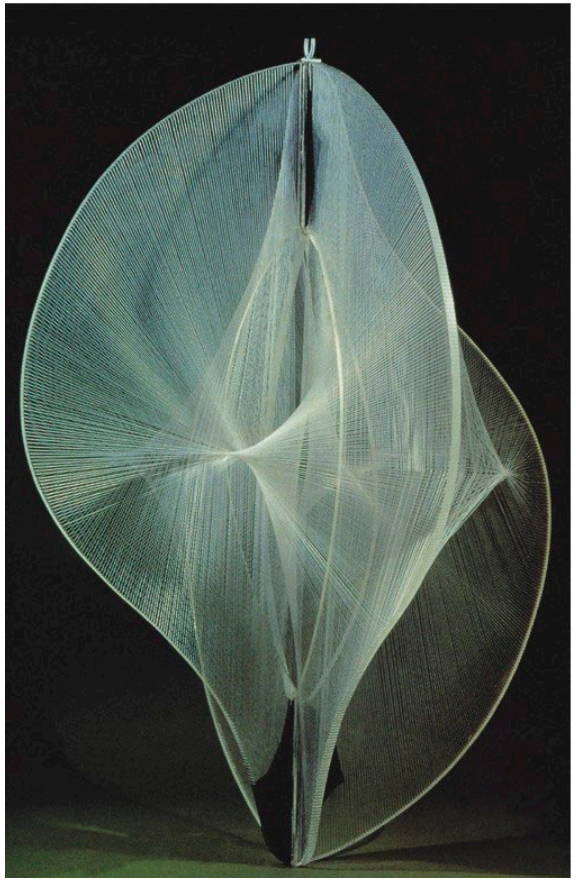



## S-Deck and Arch

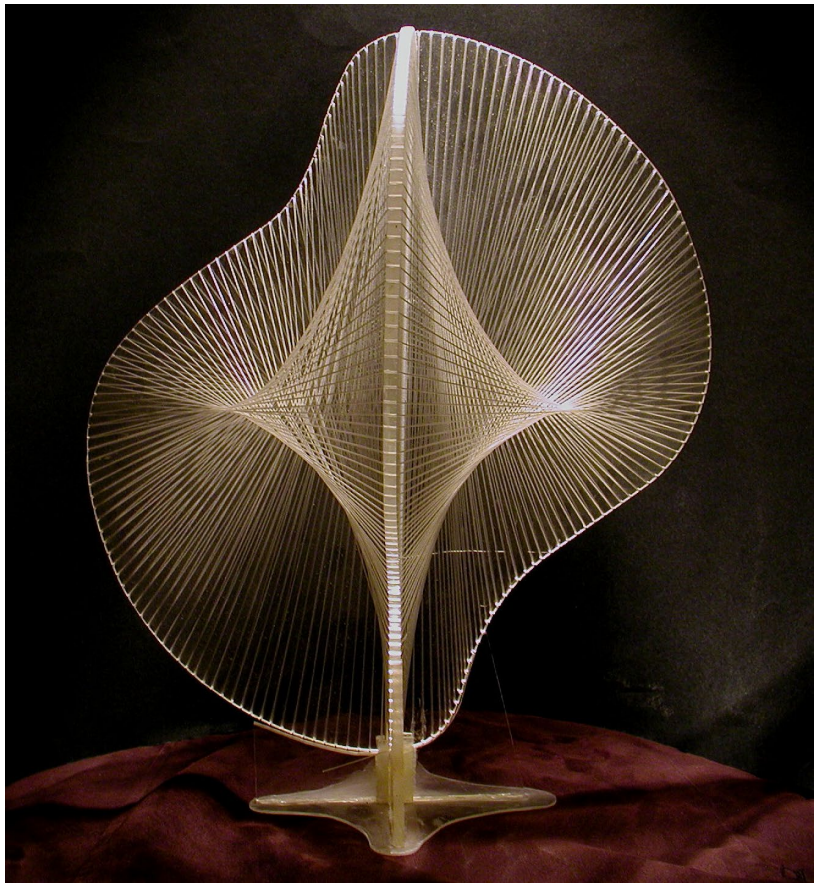
+ No barriers at Quayside promenade
+ Curving deck length resolves levels at Quayside
+ Natural traffic calming effect to allow pedestrians and cyclists to share bridge safely
+ Equal importance to each side of the bridge, creating a balanced approach and views to both sides
+ Informed by directionality and a connection to place
+ Arch is structurally efficient and requires minimal steel
+ Ties in with the ‘family of bridges’ approach in elevation, complimenting the Cherry Street North bridges
+ Form aligns with sinuous forms of the deck and natural landscape

# Concept Design Studies

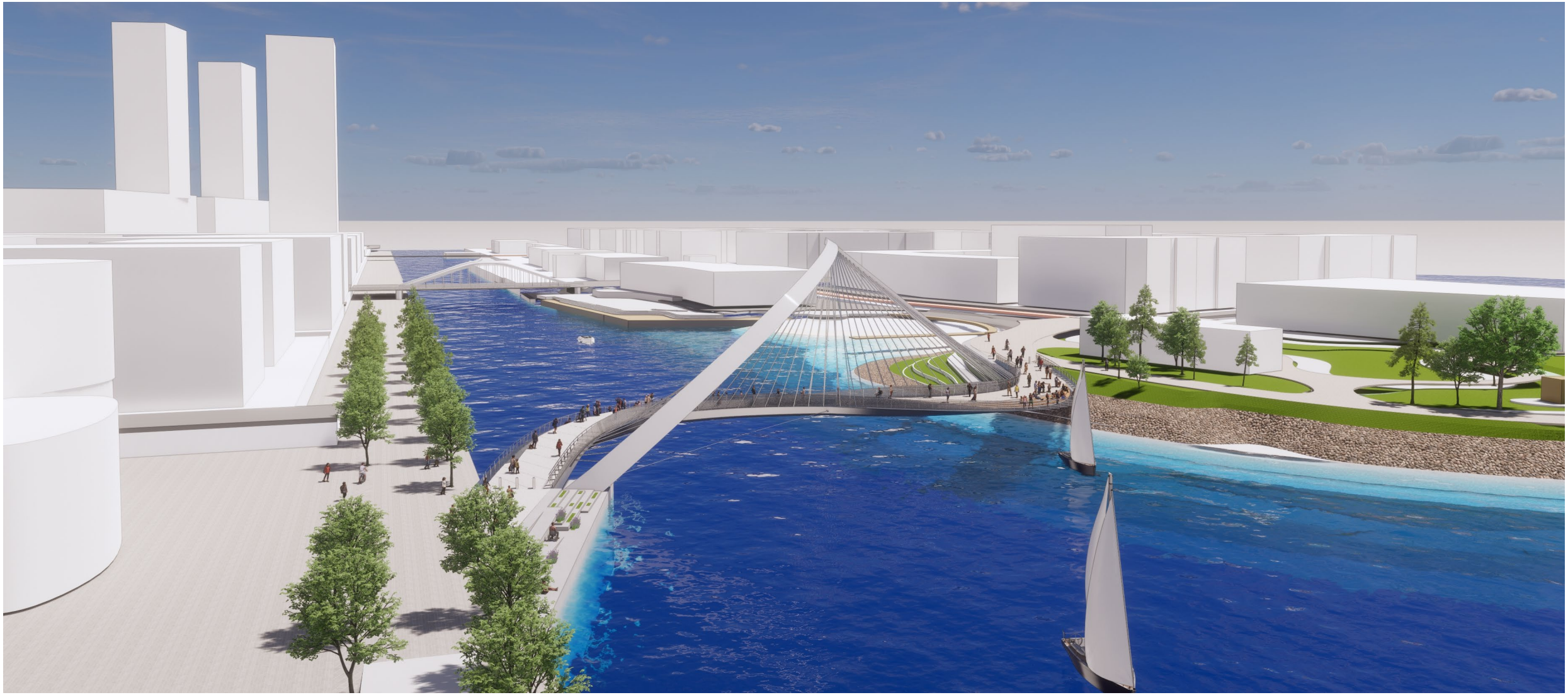
Bridge Deck Geometry and Anti-funicular Arch selected for development in final design



Naum Gabo - Cable Sculptures

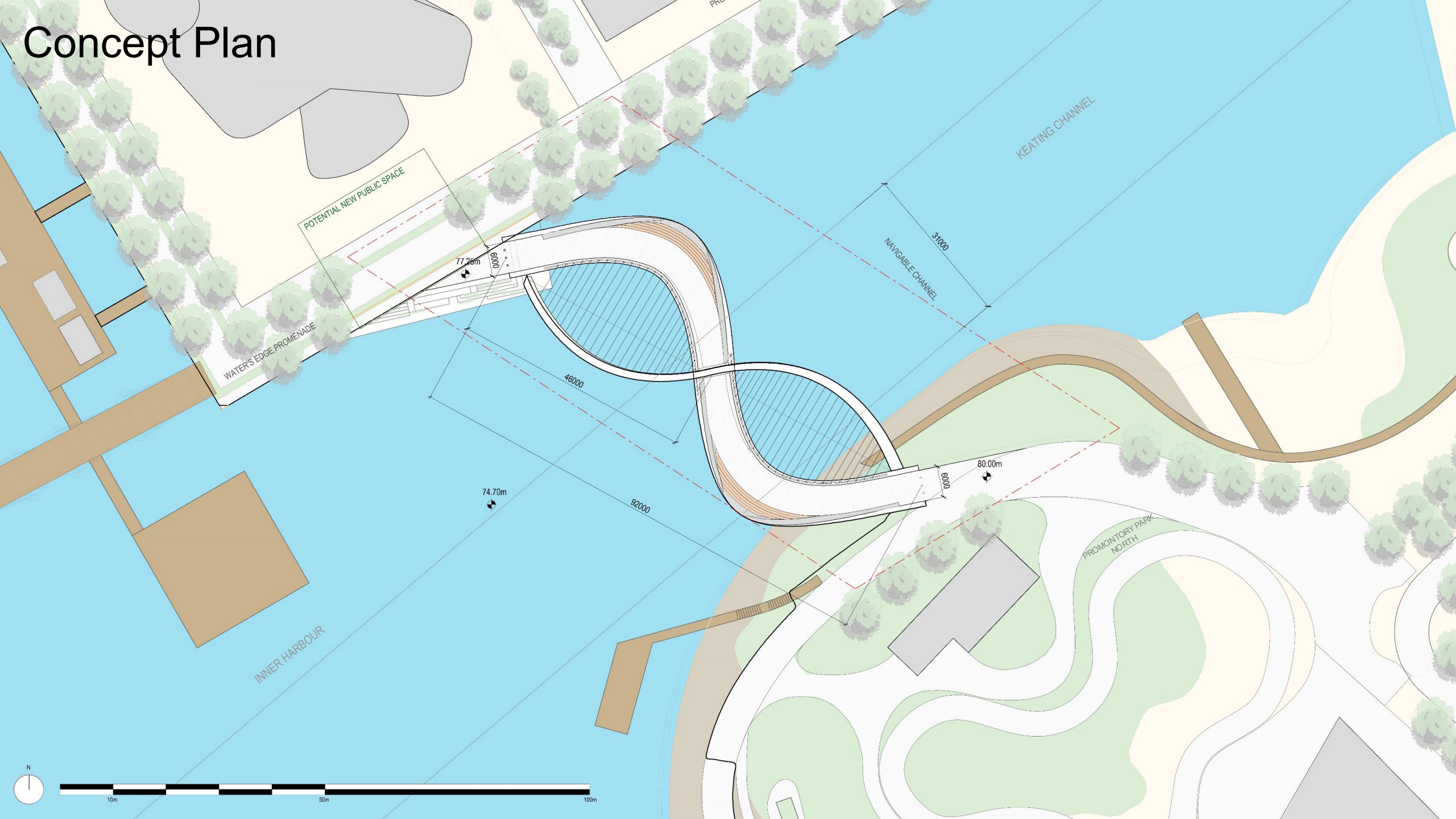


# Final Concept Design

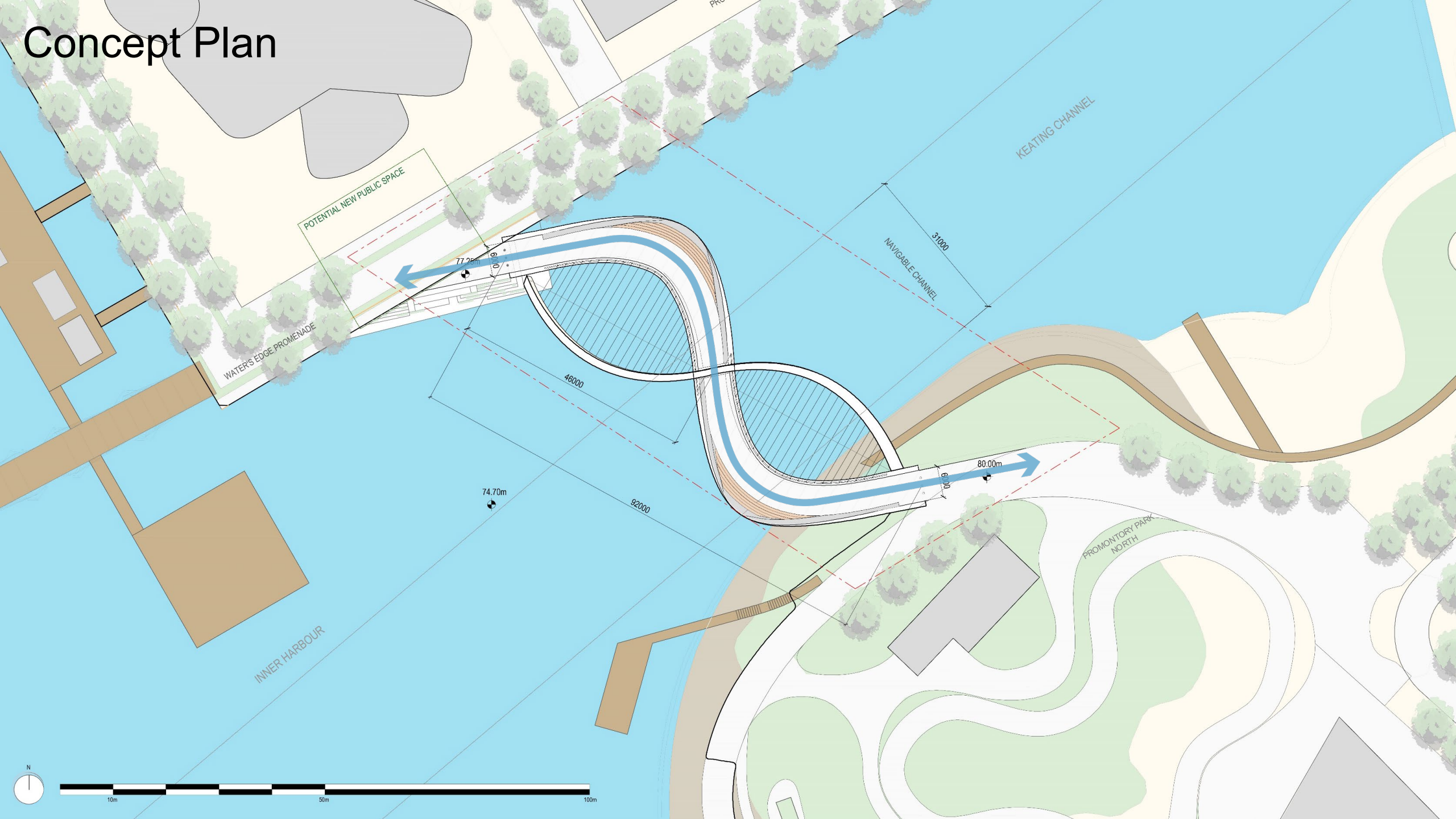


S-shaped bridge aligns with north quay and park finished levels. All ramping is part of bridge geometry

# Concept Plan



# Concept Plan



Aerial view from North Quay

# Final Concept Design

Sinuous bridge deck with integrated perforated wind screens

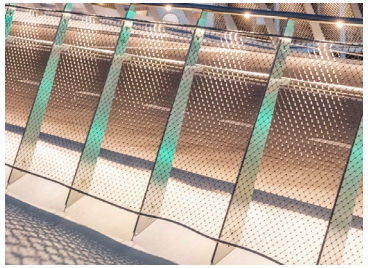
Inclusive spaces for all to enjoy- timber seating accessed via perimeter ramp and steps

Noses to the deck provide seating and connection to the water

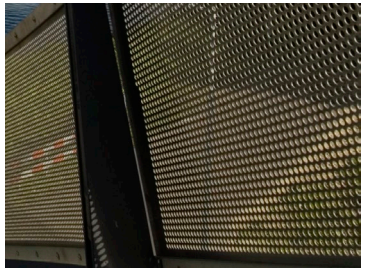
# Materiality and Sustainability

A – Painted Steel

B – Stainless Steel



C – Wire Mesh & Brushed Steel



D – Perforated Metal

E – Wedge Wire

F – Timber Slats

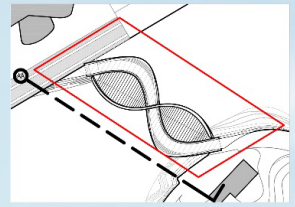
Accessible stepped seating areas for views out to the water


Sectional cut through bridge to indicate conceptual construction and materiality

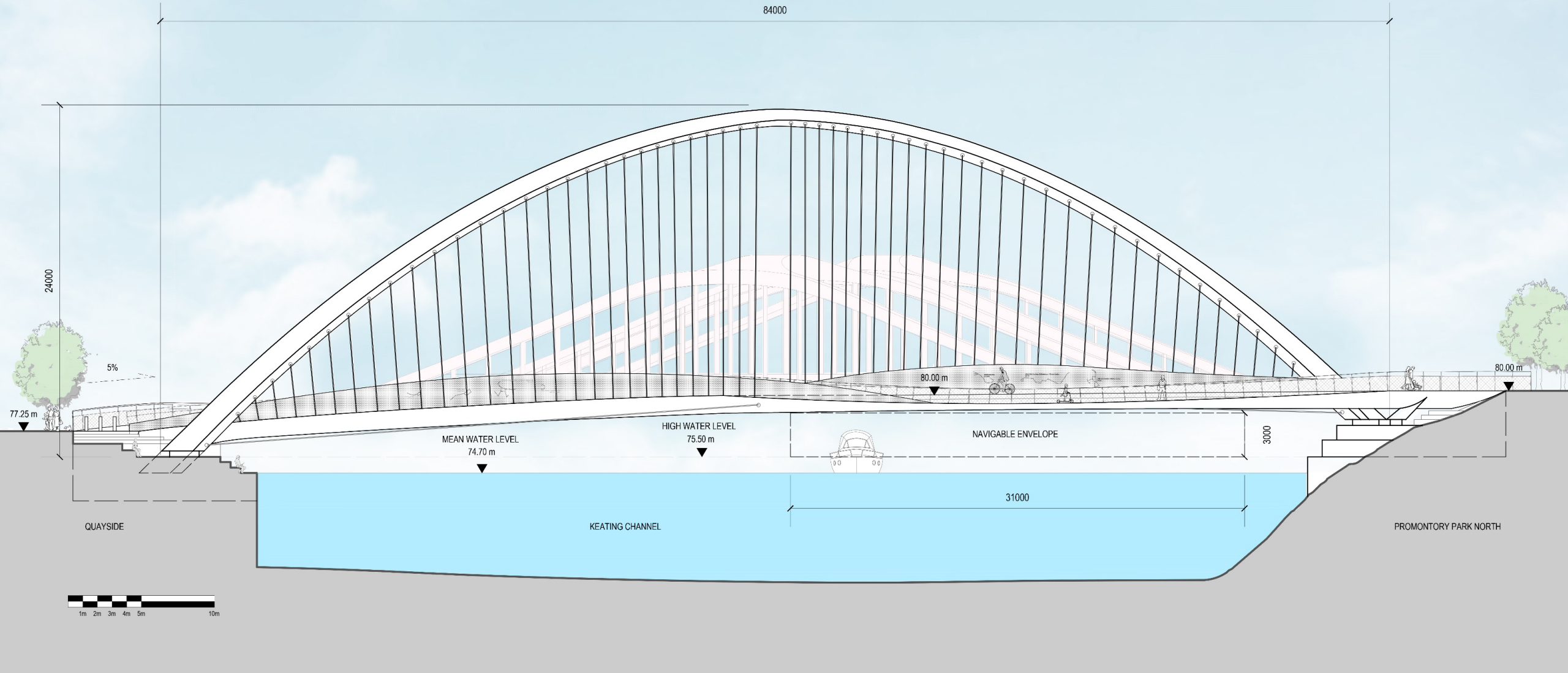
- Highly efficient arch design reducing steel tonnage and carbon intensity
- Landscaping strategy to align with indigenous planting and include rainwater filtration
- Locally sourced materials
- Low maintenance and high durability of chosen materials

Dusk View of Keating Bridge from South

# Longitudinal Section



Key Plan

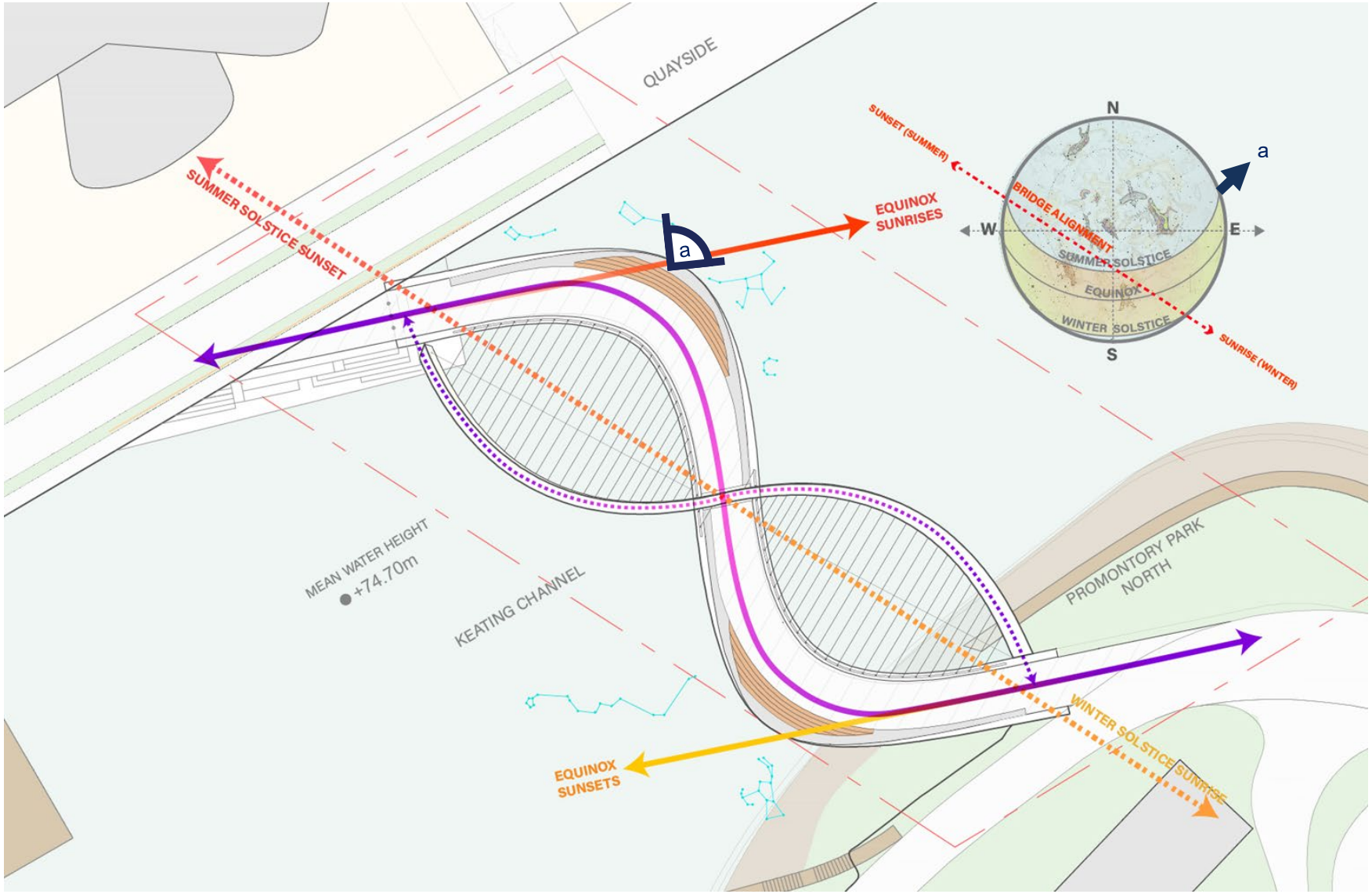


# Indigenous Design Approach

- Design informed by directionality, through connection to the cardinal directions, and to the sky, water, and land
- A form that connects to the summer solstice and winter solstice days.
- Inclusion of native plantings that contribute to soil remediation, water filtration, and the health of the ecosystem
- Connection and acknowledgement to the sacredness of water
- Seating areas that encourage gathering and connection, to each other as well as to All Our Relations
- Work that is done is a good way, driven by consultation with local knowledge keepers and Elders, to listen and learn appropriate way to reflect the unique perspectives, stories, and wisdom of the MCFN in a respectful and contemporary way.

# Final Concept Design

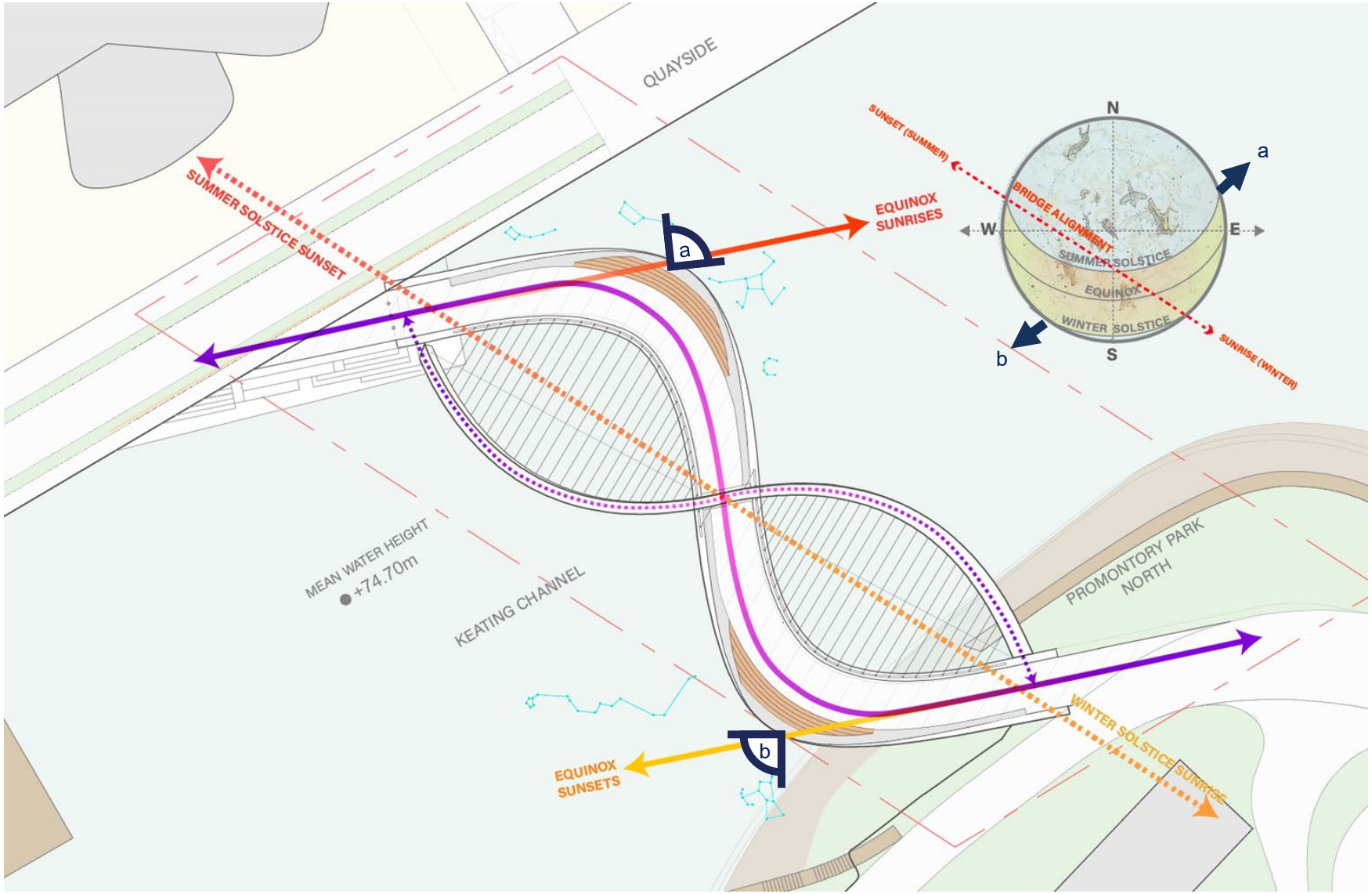
Summer Solstice sunrise from the north-east viewing point



# Final Concept Design


Summer Solstice sunrise from the north-east viewing point


Winter Solstice sunset from the south-west viewing point

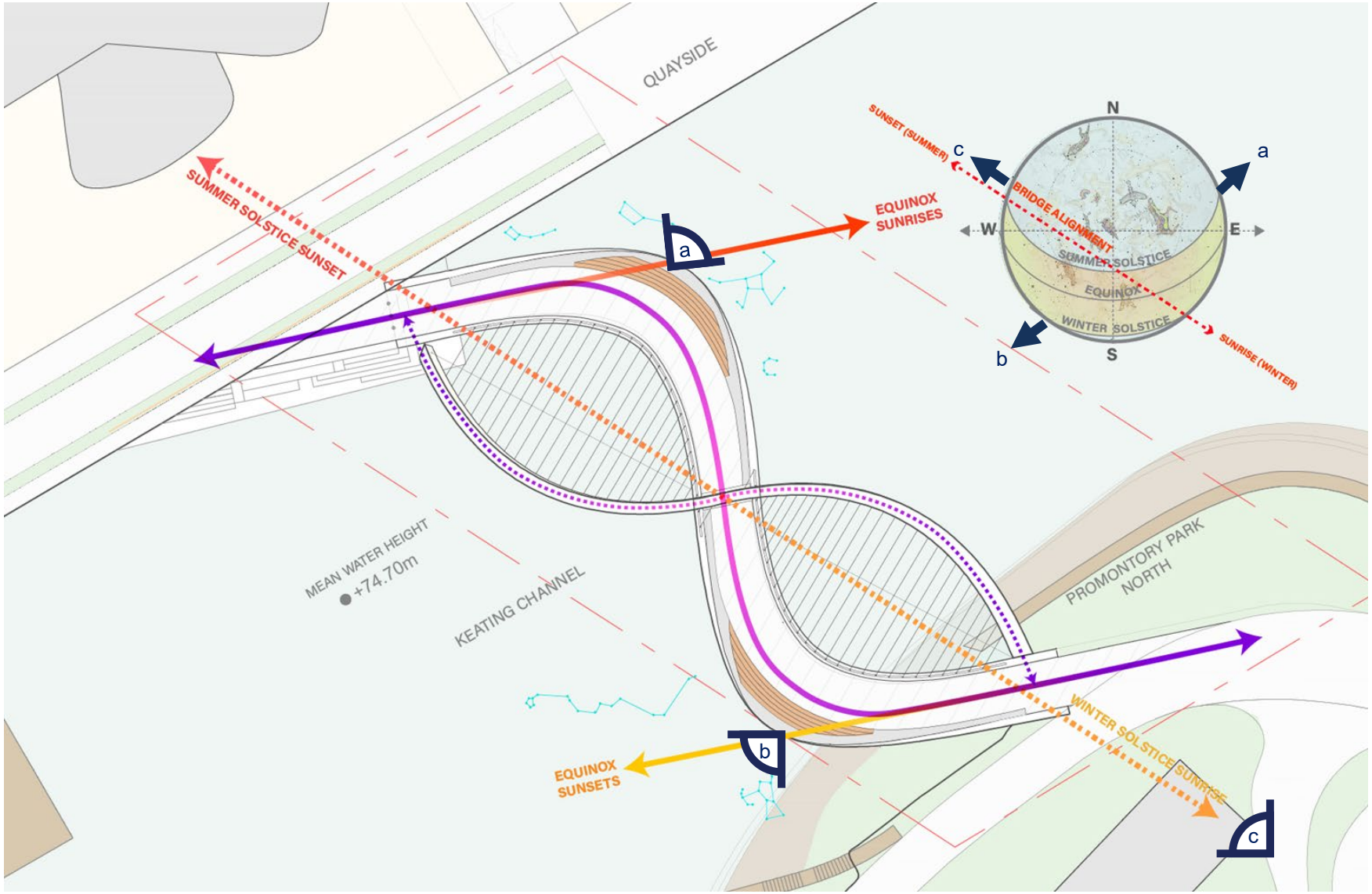


# Final Concept Design

Summer Solstice sunrise from the north-east viewing point

Winter Solstice sunset from the south-west viewing point

Summer Solstice sunset through the arch



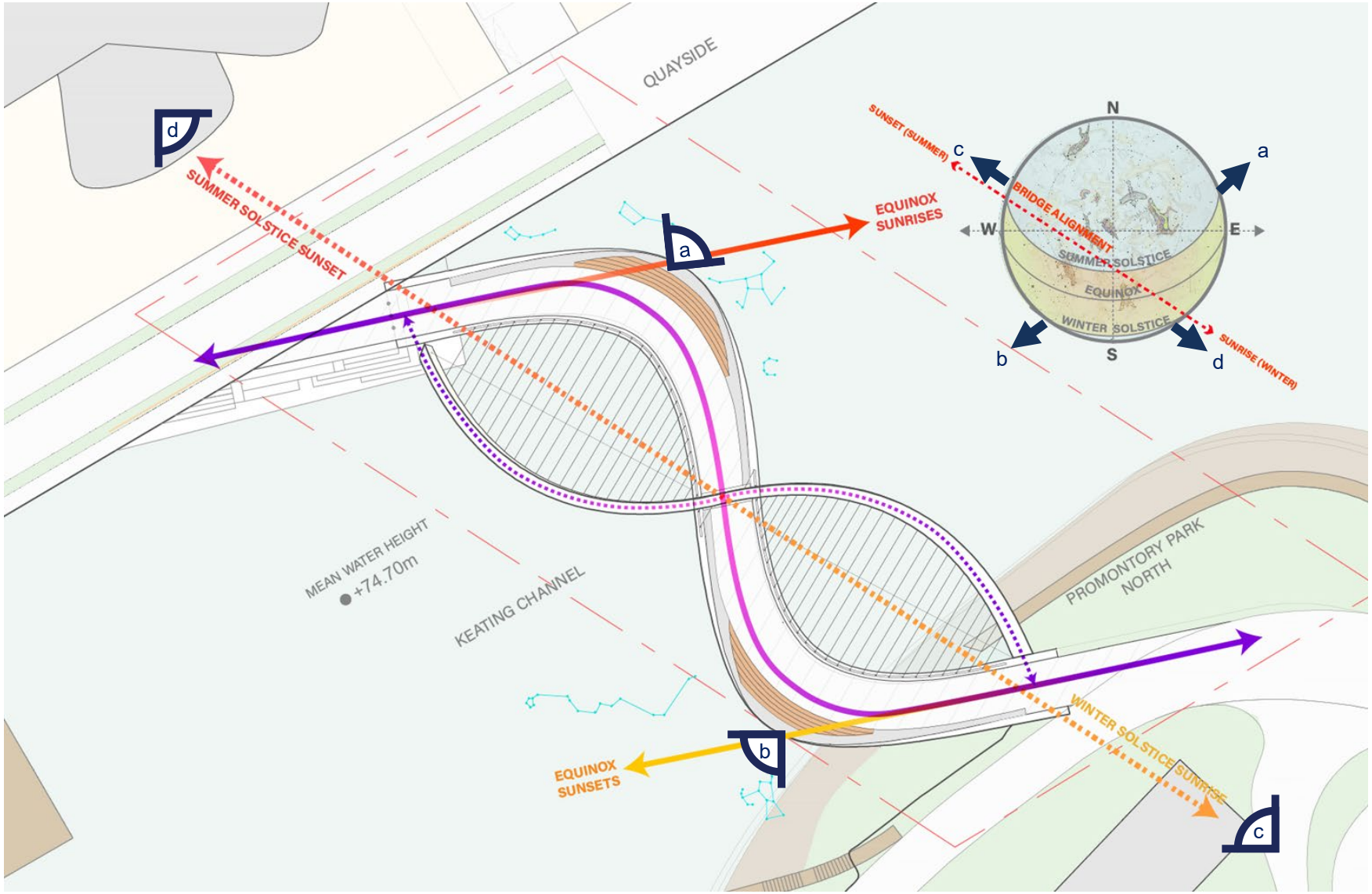
# Final Concept Design

Summer Solstice sunrise from the north-east viewing point

Winter Solstice sunset from the south-west viewing point

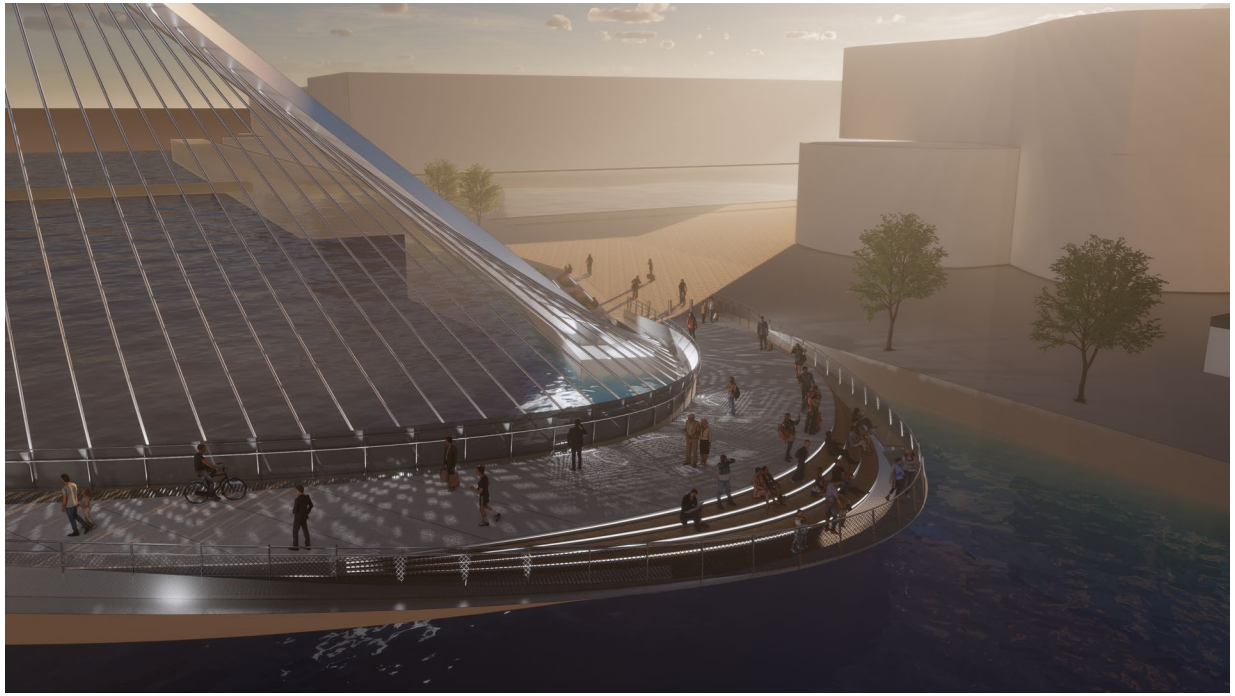
Summer Solstice sunset through the arch

Winter Solstice sunrise through the arch



# Lighting Design

Constellations are projected across the deck, glistening in the sunset

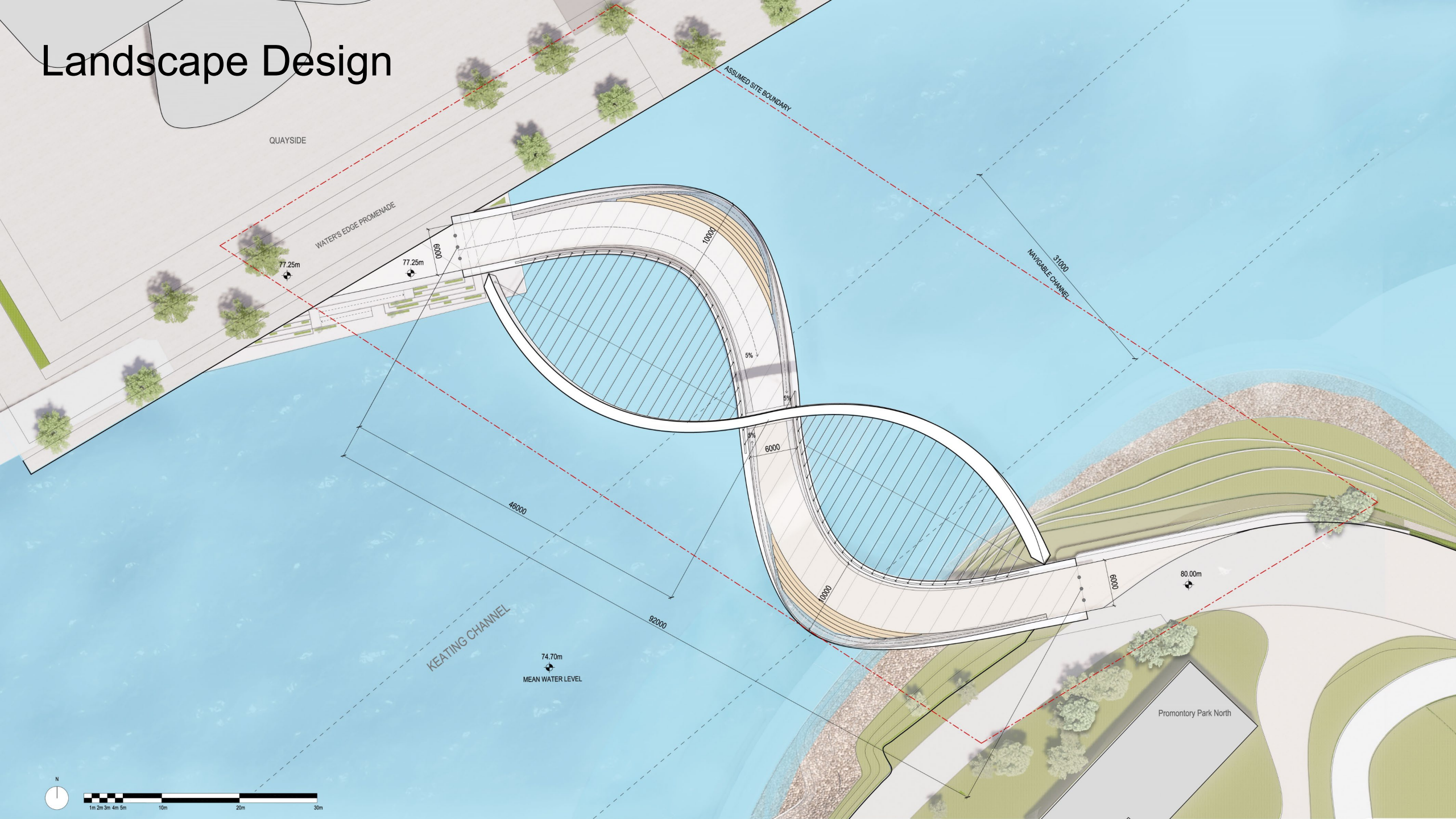


Light dances in the water reflected from the bridge

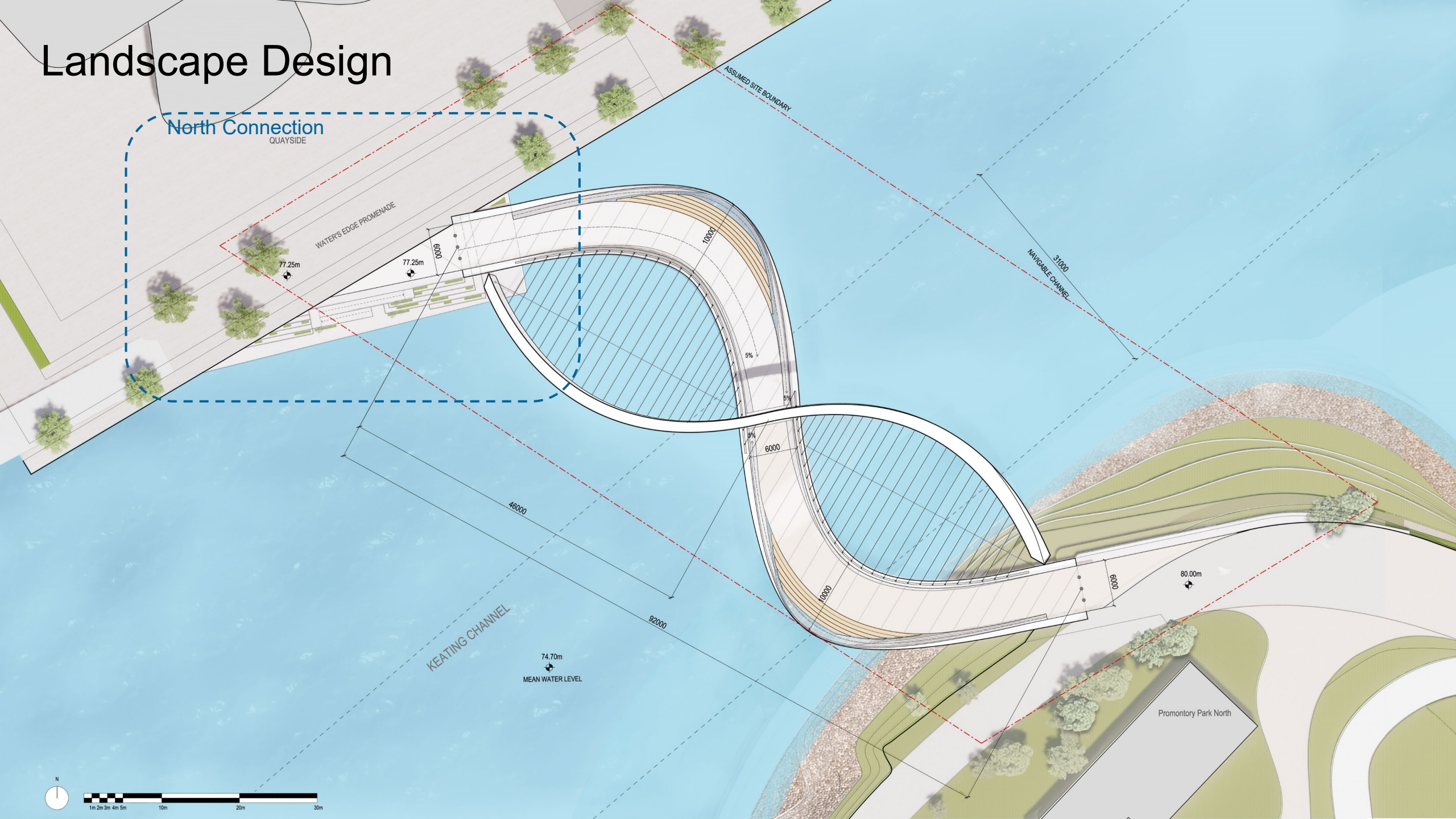
Aerial view of bridge with conceptual lighting to show indigenous lighting overlay including star constellations projected onto deck surface

Night View of Keating Bridge from South
with Feature Lighting Concept

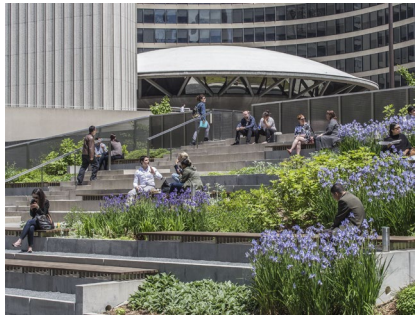
# Landscape Design



# Landscape Design



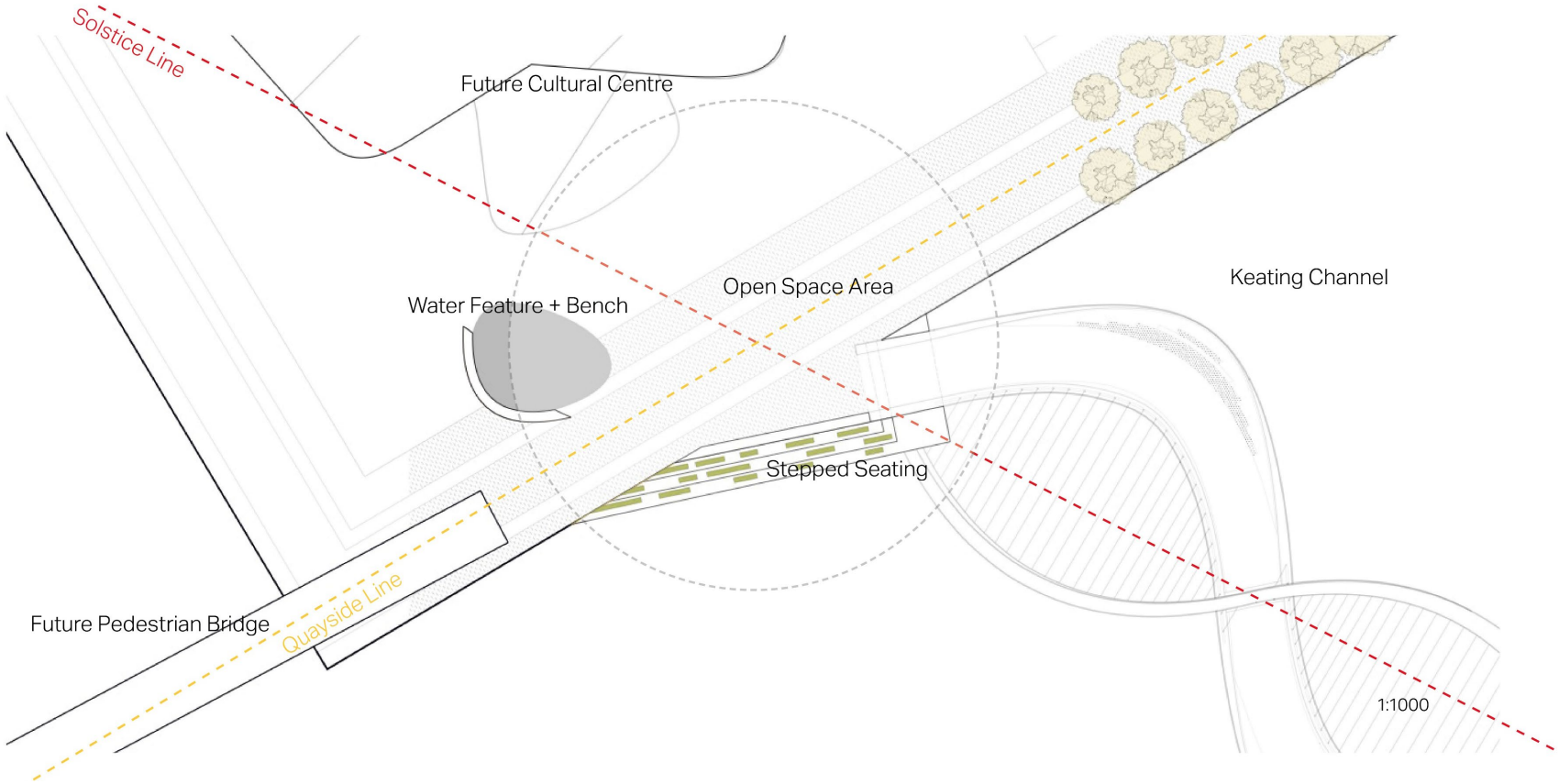
# Landscape Design – North Connection



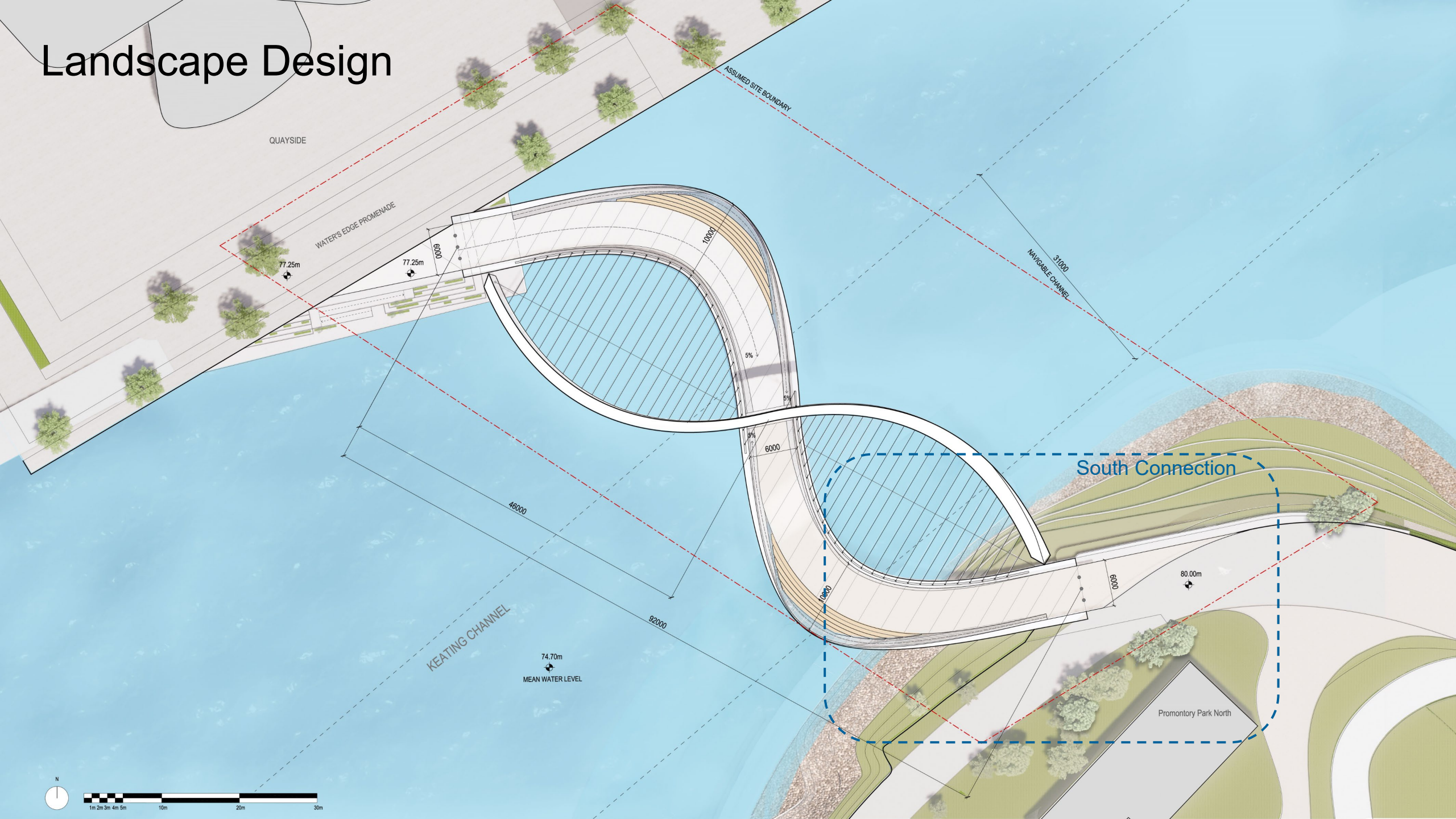
Stepped Seating | Nathan Philipps Square - PLANT Architect Inc.

Water Feature + Bench | Gallery of Freedom Square - 501 Architects

Raingarden Plantings | Edinburgh Gardens Raingarden - GHD Pty Ltd



# Landscape Design

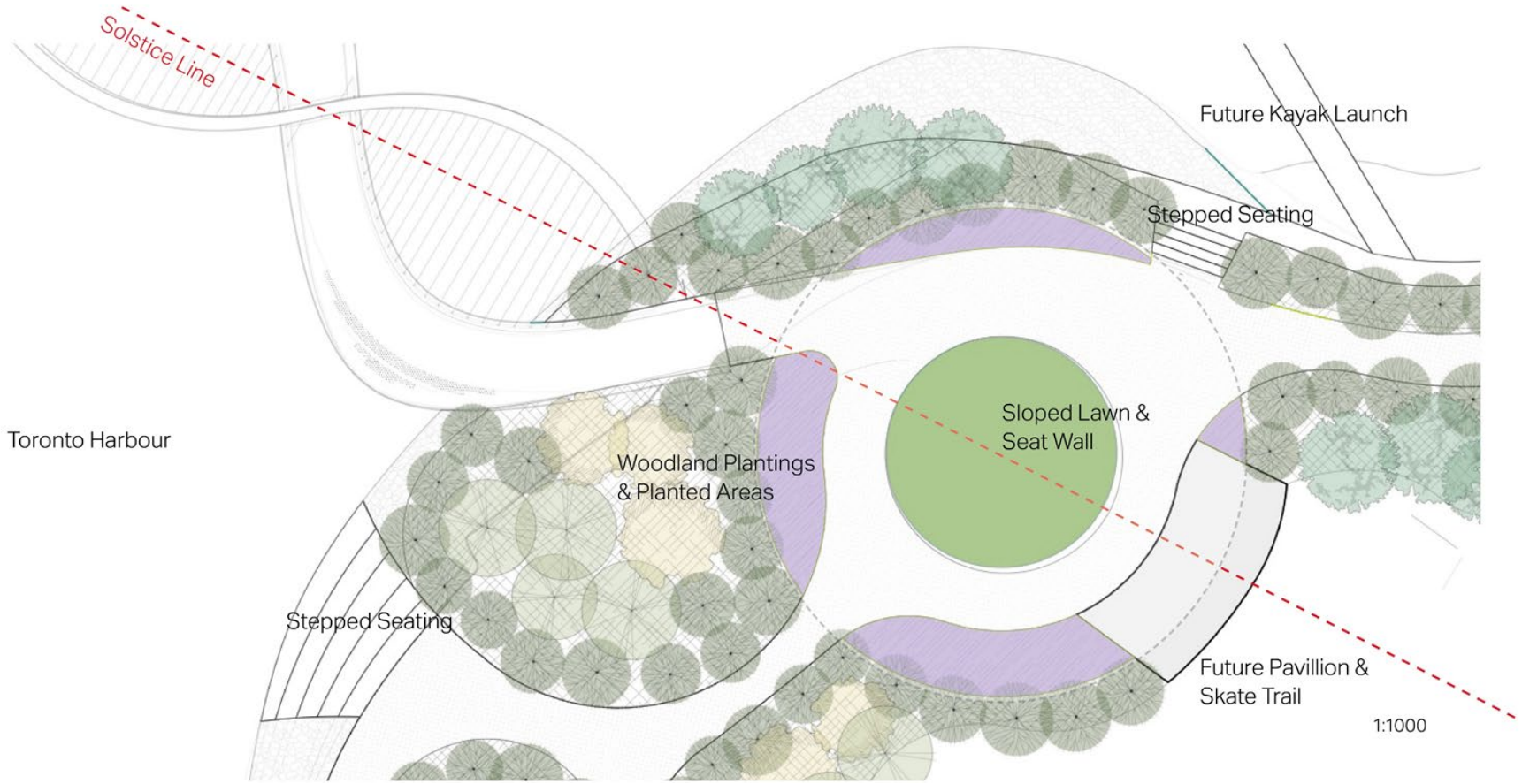


# Landscape Design – South Connection

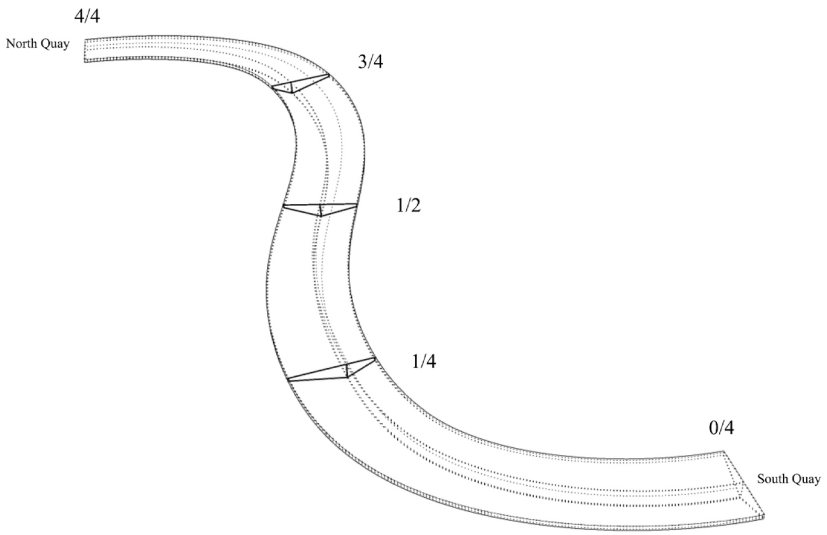
Woodland Plantings & Planted Areas | Dorpsweide - Atelier Loos van Vliet

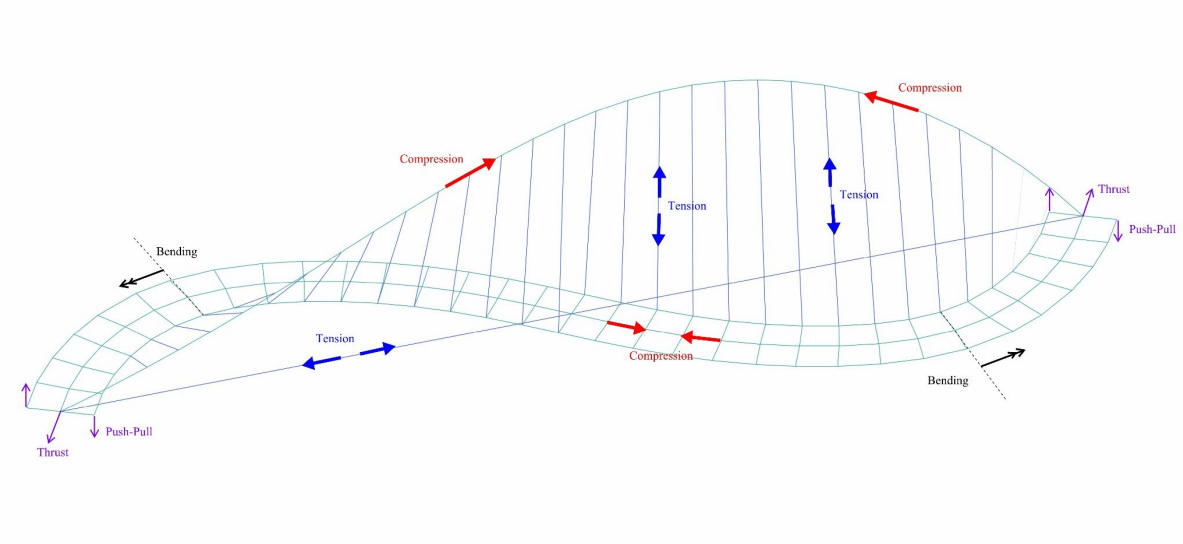
Sloped Lawn & Seat Wall | Buckingham Browne and Nichols - Stephen Stimson Associates

Stepped Seating | Calgary Bow RiverWalk - Stantec / Moriyama Teshima Planners



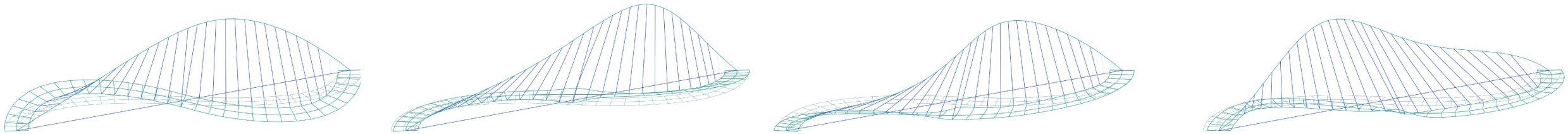
# Structural Engineering



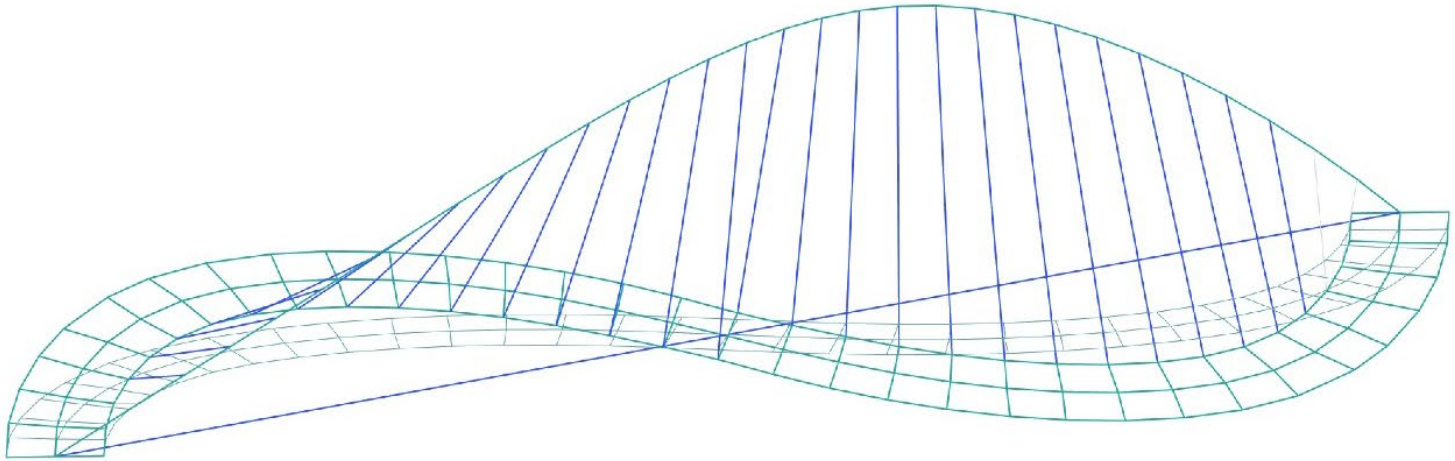




Load path diagram of the funicular arch and the deck

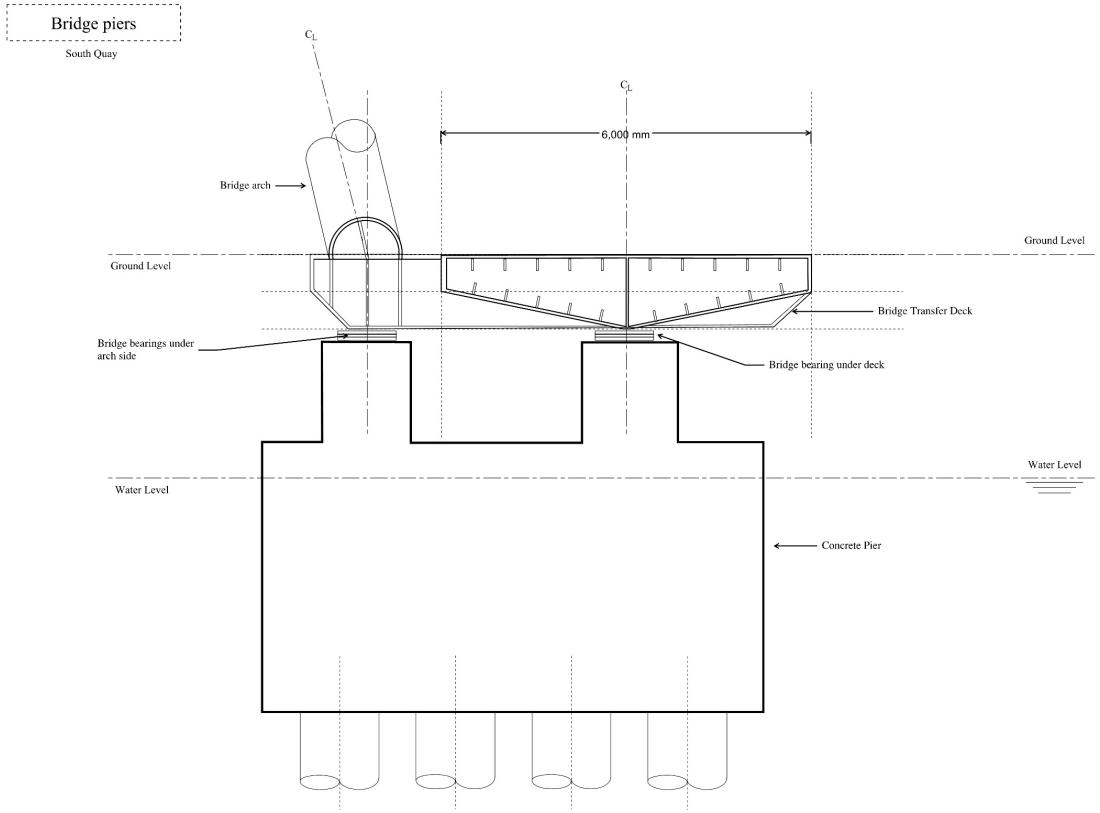
Modal shapes of the bridge

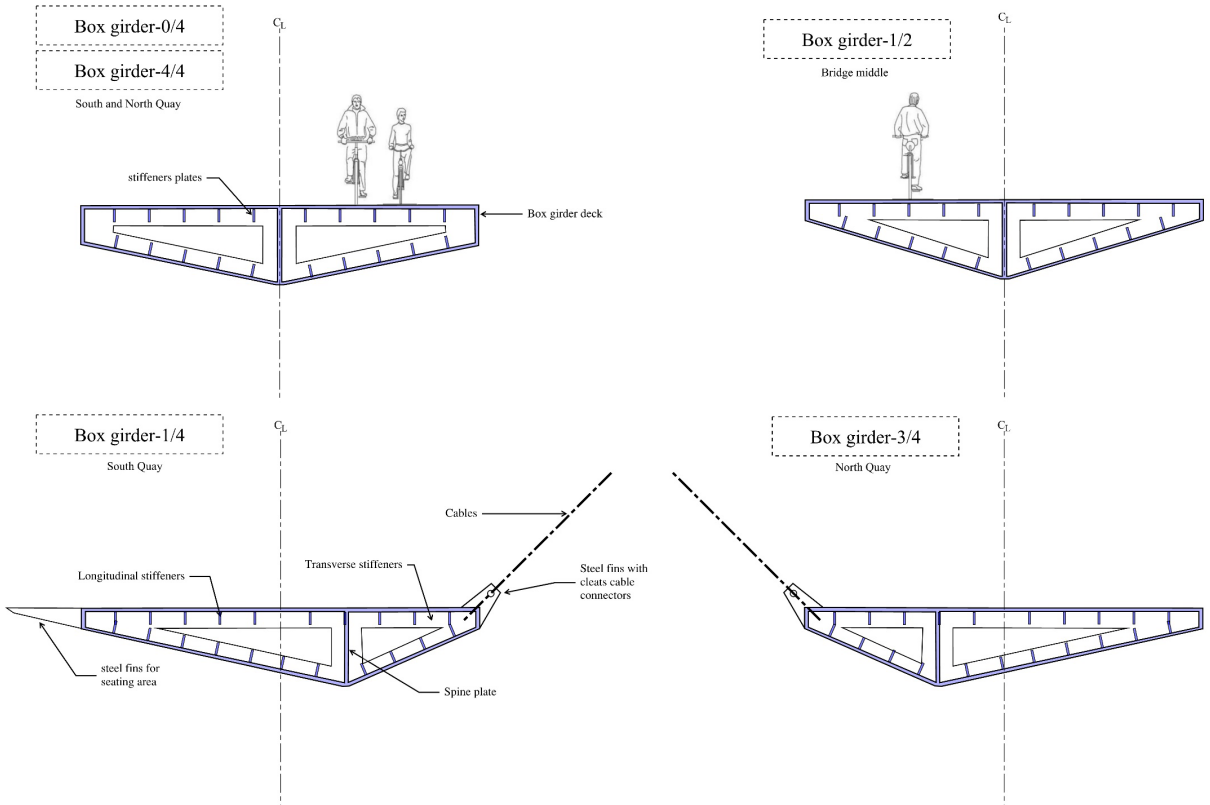


# Structural Engineering

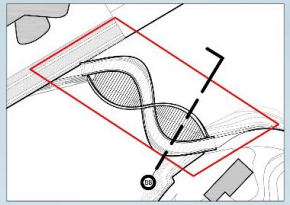


# Structural Engineering

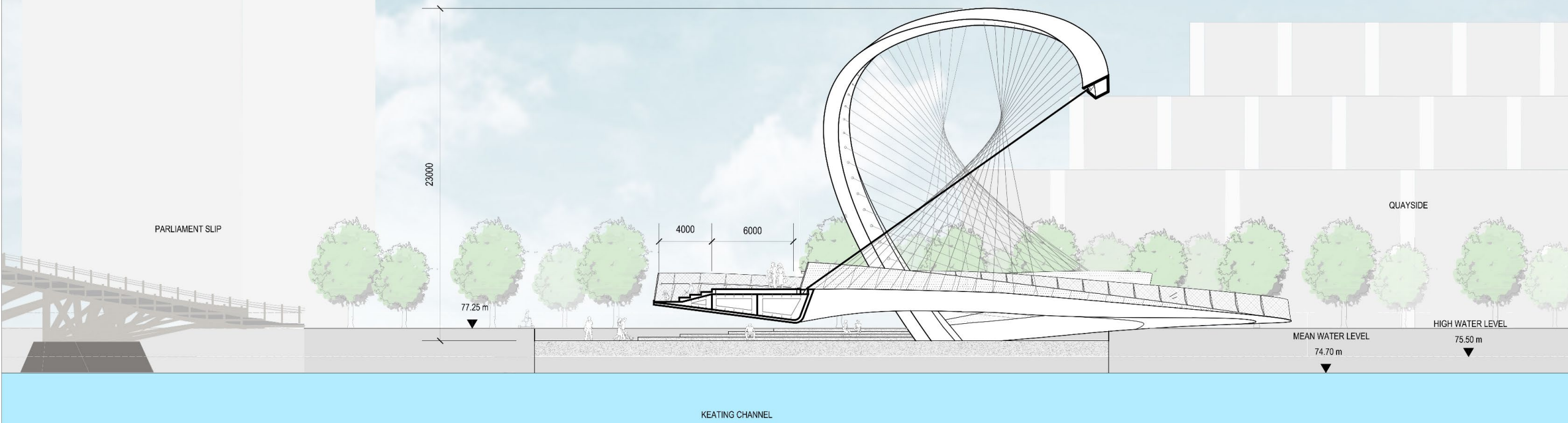


# Transverse Section



Key Plan




Proposed bridge from west with view down Keating Channel, complimenting the family of bridges