



# Bronte Surf Life Saving Club

## Coastal protection peer review presentation

PRELIMINARY



RECEIVED  
Waverley Council  
Application No: DA-455/2022  
Date Received: 08/11/2023

## 1.0

## Agenda

- Process so far
- Overview
  - Site Considerations
  - Design Strategies
- Response to key issues
  - Facilities siting
  - Building movement
  - Promenade and Seawall
  - Accessibility
- Revised design
  - Plan and section
  - View analysis
  - Physical modelling



# Process so far



DA Submission - October 2022

Key issues:

- Site location and sustainability (inundation & design life)
- Operation and noise
- Accessibility
- Excavation and heritage
- View impacts from residential areas



Amended DA - August 2023



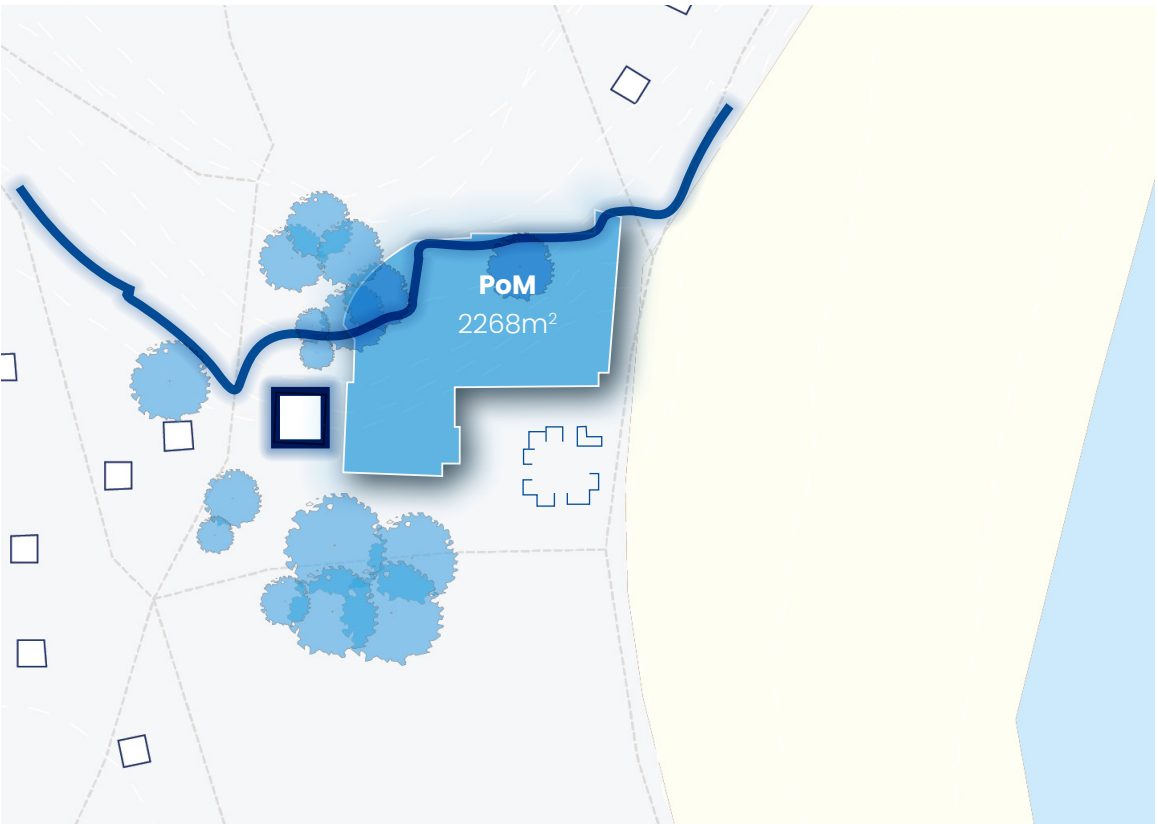
Sea wall update - October 2023

2.0 Coastal protection peer review

# Overview



# Site Considerations



The Plan of Management envelope is inconsistent with current operational needs and community expectations:

- Increases bulk on the water.
- Increases overshadowing on the park.
- Removes open space at beach level.
- Doesn't resolve the conflict of beach monitoring and SLSC operations with pedestrian movement along the promenade.

## Reflection

- POM footprint has accommodated an appropriate area growth.
- Lifeguard, park and requirements have changed.
- Height and setback expectations have been clarified through specific community engagement.

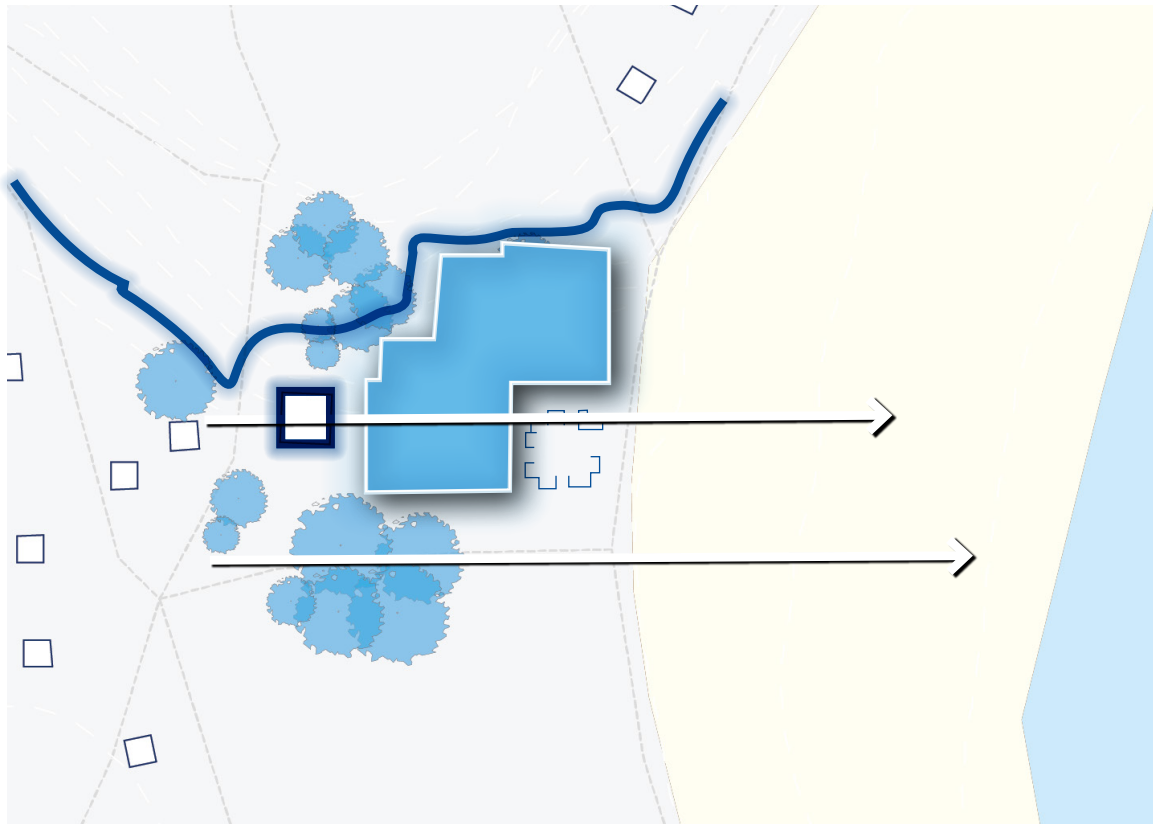


Protect quantity and amenity of open space:

- The plan of management enables expansion into public open space that is of high value to the community.

## Reflection

- The community has clearly indicated through the design development and engagement process that a high priority is placed on:
  - no loss of usable green space
  - no more overshadowing of green space to the south

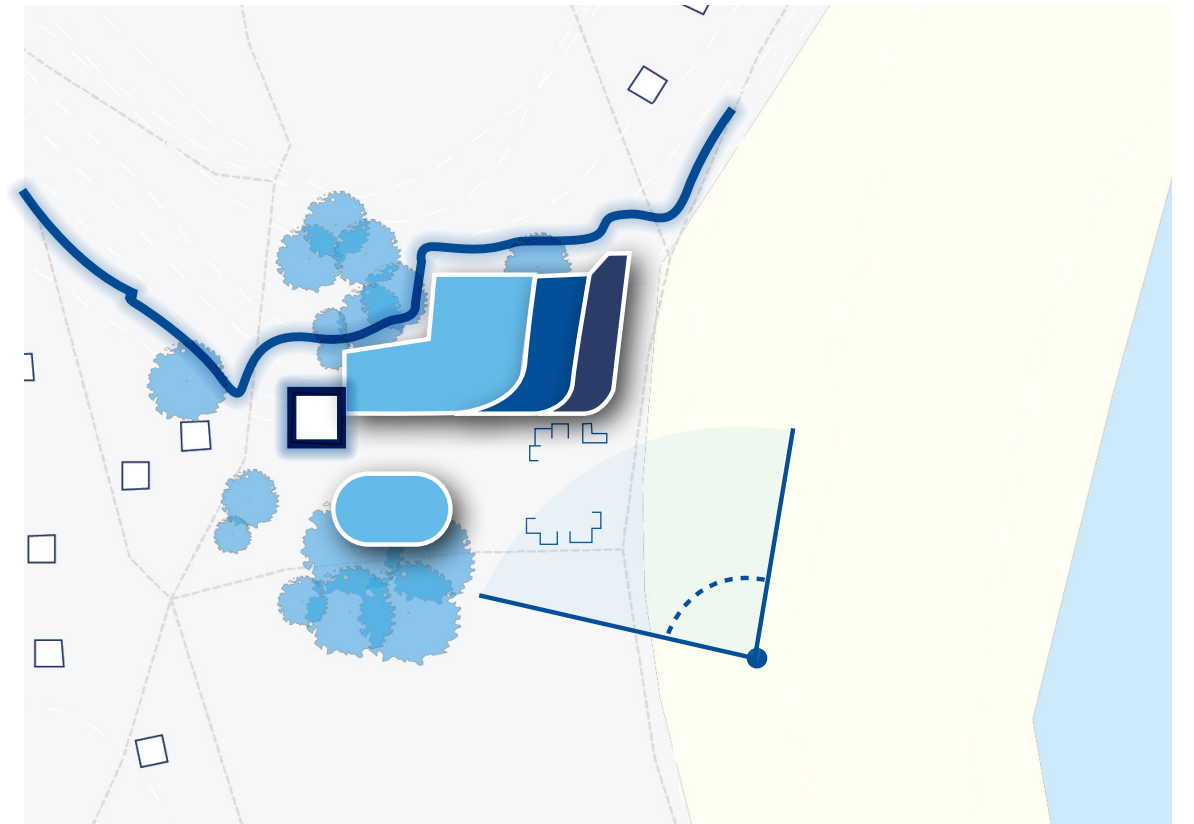


Protect sight lines and views between park and beach:

- The plan of management envelope enables reduced visibility between the two most used areas of the beach highlighted by community and technical reviews.

## Reflection

- Level 1 to stay behind the heritage pump house alignment.
- Ground floor to go no further than the existing alignment at the south.
- Integrate the heritage pump-house through building alignments and creating a layered collection of forms.



Minimise bulk and scale

- The plan enables a building that closer to the water at upper levels increasing bulk and scale.

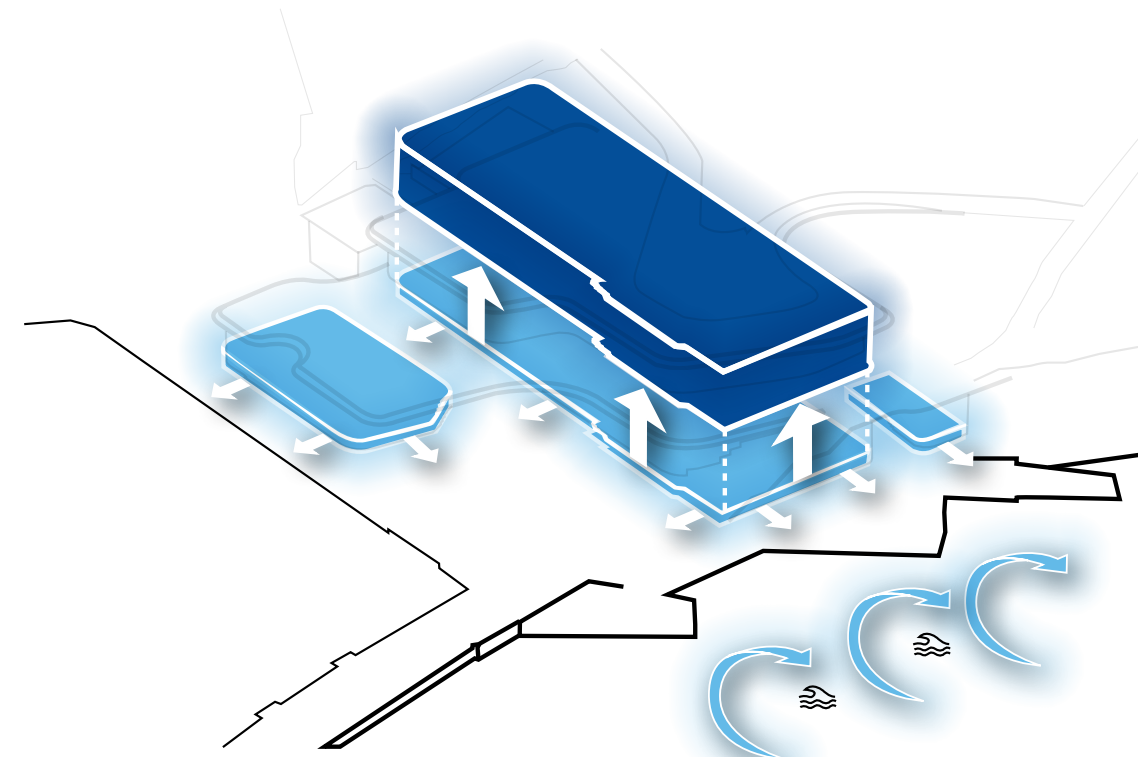
## Reflection

- Layered increase in height away from the beach and southern park to reduce the dominance of built form from the south.
- Nestle the building into the headland.

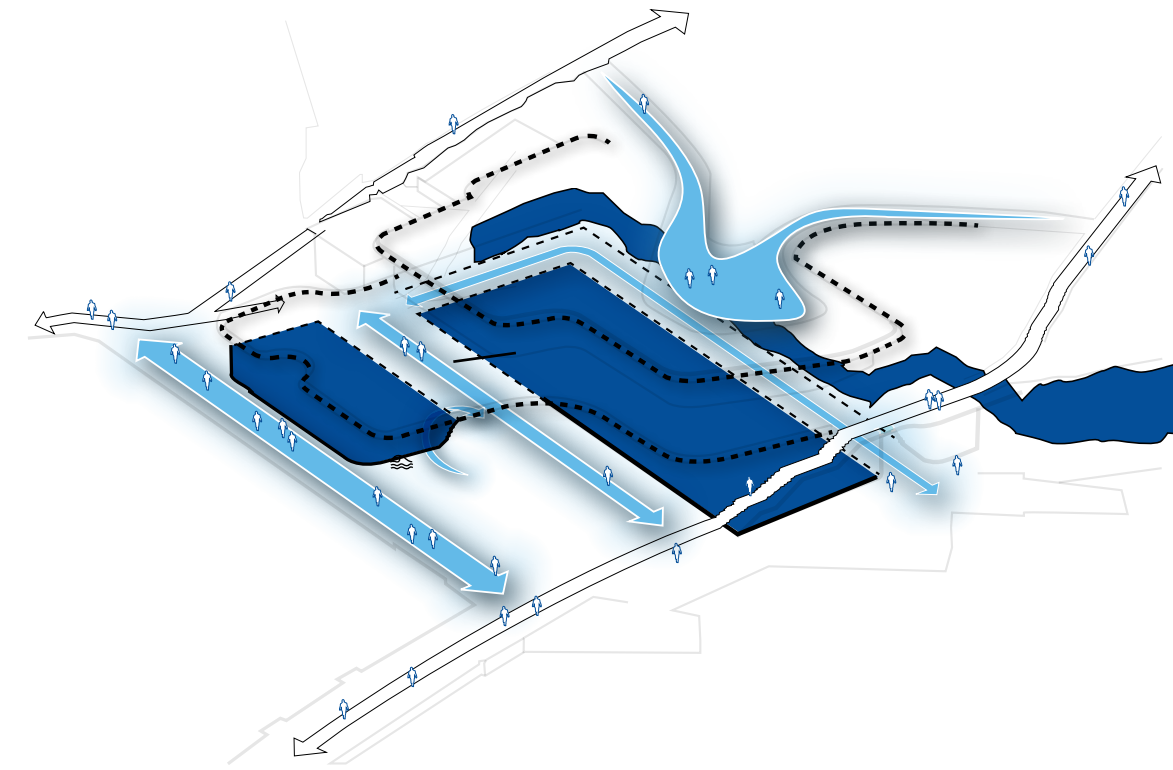
# Architecture Strategies



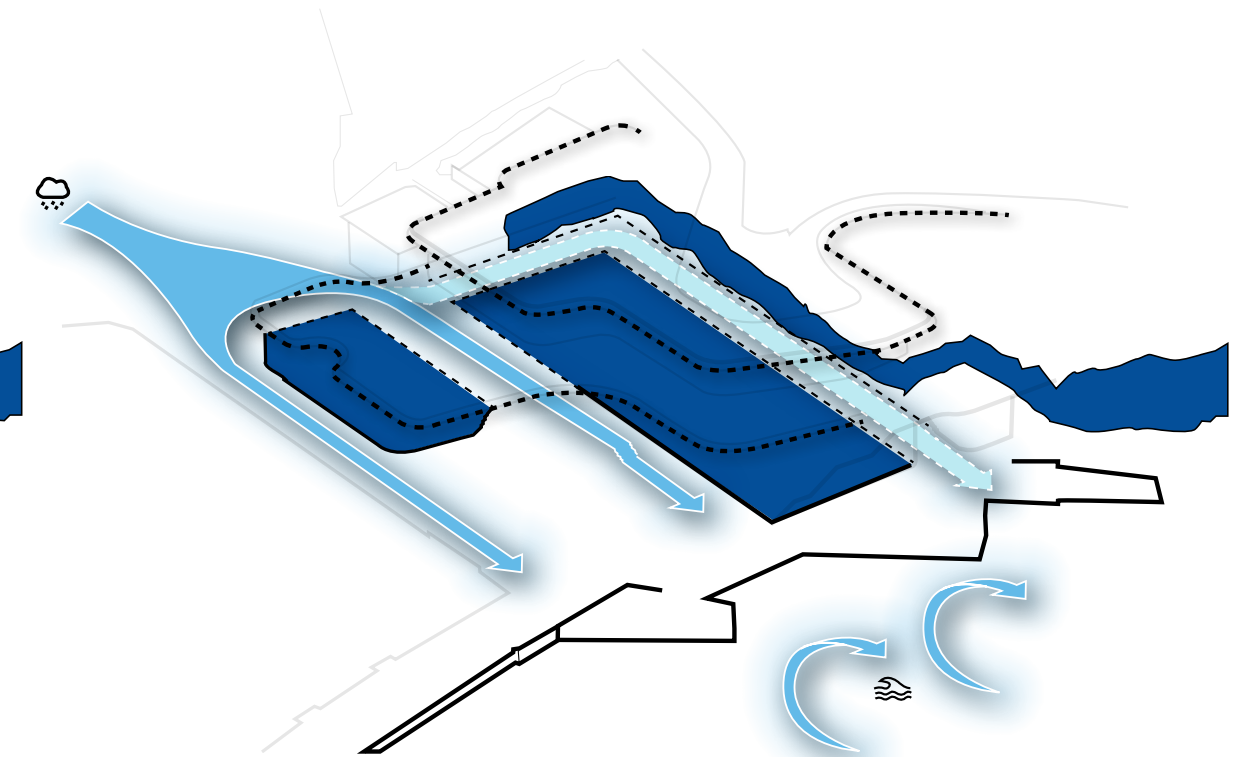
An Appropriate Scale



Operational Resilience



Prioritise  
Circulation and  
Experience



Working with Water

3.0 Coastal protection peer review

# Response to key issues



# Key Issues

## SCEPP Meeting minutes

### **Key issues discussed**

- Applicant has engaged new coastal engineer with peer reviewer to be engaged to overview coastal works and include a detailed hazard assessment and performance of works (noting coastal inundation and erosion)
- Encroachment of sea walls and other walls onto the beach and adequacy of protection works
- Proposal to include works immediated in front of the building, further approval required for other works along the beach
- Clarification of proposed sand level in relation to wave action and impact on proposed wall

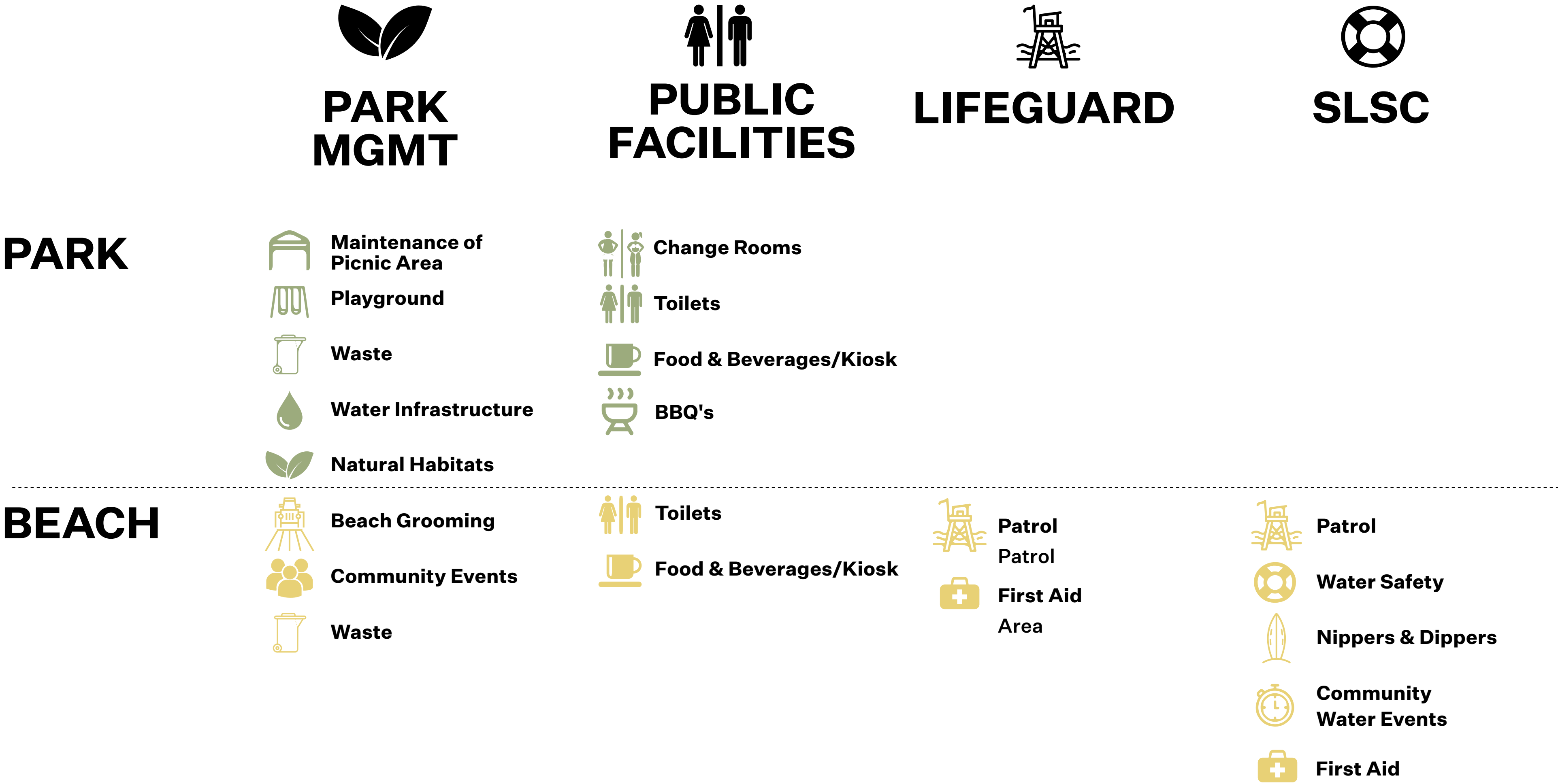
### **Key Considerations**

- Promenade and sea wall to enable a separation between operations and public and wave action protection
- Existing sea walls noted as not able to match the design life of the proposed structure and need for proposed works for protect new building
- Access consolidation to be considered and alignment of ramps

### **Panel Comments**

- Need to address coastal risk management
- Discussion required between the applicant and Council to address coastal risk management issues
- Consideration of total seawall importance to the proposed structure
- Agree that building location is appropriate

# Operational Needs and Facilities Siting



# Operational Needs and Facilities Siting

## LIFEGUARD

Bronte is recognised as one of the two most treacherous patrolled beaches in NSW.

The Coroner's Inquest into the death of Matthew Thomas Ritchell in 2014 documents the conditions of Bronte quickly turning from benign to treacherous.

As a result of this tragic event, Waverley Council provide a Lifeguard presence 365 days a year.

The sand and water conditions restrict the ability for the lifeguards to use buggies or other vehicles in aiding people in need.

This drives a need to provide facilities central to the beach to enable rapid response by foot to any area of the beach and a reliance on boards as the primary water-craft that can be safely used at Bronte.



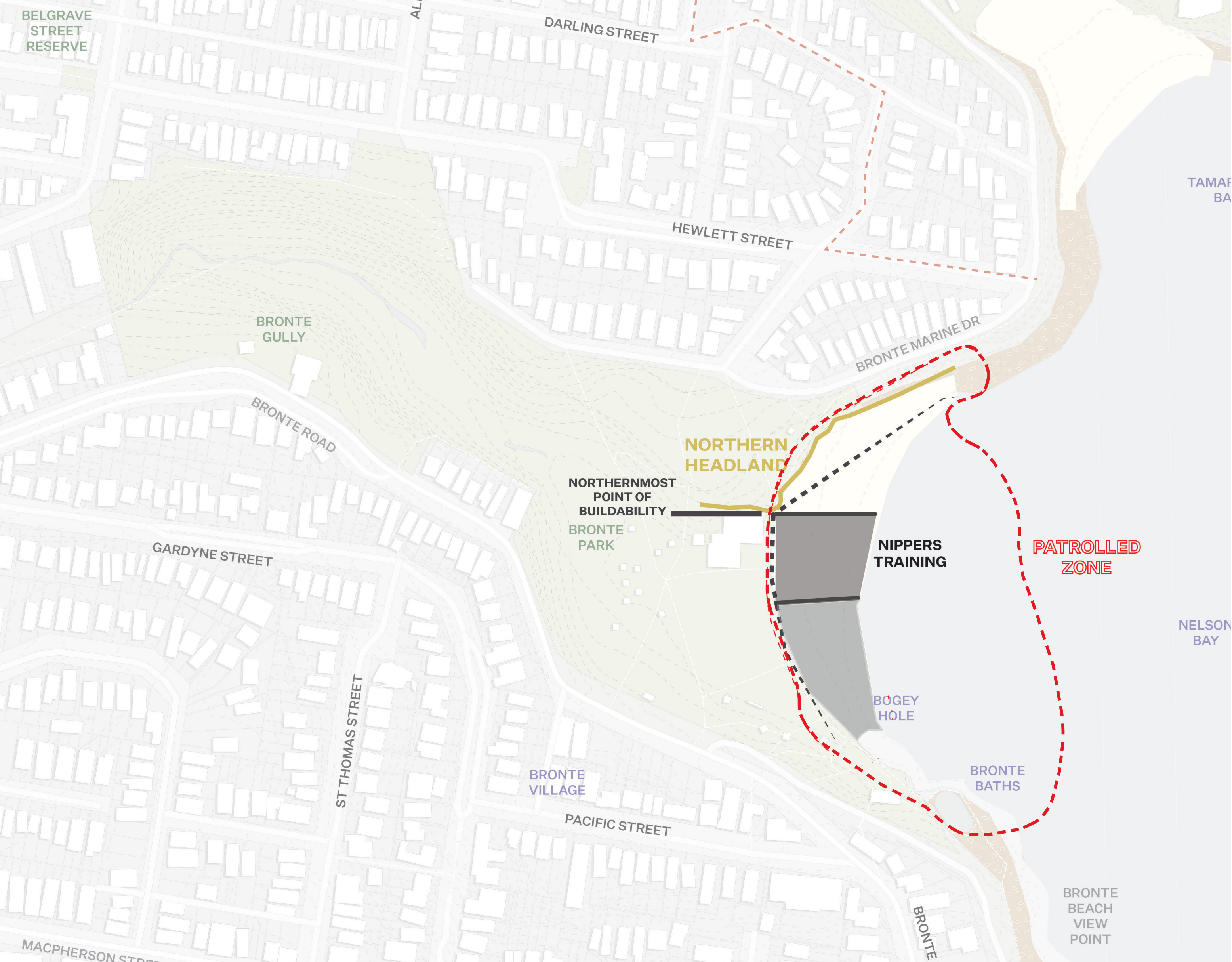
# Operational Needs and Facilities Siting



The Bronte Surf Life Saving Club supports the work of Council and the lifeguard patrol through a combination of educational programs as well as beach surveillance.

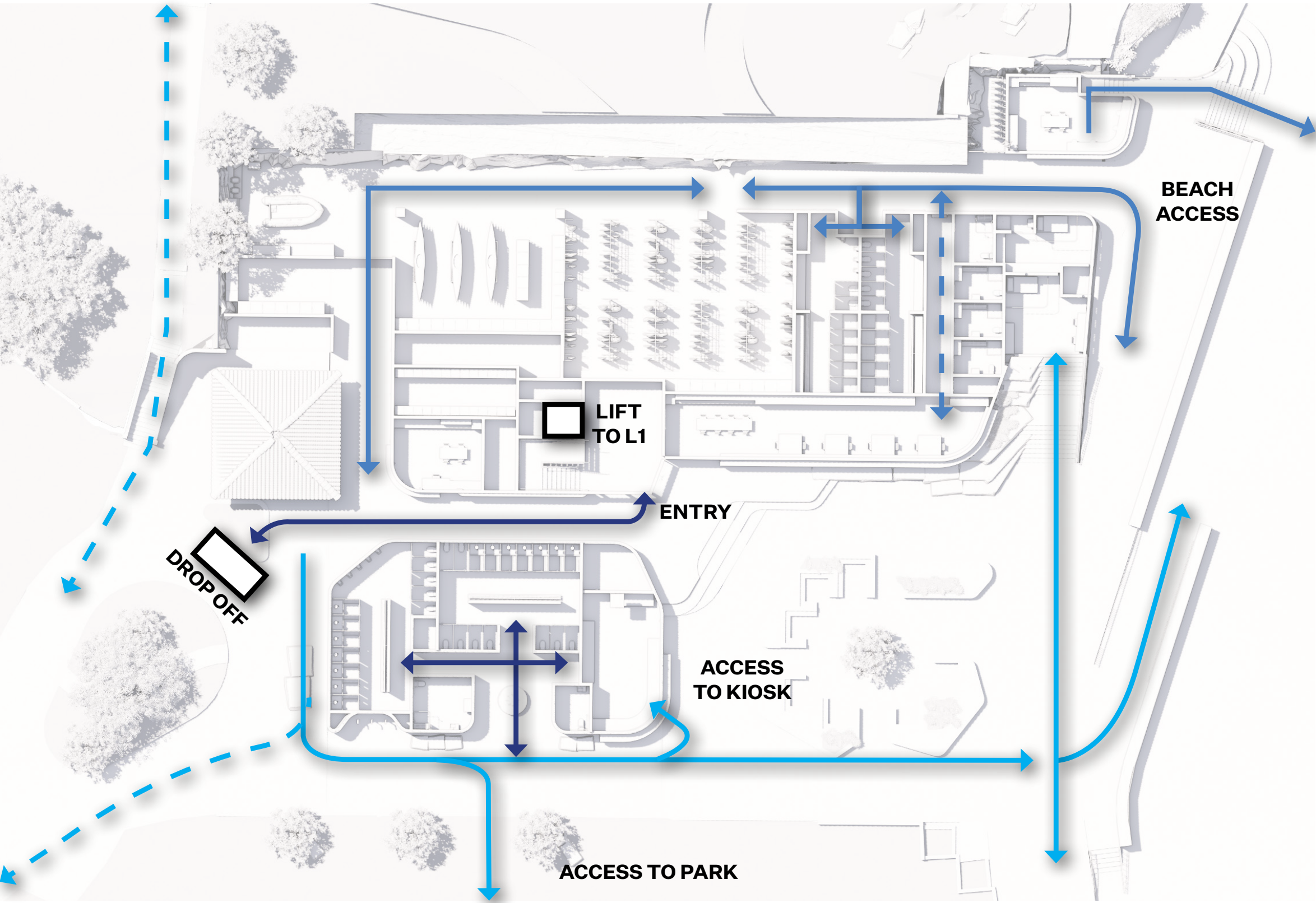
As a club it has the the most non-competition water training (boards and swimming) in comparison to other local clubs in direct response to the treacherous conditions providing a significant reliance on boards and board storage in adequately training volunteer surf life savers and providing surf life saving services to people in need.

It provides beach surveillance every weekend and public holiday from September to April, 9am to 6pm.

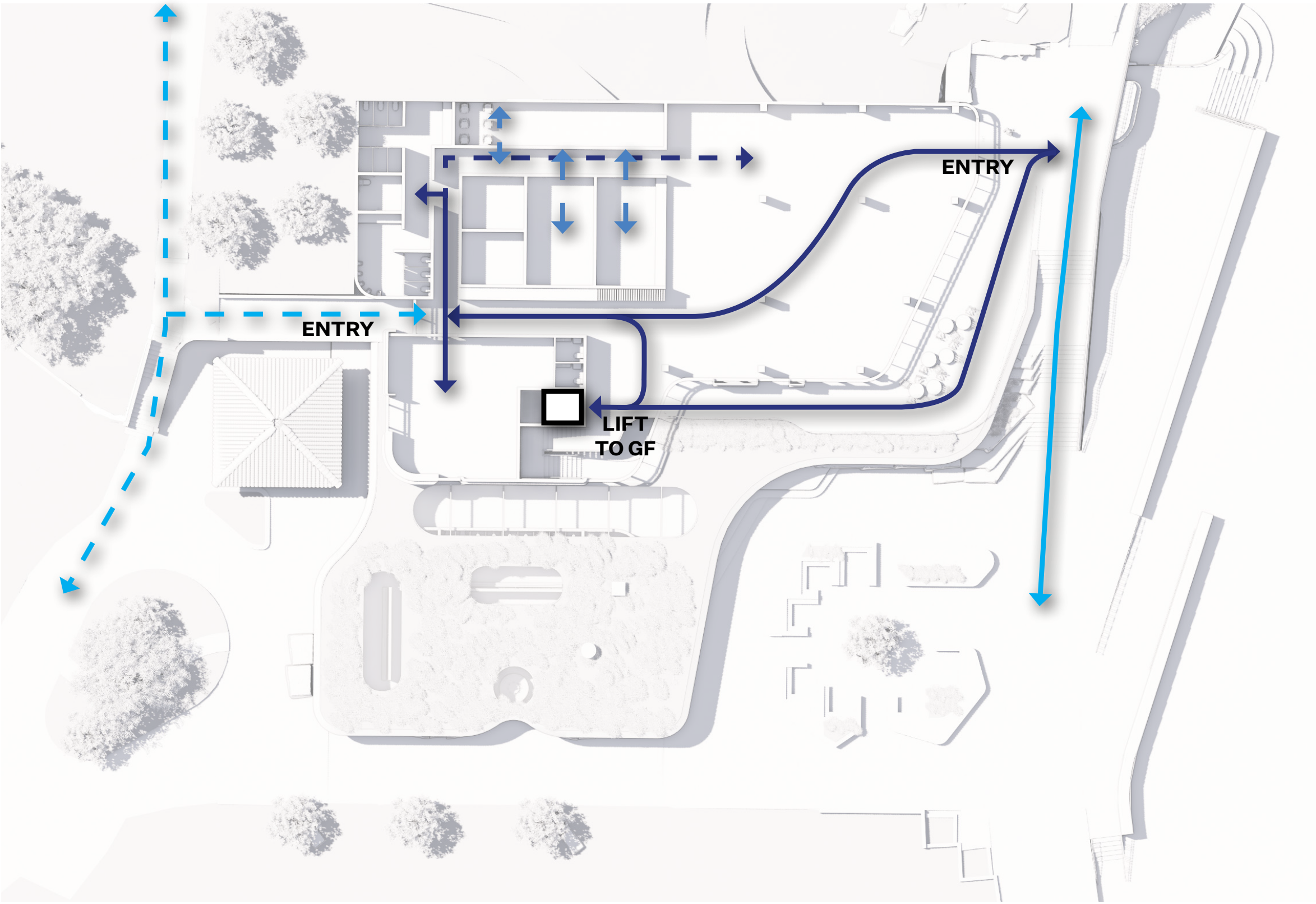


# Building Movement

- Key**
- Public Movement
  - Operation Movement
  - User Movement
  - Primary
  - Secondary



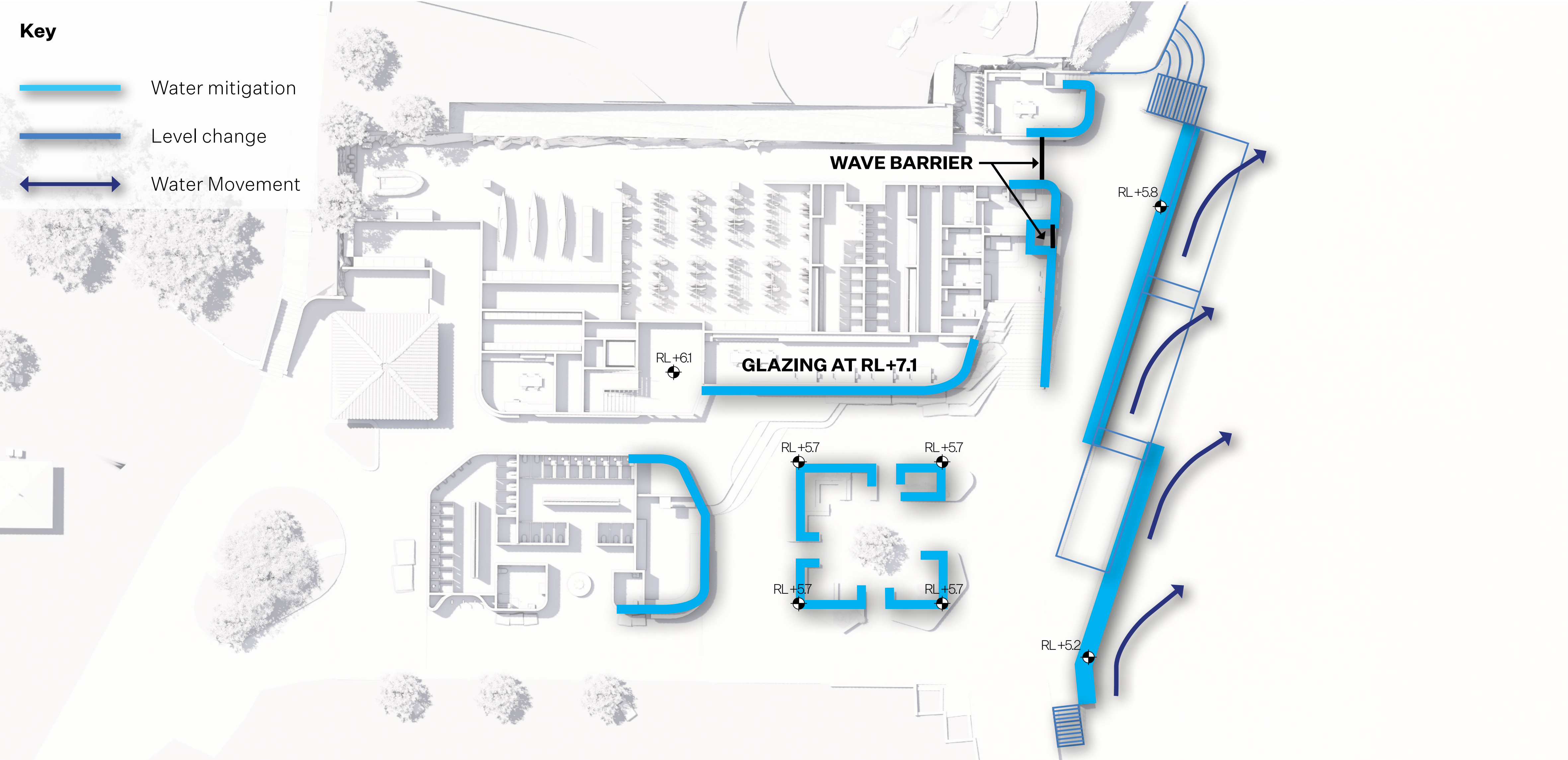
Ground



Level 01



# Promenade and Seawall





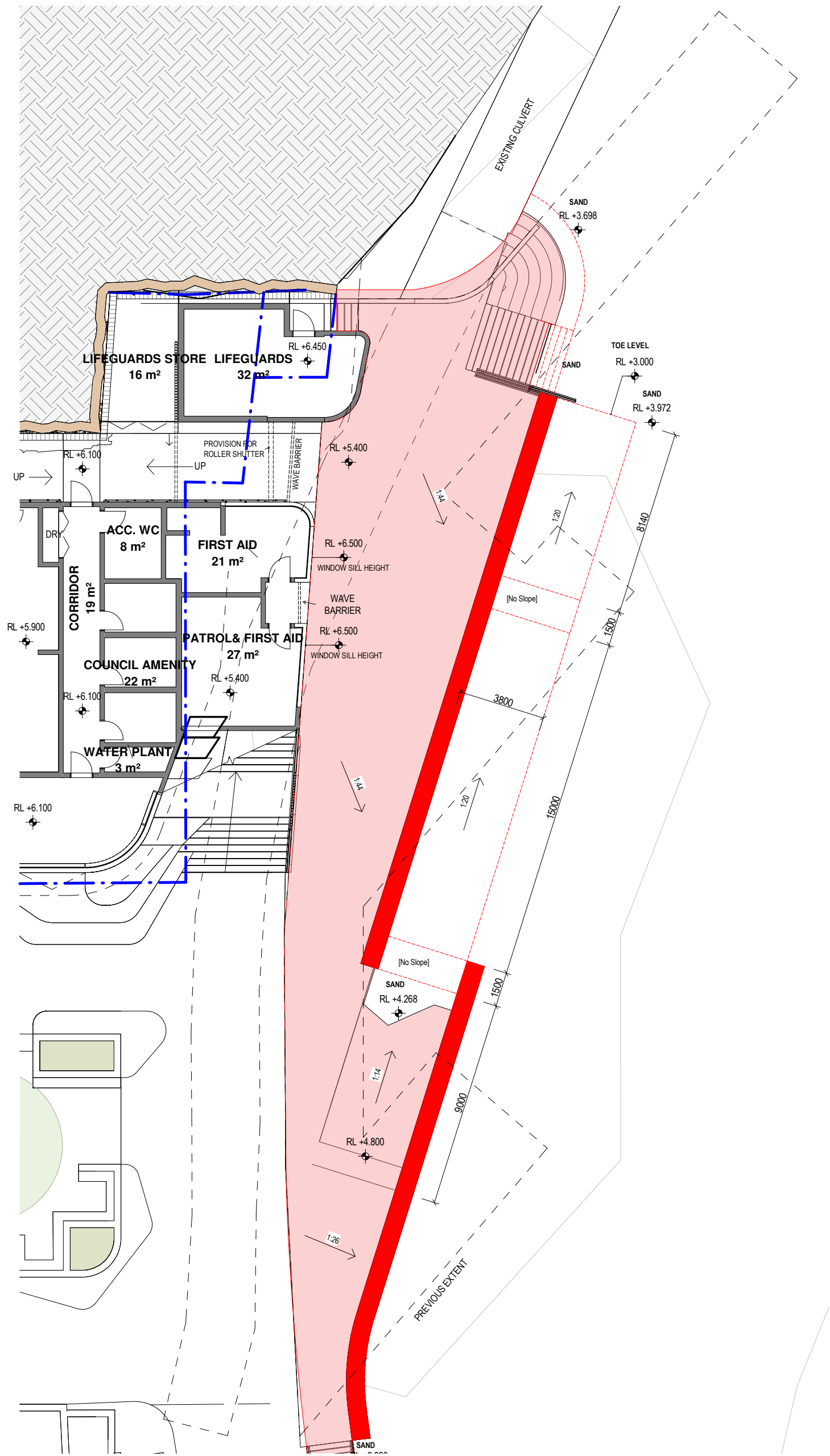
4.0 Coastal protection peer review

# Revised Design



# Ground Plan

PRELIMINARY

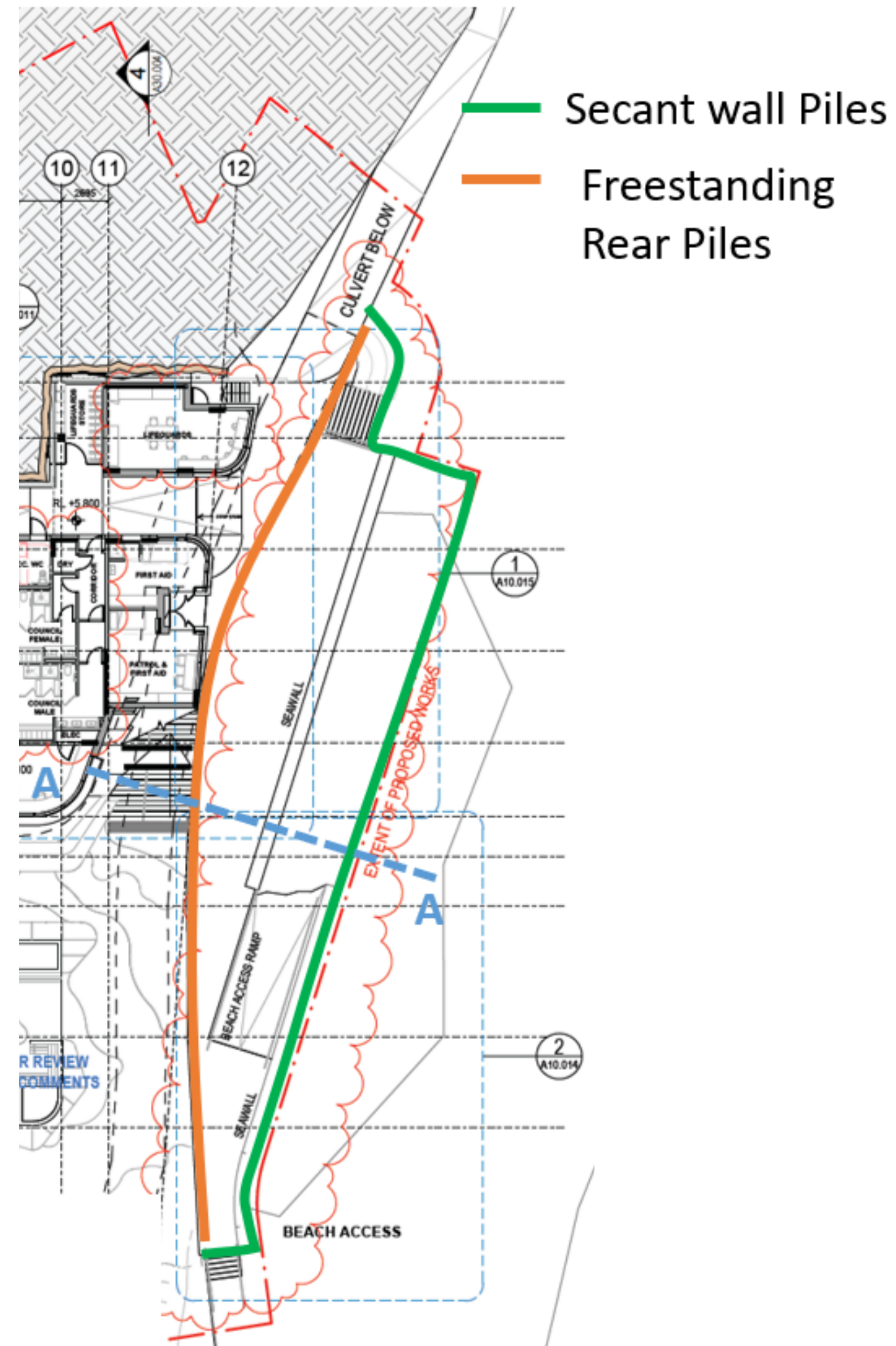


# Structural System (pre-concept)

RHDHV would consider feasible the option of combining secant pile wall elements and freestanding piles supporting the seawall spurs, ramps and steps and fully protecting the landward shoreline. This avoids the need to rely on the existing seawall to protect the SLSC.

This option therefore does two things – it supports the on-beach structural elements and acts as a seawall. The secant pile wall is formed by the installation of overlapping reinforced concrete (hard) and unreinforced concrete (soft) piles to form a continuous vertical wall along the shoreline topped with a reinforced concrete capping beam.

If the bedrock is elevated, then the piles may not be needed and a beam on rock solution should suffice. A suspended slab would infill the space between the capping beam and the seawall, and the ramps and steps would be integrated into the slab.



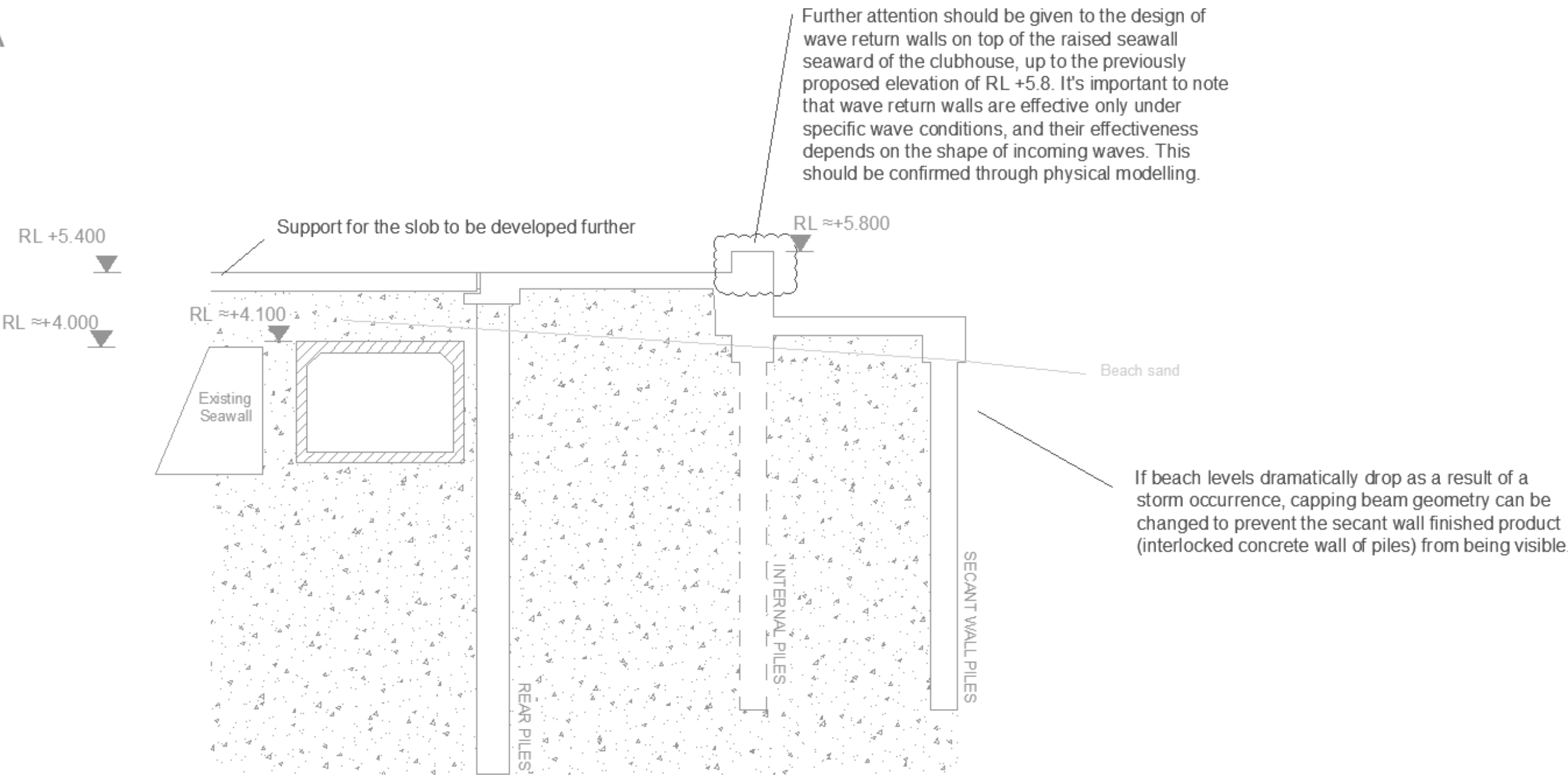
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## SECTION A-A



# View Analysis

SE aerial view - Previous design



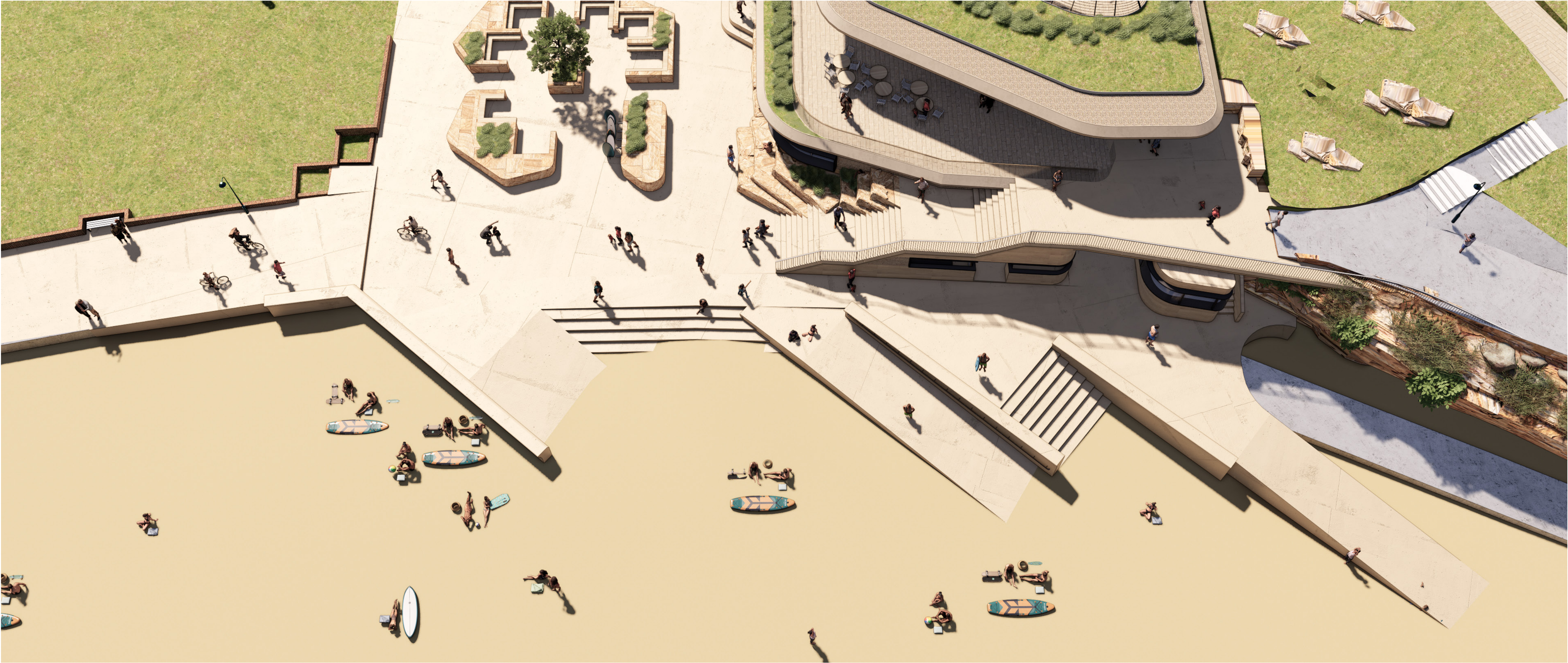
# View Analysis

SE aerial view - New design



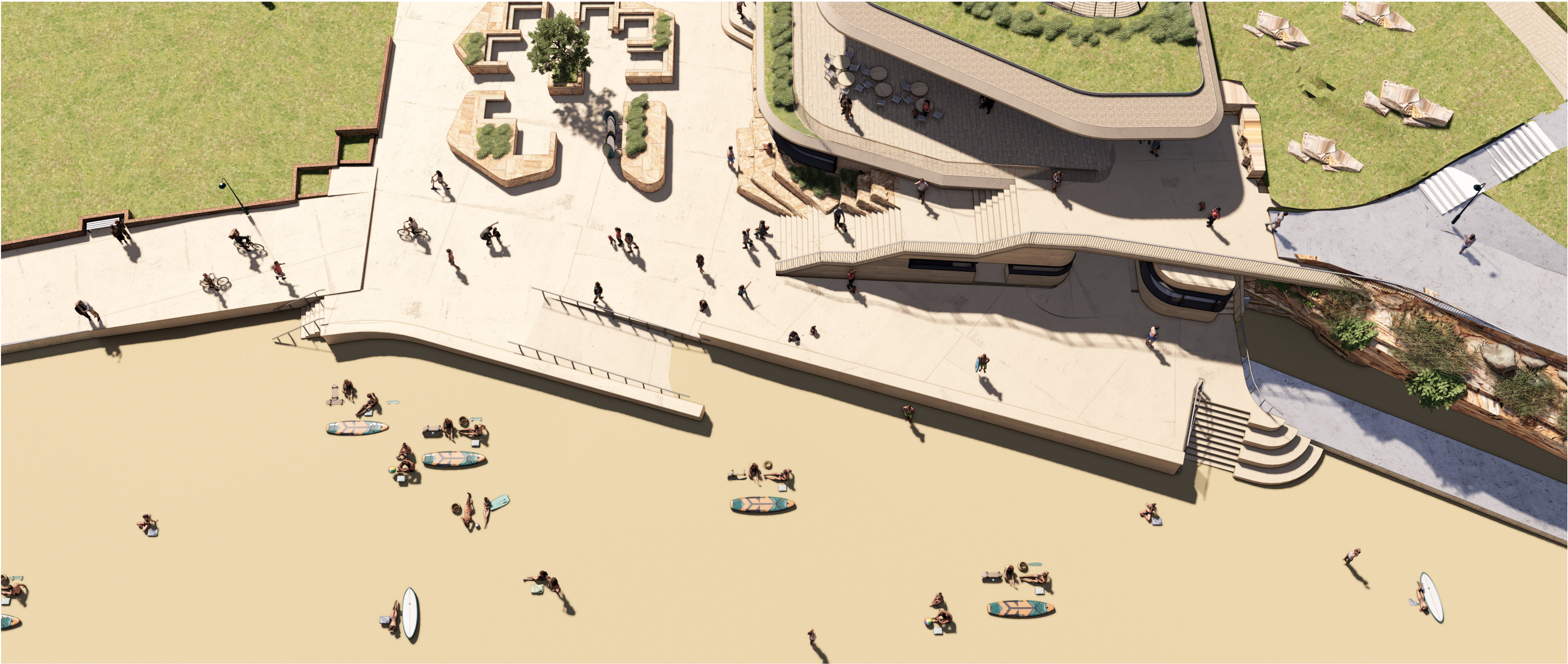
# View Analysis

Eastern aerial view - Previous design



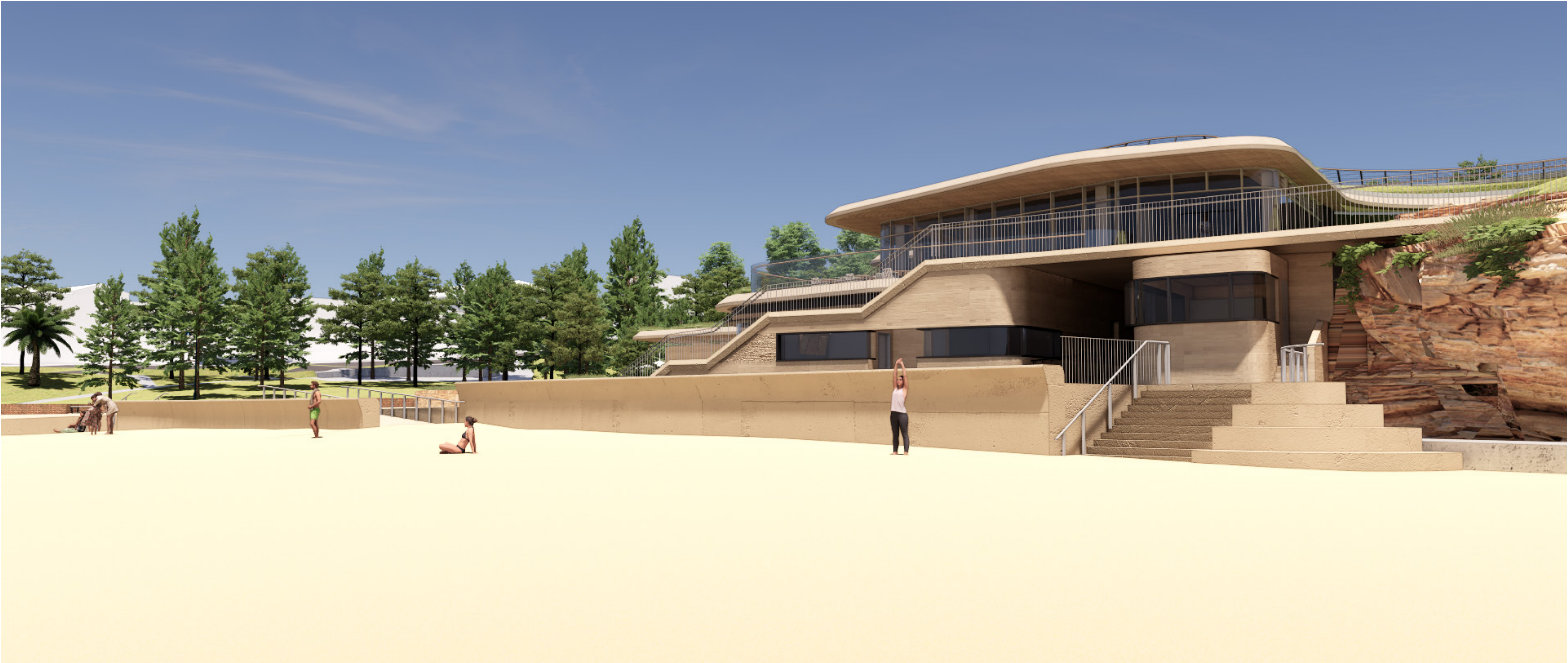
# View Analysis

Eastern aerial view - New design



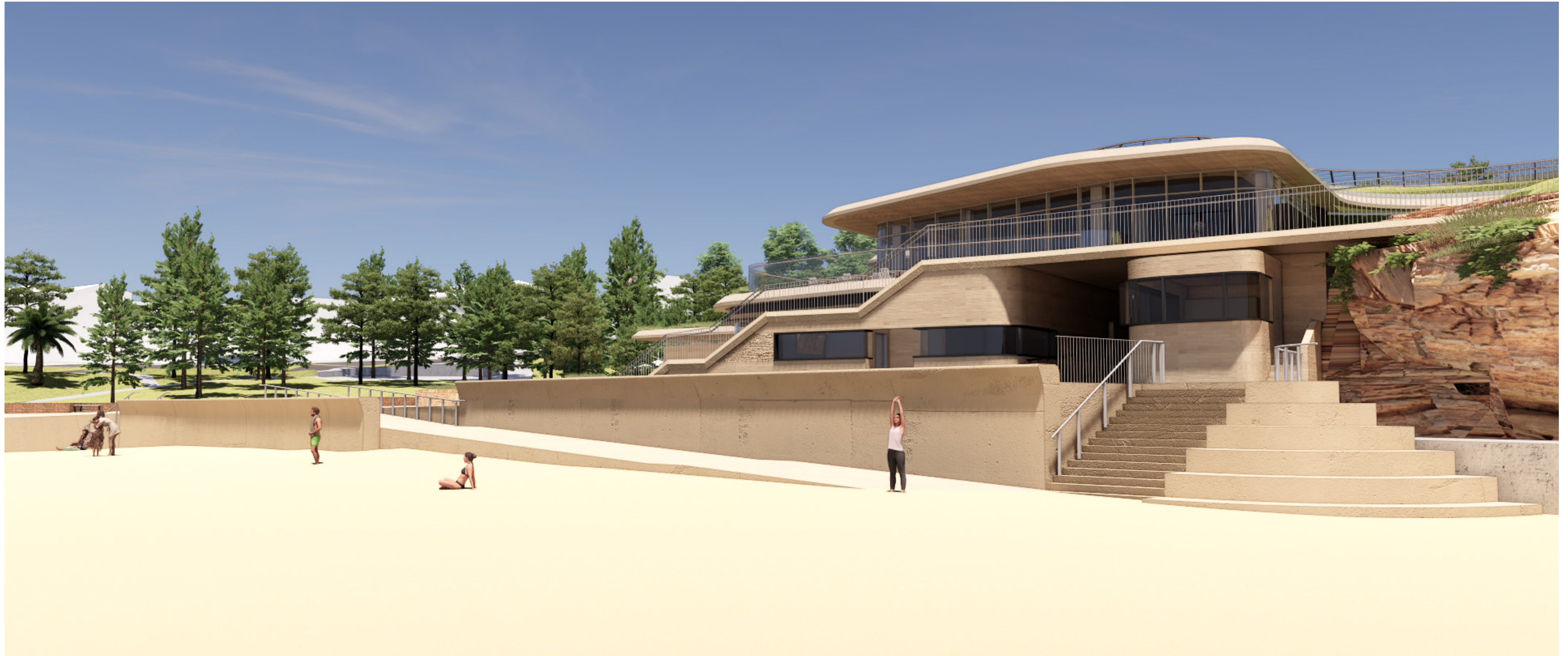
# View Analysis

Current sand levels



# View Analysis

Reduced sand levels



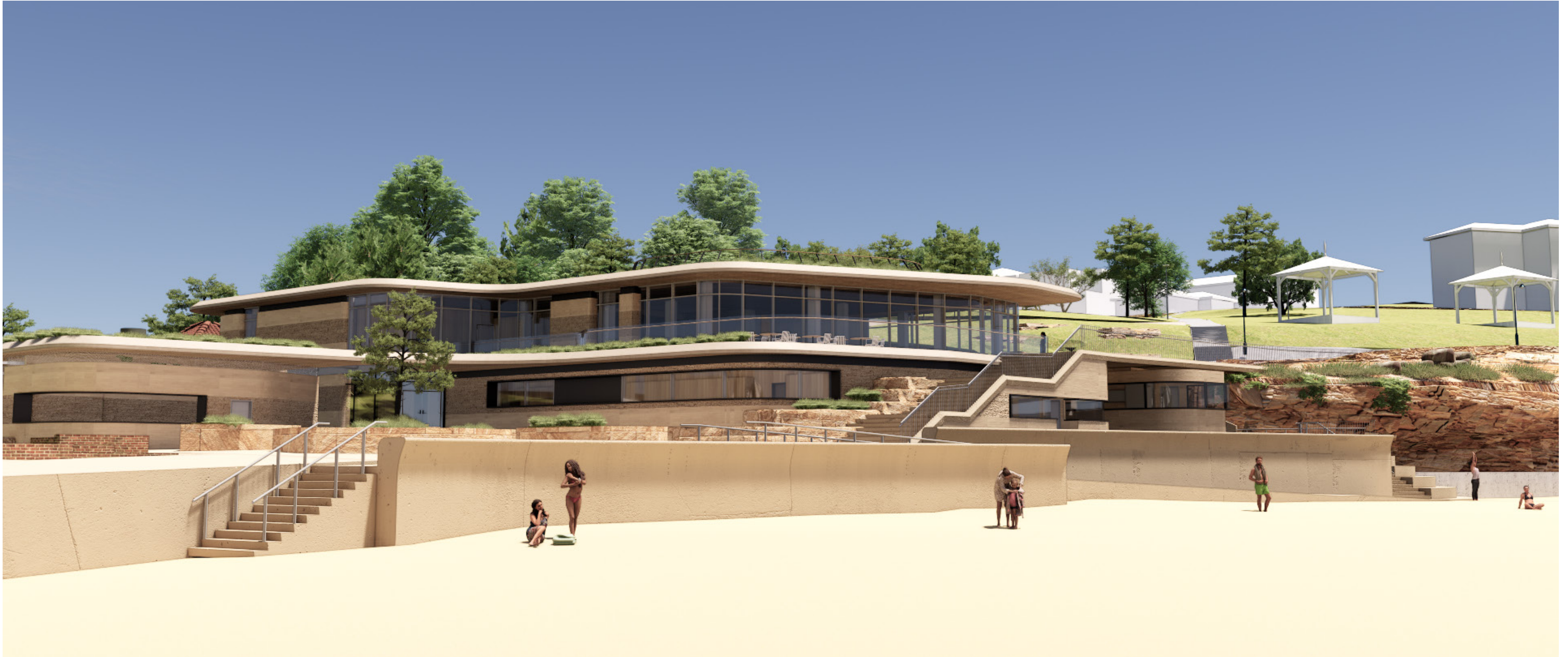
# View Analysis

Current sand levels



# View Analysis

Reduced sand levels



# Concept design development

## Concept design development and linkage to physical modelling (if required)

- **Functional Arrangement:** The layout for the redeveloped SLSC, promenade, and beach access has been carefully planned in consultation with users and the Council.
- **Coastal Hazards:** The SLSC is exposed to coastal hazards, primarily erosion and coastal inundation. A seawall is required to protect the facility.
- **Seawall Replacement:** The existing seawall at Bronte is no longer reliable and must be replaced to safeguard the new SLSC.
- **Seawall Structural Concept:** The structural concept for the new seawall includes secant piles, concrete slabs, and deflector elements. These are designed to meet wave runup and overtopping requirements.
- **Design Concept and Peer Review:** The concept design has been the outcome of lengthy consultation and would be subject to peer review and agreement in principle with the peer reviewer, including consideration of matters under the CM Act and SEPP. As such, there would not be expected to be any fundamental changes to the design concept as a consequence of the physical modelling but rather only refinement of the engineering details, eg wave return wall geometry and wave loading.
- **Wave Loading for New SLSC:** The SLSC building is a new build hence wave loading determined from the physical modelling can be readily taken into account in the structural design, as opposed to any uncertainty whether an existing structure could be feasibly retrofitted/strengthened.





Thank you

