

4.1 Siting and Massing

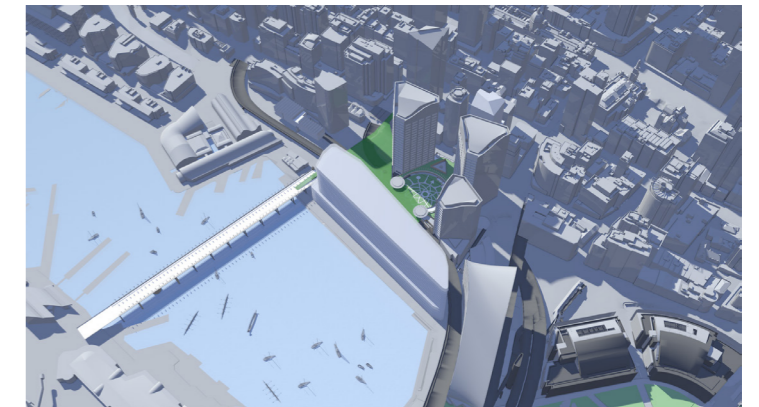
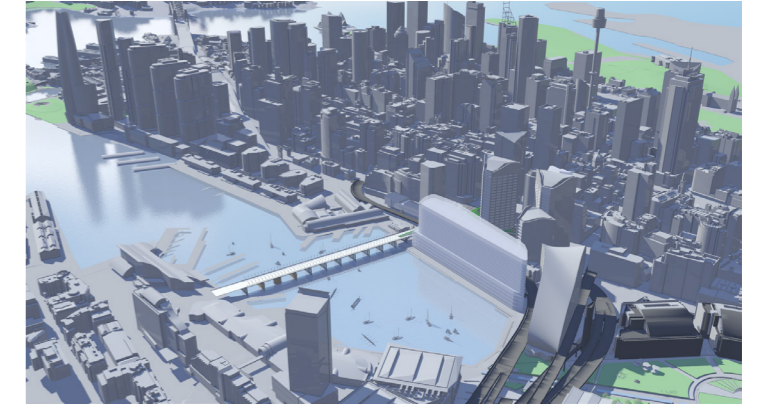
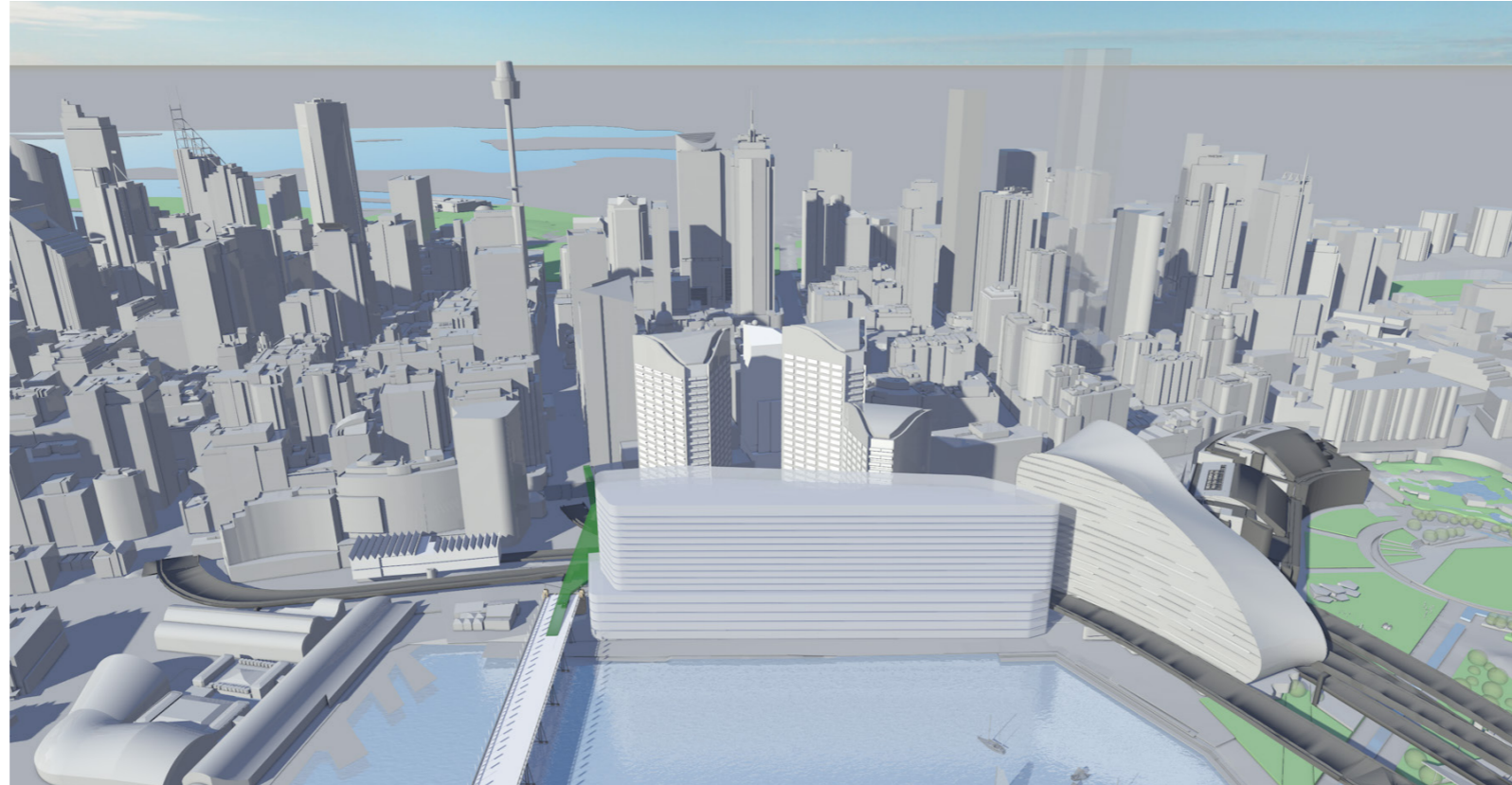
Massing studies were carried out exploring a range of heights, tower locations and built forms. The following studies are of a scale required to deliver on the public connectivity ambitions for the site.

Podium Wall

This option considers a single podium wall form across the full length of the site.

By occupying the full site, this option is the lowest height

This option occupies the full elevated ground plane with built form and limits view sharing, adds overshadowing to the foreshore and visual bulk from the water promenade

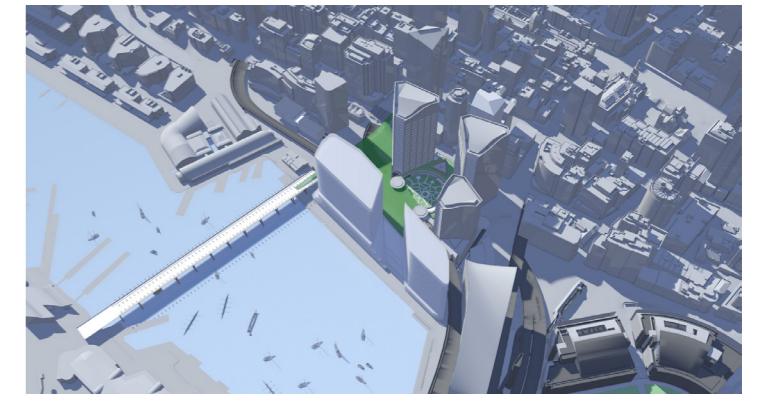
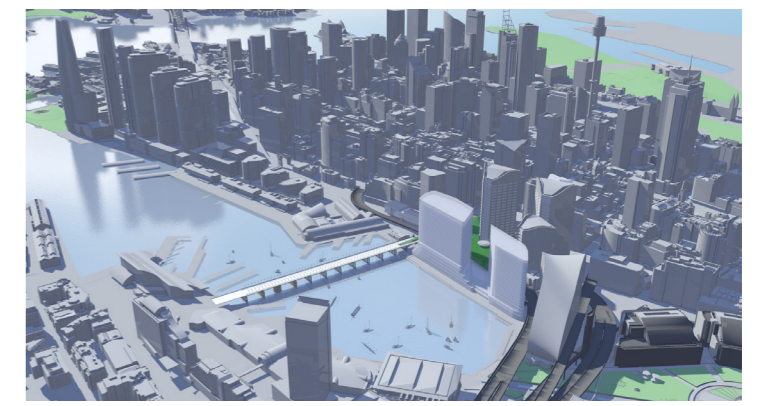
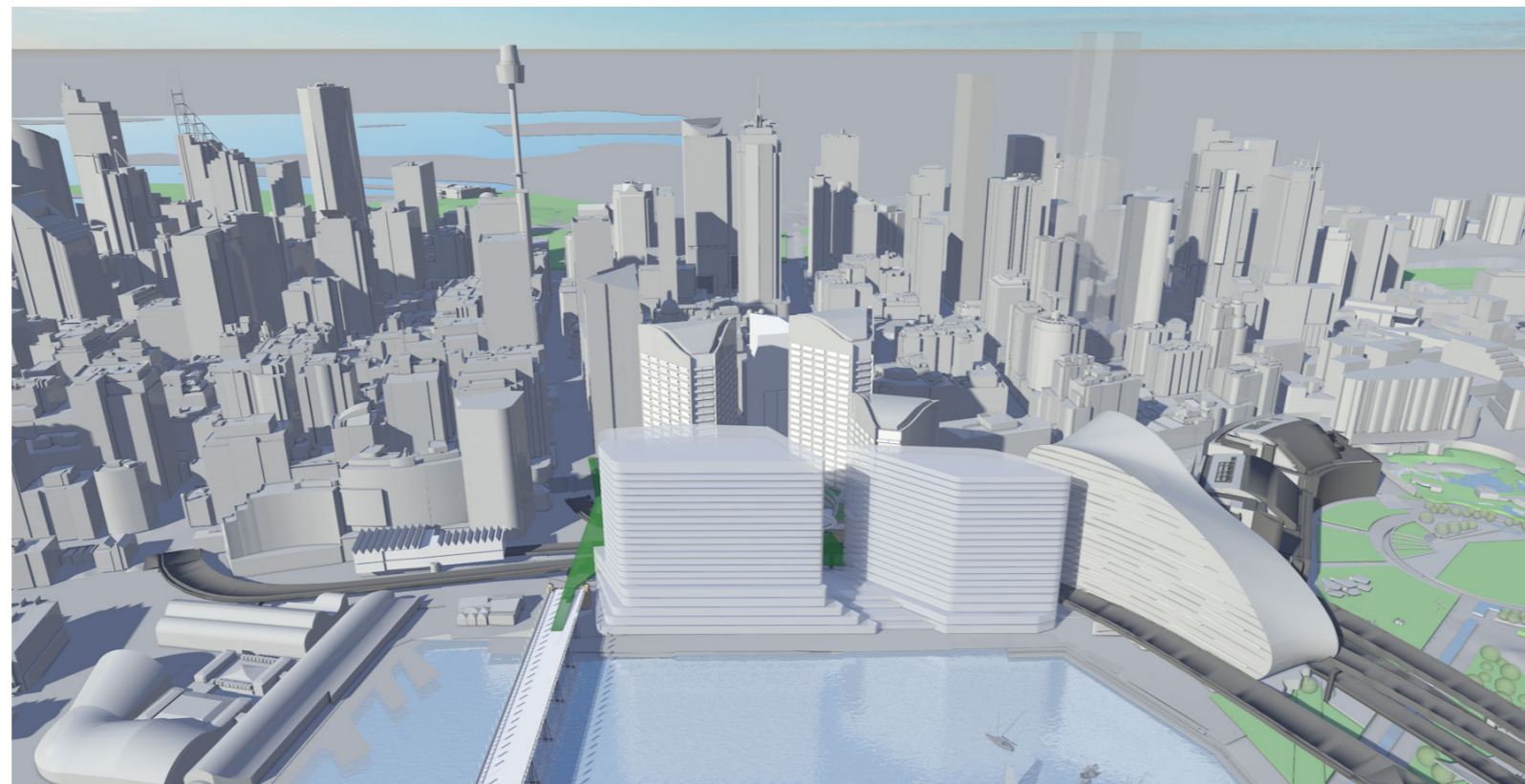


Podium Split

This option is the same as the Podium wall option except it creates a through site link from Market Street terracing down to the water promenade.

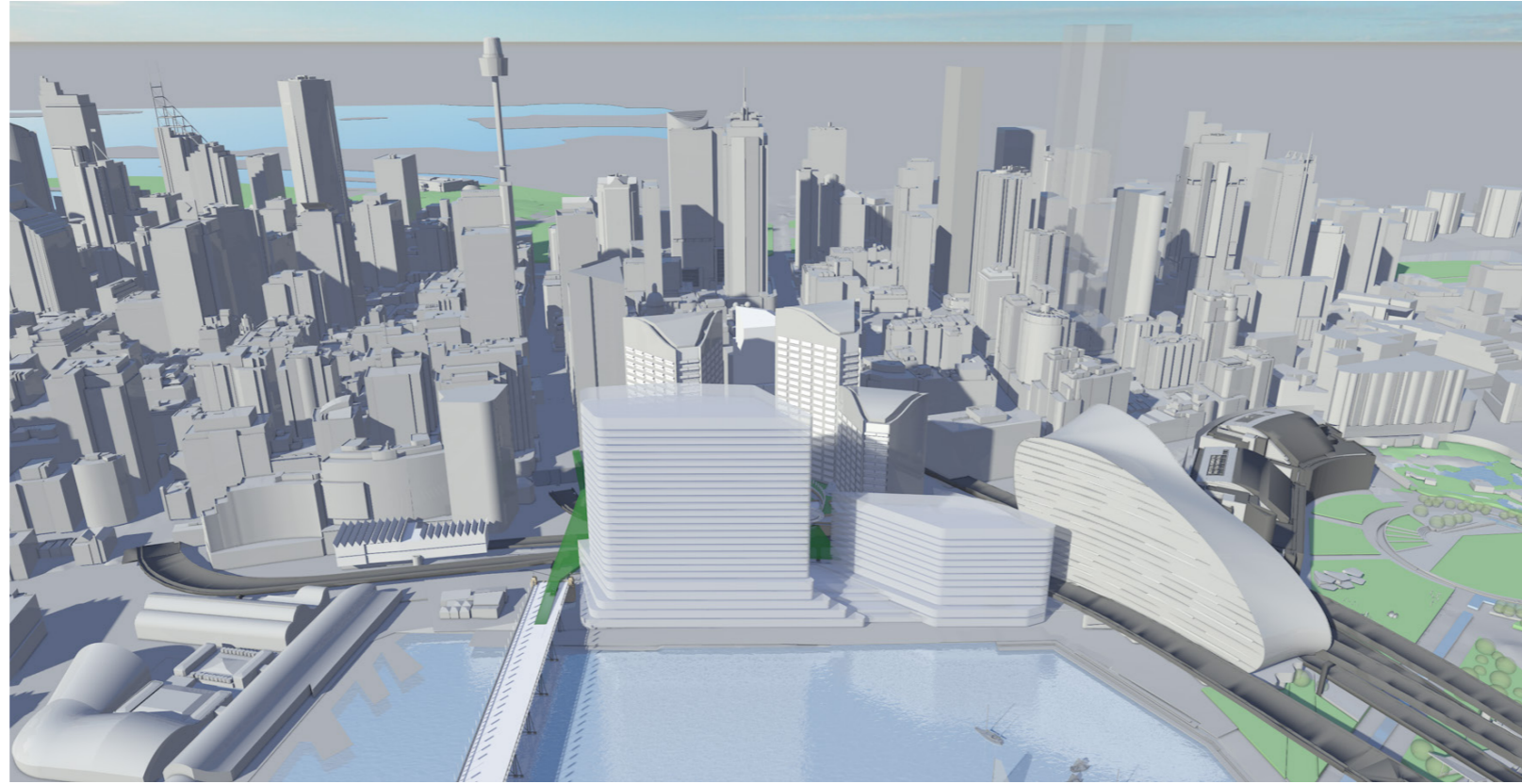
The central area is redistributed to additional height on dual podium forms.

The elevated ground plane is still filled with built form and view sharing is limited.



Podium Unequal

This option is a development of 'podium split' with area redistributed from the Southern podium (similar height to adjacent ICC) to the Northern form (similar in height to adjacent Darling Park 1 tower). This allows partial improvement to view sharing from The Ribbon and Darling Park 3, but is still a major barrier to other buildings and residents.



Tower Form Mid

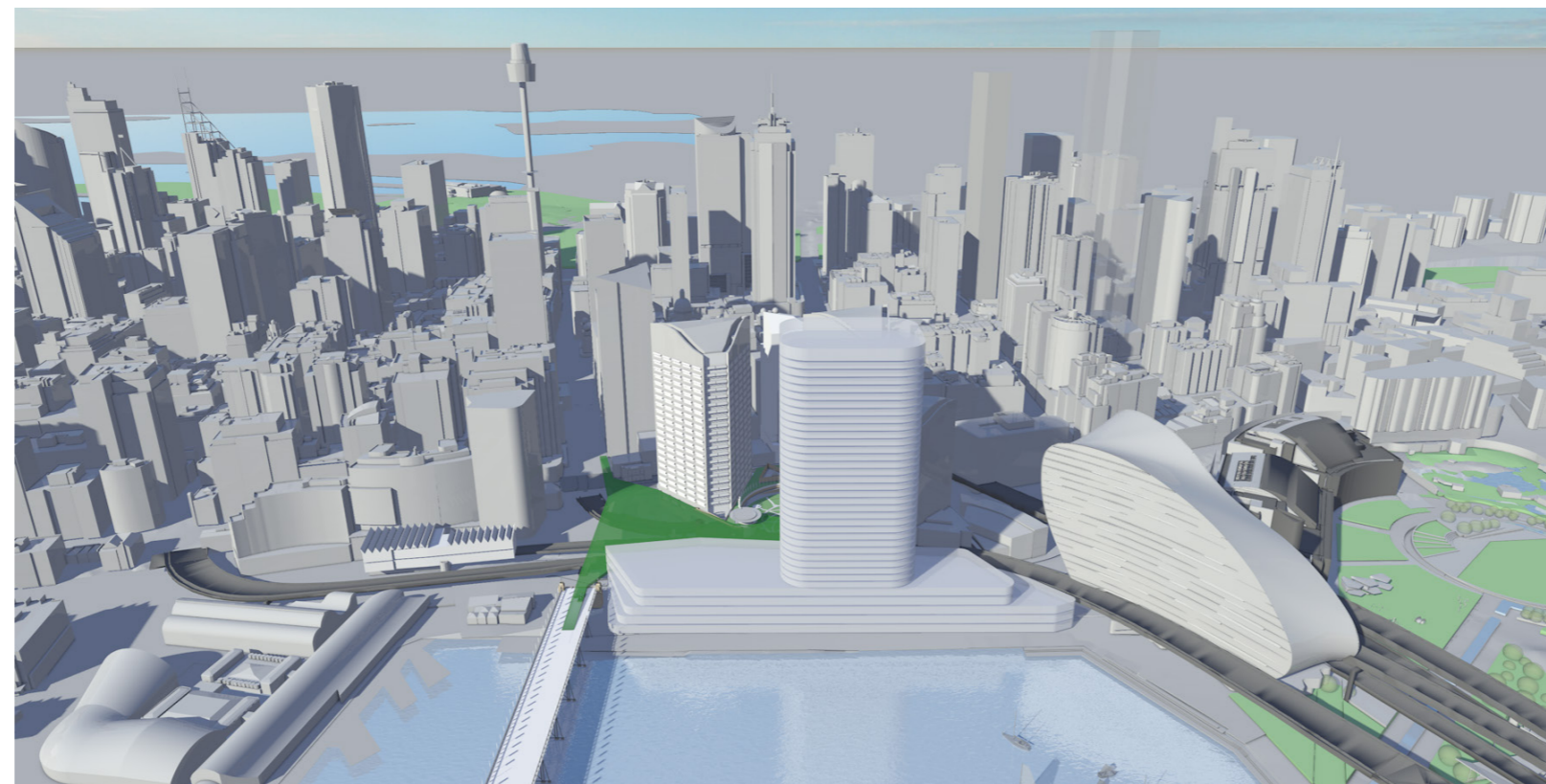
This option positions the tower form to central part of the site. This option lowers the height of the building by the proposed Tumbalong Park solar plane and redistributes onto a wider bulkier footprint. This reduces the buildings potential slenderness.

This option has similar attributes to 'Mid North' in dividing and reducing the open space on the elevated ground plane, deleting terracing, and compromising view sharing.

There is marginal overshadowing difference from Tower form North to the proposed Town Hall Square.

The tower form in mid location is in a narrower part of the site restricting the available build area.

This location is also forward of the sea wall complicating buildability issues.



Tower Form Mid North

This option is the same as a similar tower form but is shifted South. The height is lower than 'Tower Form North' as it is sliced by the proposed Tumbalong Park solar plane. The lowered height is redistributed to a wider tower form.

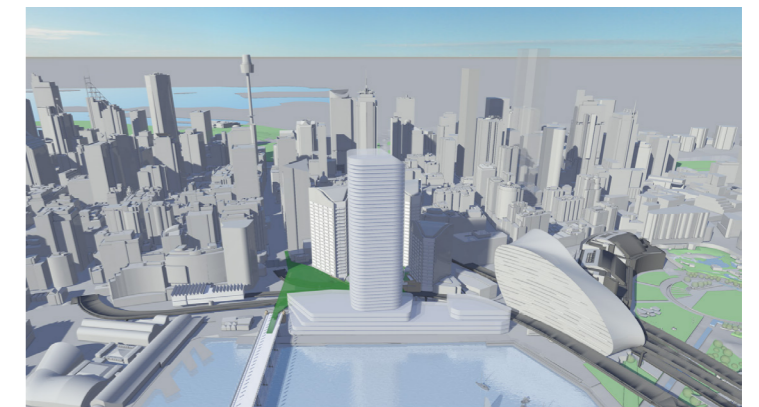
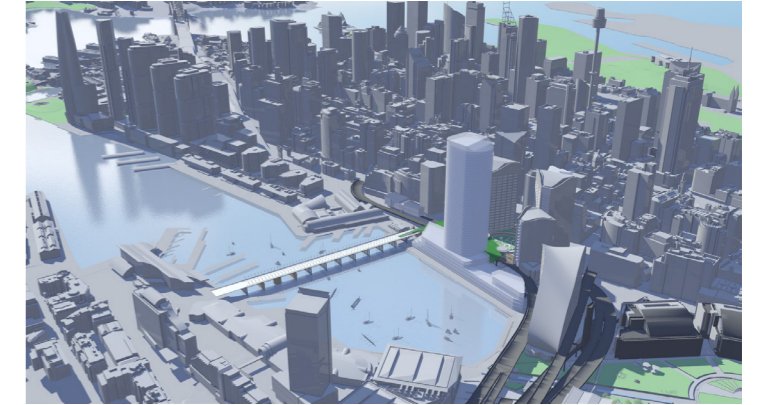
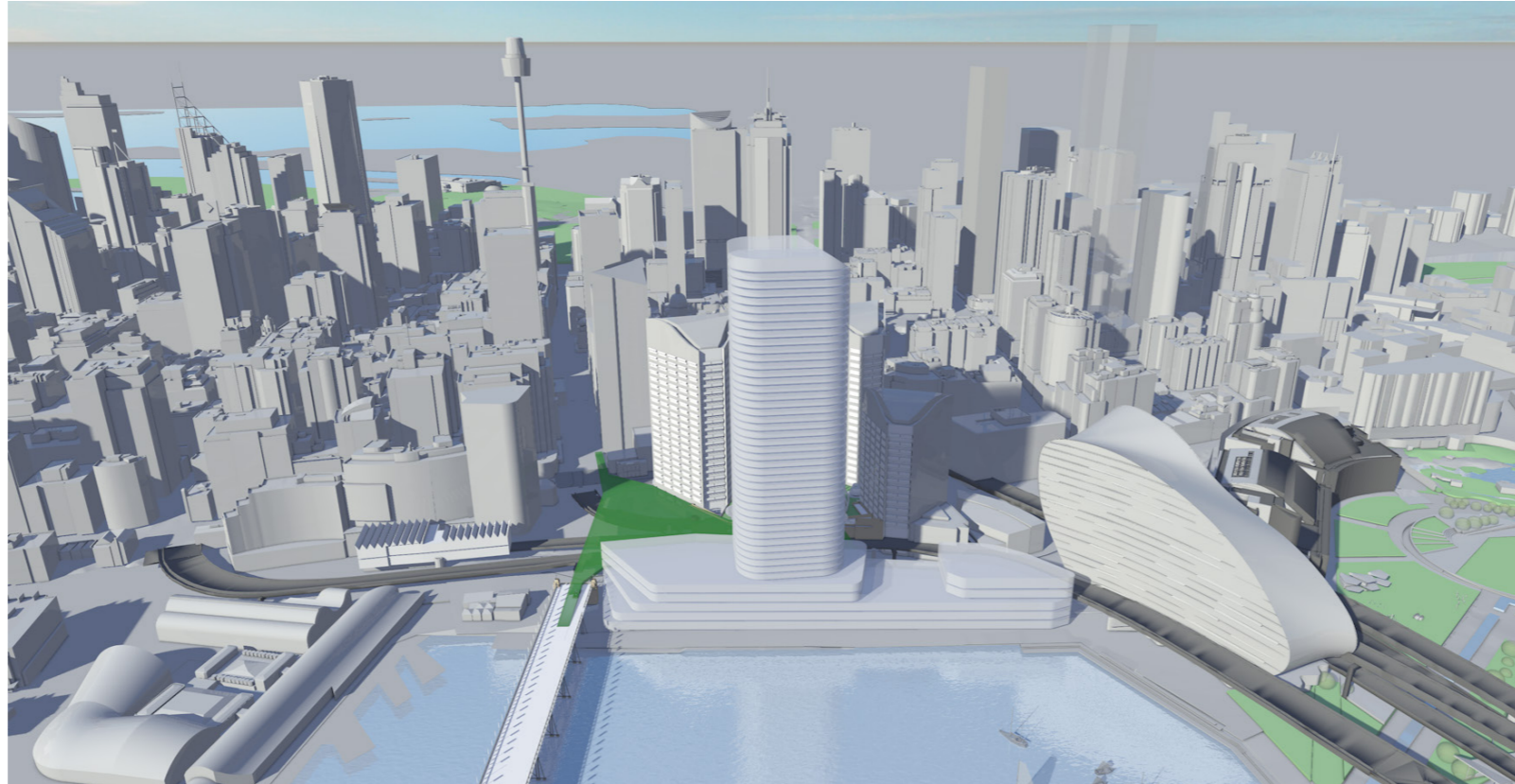
There is marginal overshadowing reduction from Tower form North to the proposed Town Hall Square.

This option divides the open space on the elevated ground plane, and deletes the terracing down to the Waterfront. This is because terracing can not manage the height difference in a shorter distance when limited to the North.

View sharing is partially blocked for Darling park Towers and significantly compromised for the adjacent existing residential development.

The tower form in mid north location is in a narrower part of the site restricting the available build area.

This location is also forward of the sea wall complicating buildability issues.

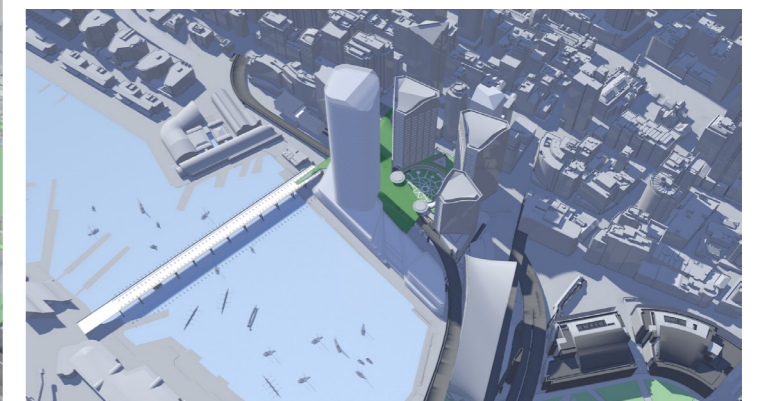
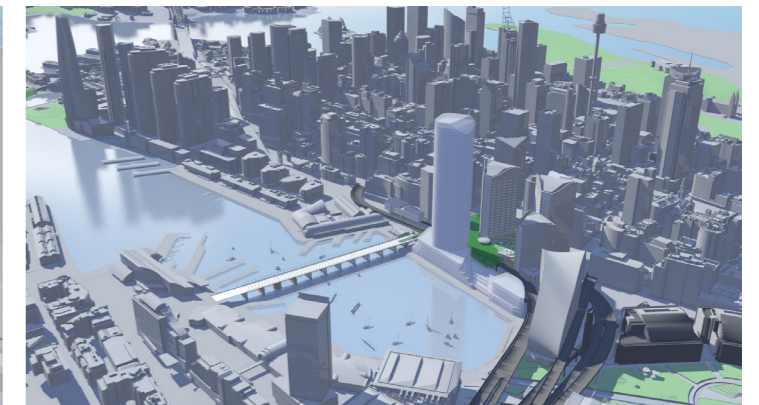
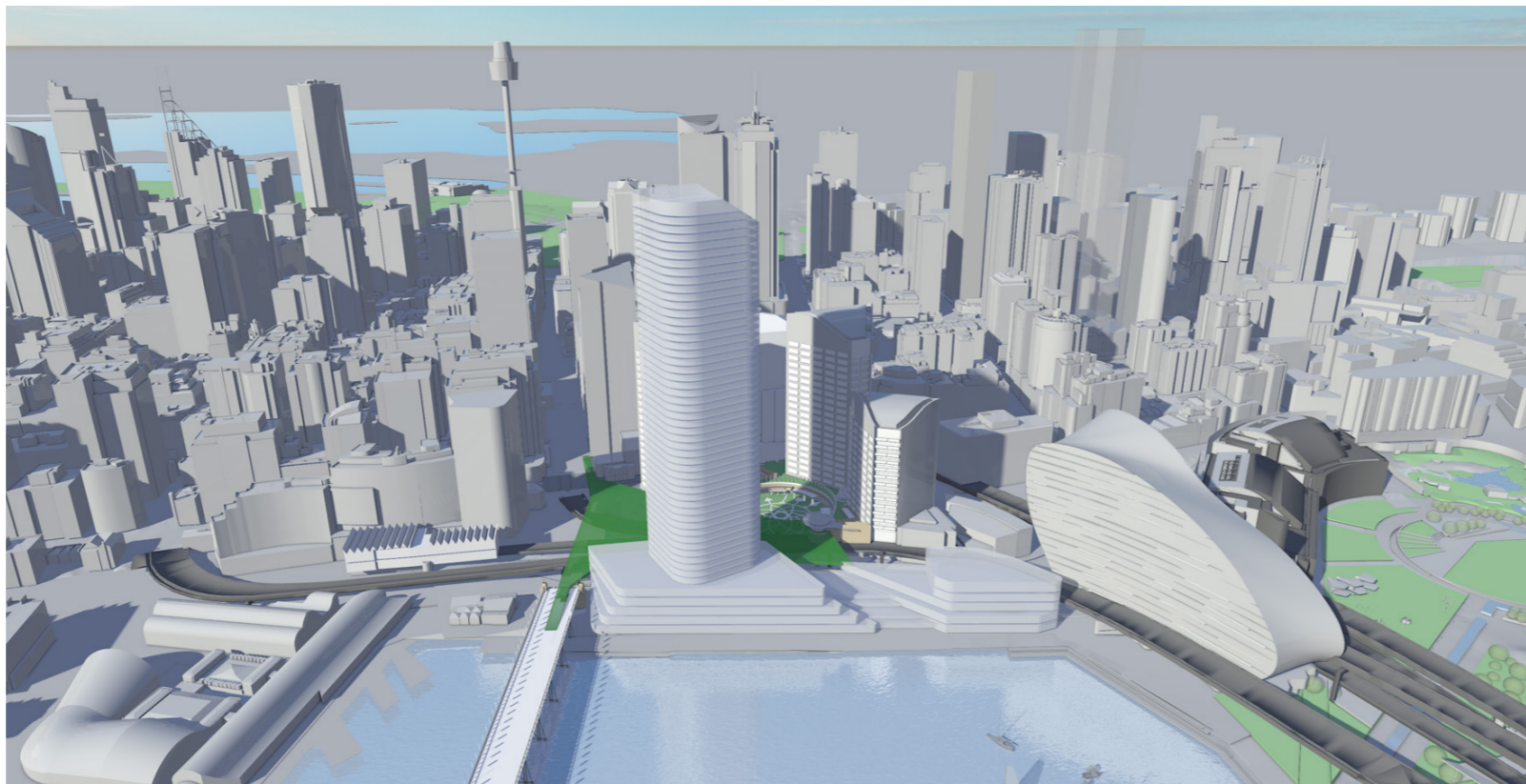


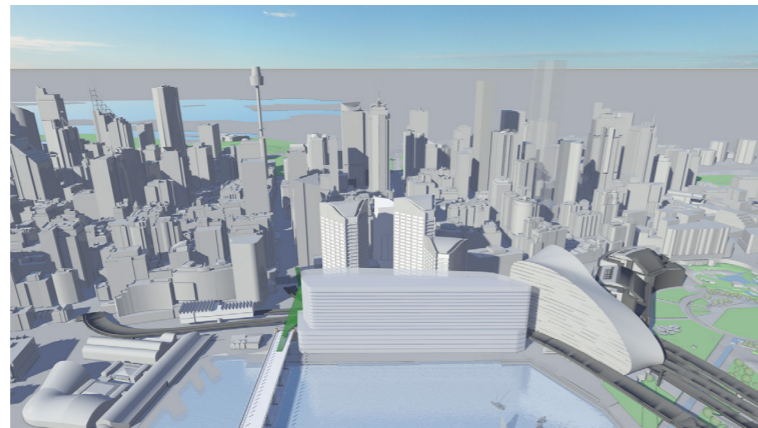
Tower Form North

This option redistributes the majority of above podium area to the North and increases the height to a slender tower form. The height is set to maintain mid winter solar access to Tumbalong park and maintains the Market Street vista. Holding the area to the North allows the potential for an expansive publicly accessible open space, terracing down to the waterfront.

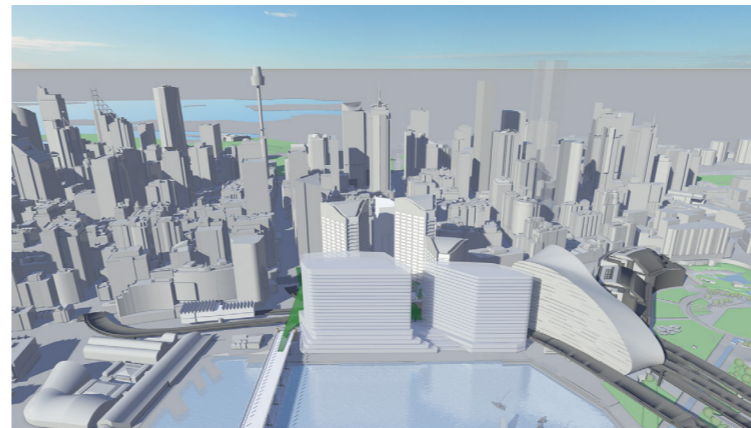
It also maximises public access to open space and the foreshore.

To the South is a single storey events space with a feature roof. This option maximises the view sharing between Darling Park towers, The Ribbon and the private residences 'Astoria' to the harbour.

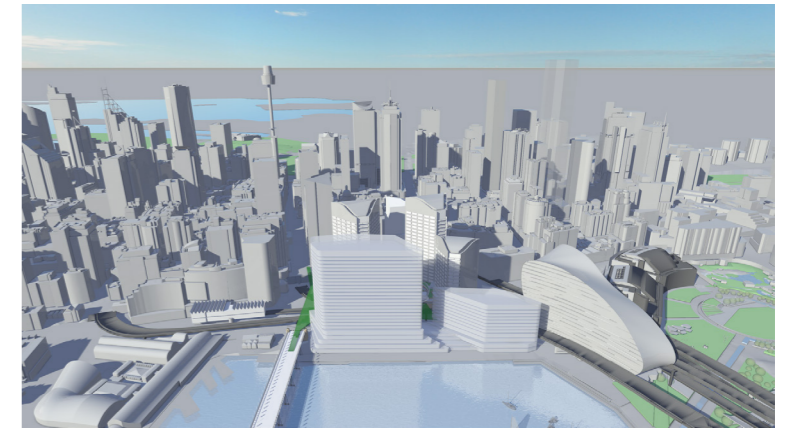




Podium Wall



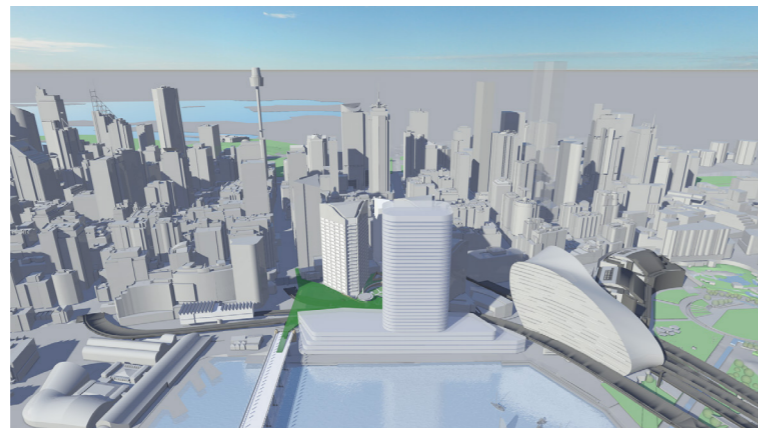
Podium Split



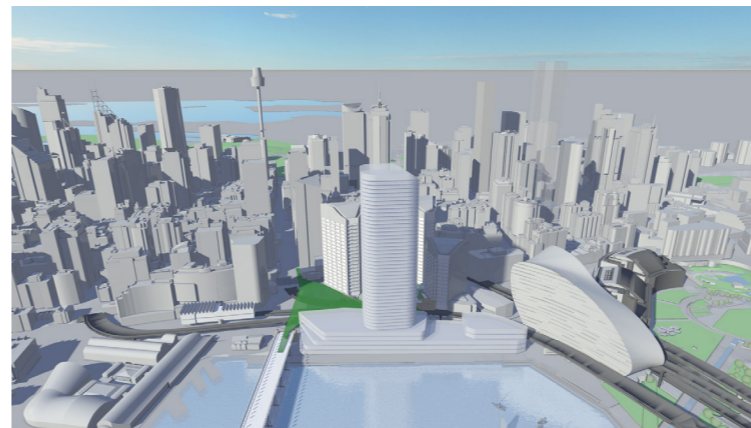
Podium Unequal

Benefits of Tower Form North

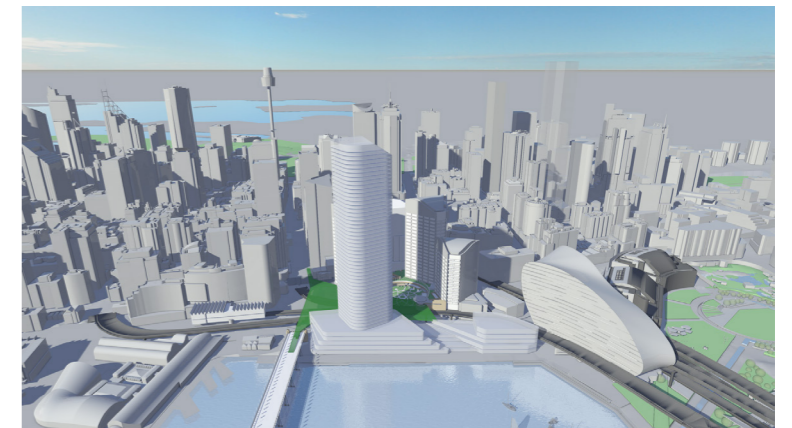
- Setback from site boundaries, creates open space around form that provides light and air to the pedestrian levels
- More available open space with solar access - public benefit
- Slender / landmark tower
- Scale of podium to the waterfront minimised
- Overshadowing of the foreshore limited to local area
- View Sharing amongst adjacent developments improved
- Tower at the widest section of the site, and inboard of the existing sea wall



Tower Form Mid



Tower Form Mid North



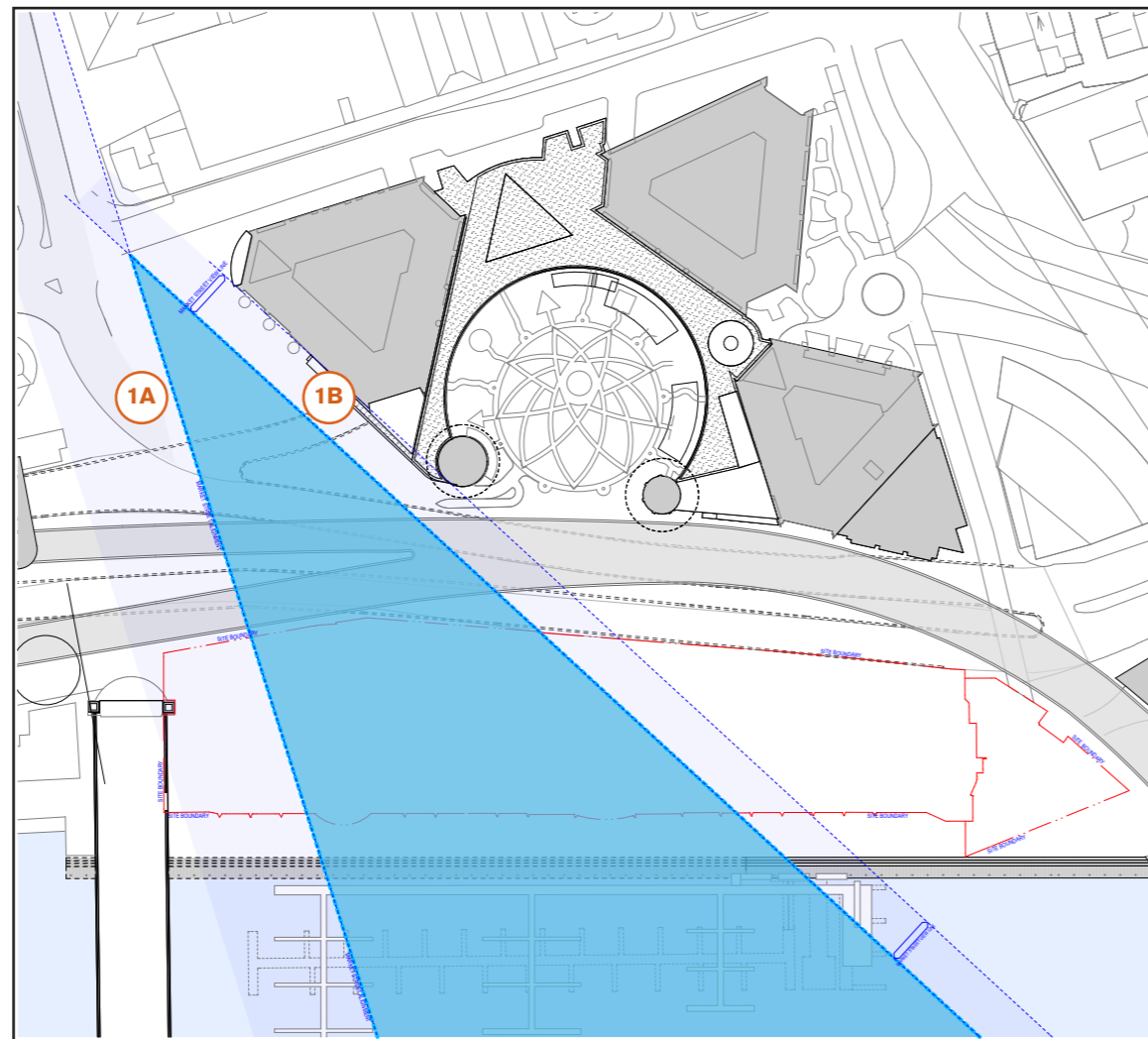
Tower Form North

4.2 Setbacks

Tower Setback

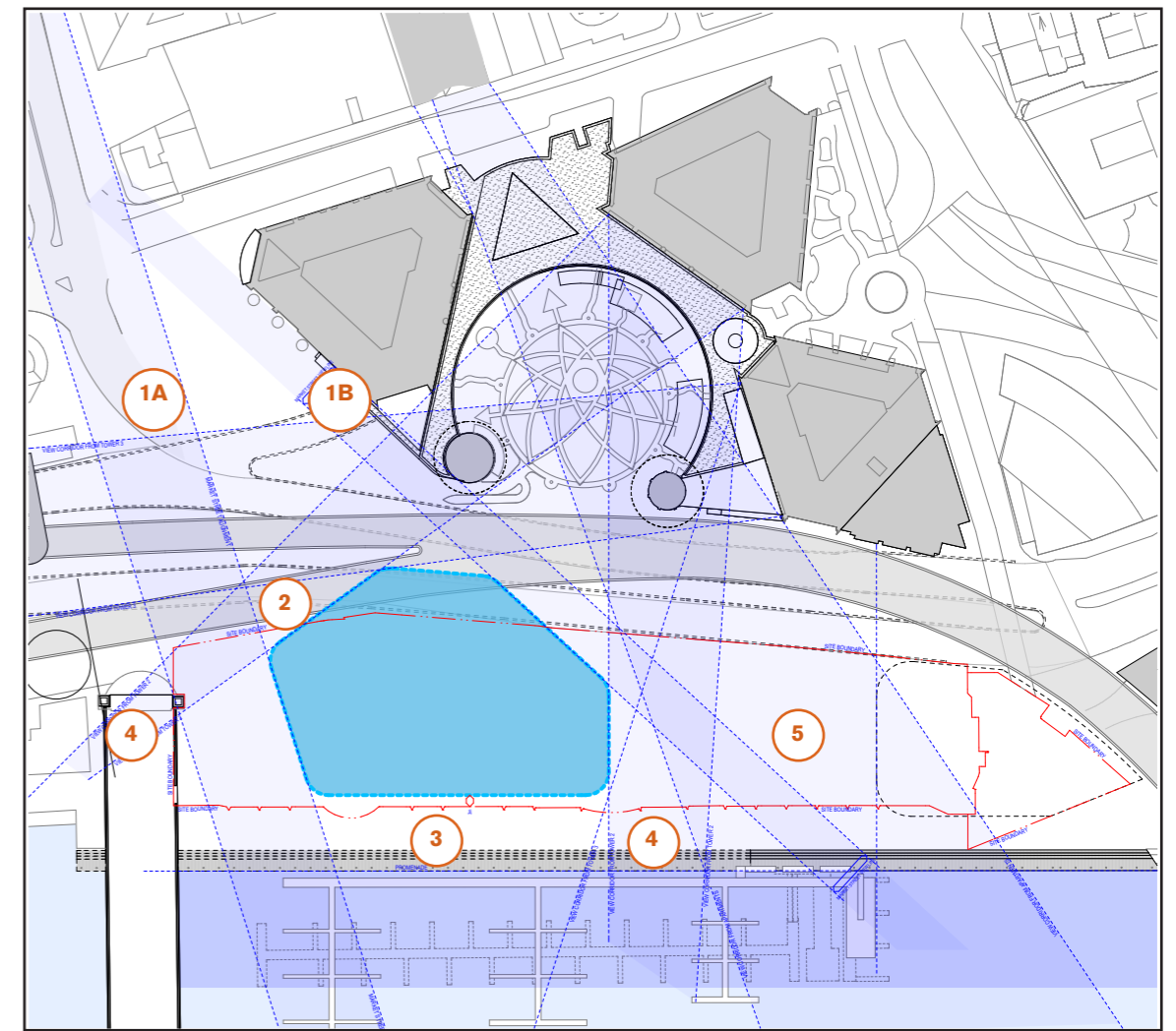
Objective

Towers should setback above the podium form to allow access to sky and light. Unlike the typical condition described in the LEP 2012 as being developments either side of a street, the Cockle Bay wharf site benefits from the additional exposure to solar and daylight from the waterside.



1. Market Street Vista Setback

The Market Street setback line originates from the alignment of the street wall edge on Market Street, extending westwards. Holding the tower built form behind this line means limits the visual presence of the tower envelope as you approach the harbour from the city.

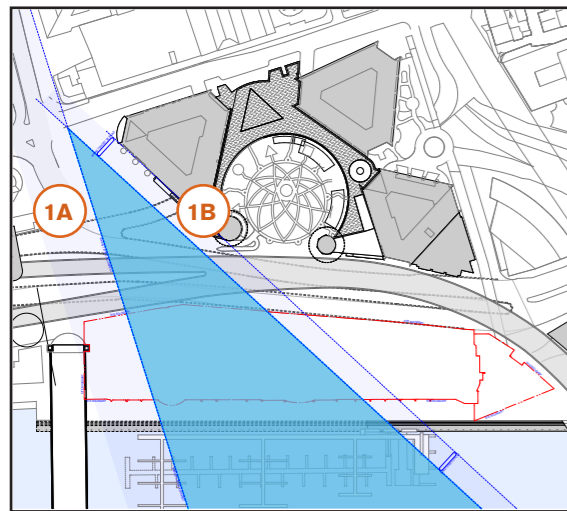


6. Proposed Setback Envelope

The derived footprint is a culmination of all setback planes considered. Small rounding is assumed in the envelope for view access and softening wind acceleration around corners. Additionally, to limit bulk and scale, and allow for a slender tower form, development within this envelope is not to exceed 60% of the maximum envelope. Details of these provisions are contained in the following pages.

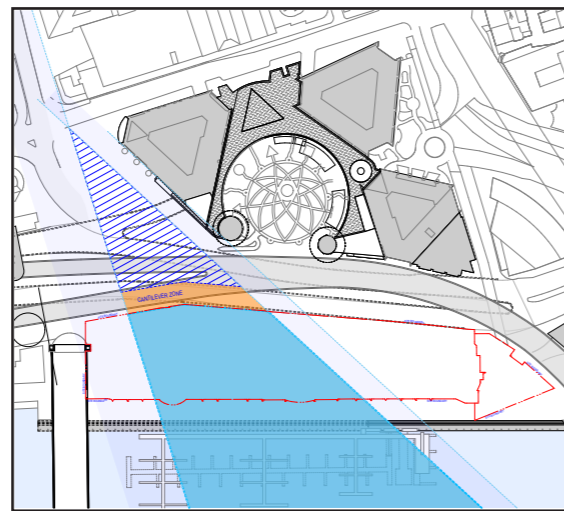
Controls

A range of setbacks have been considered to respond to a range of site specific conditions.



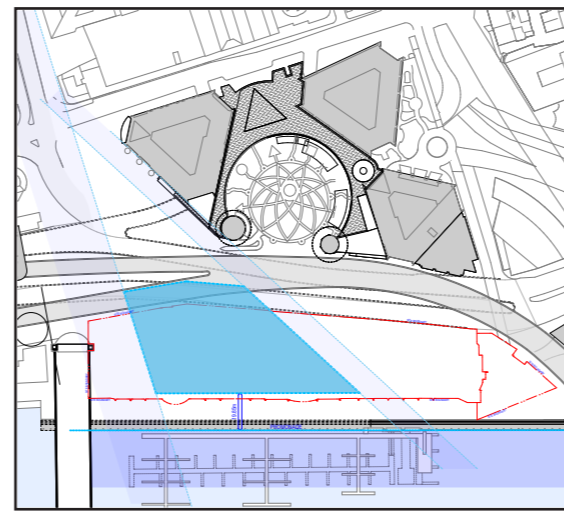
1 Market Street Vista Setback

The Market Street setback line originates from the alignment of the street wall edge on Market Street, extending westwards. Holding the tower built form behind this line means the tower envelope is less visible from Market street on approach from the city.



2 Eastern Setback to freeways

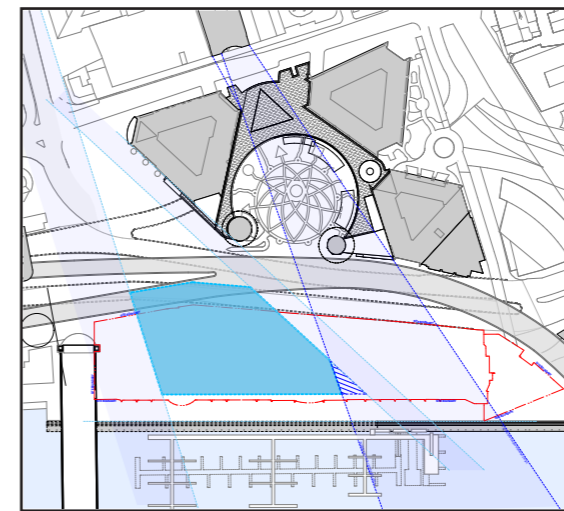
The envelope is limited to the east by the extent the envelope can cantilever over the the Western distributor and Harbour Street. Through further design, all core and vertical supports shall land westwards, with sufficient width and head clearance to allow continued operation of the Freeways



3 Waterfront setback - podium

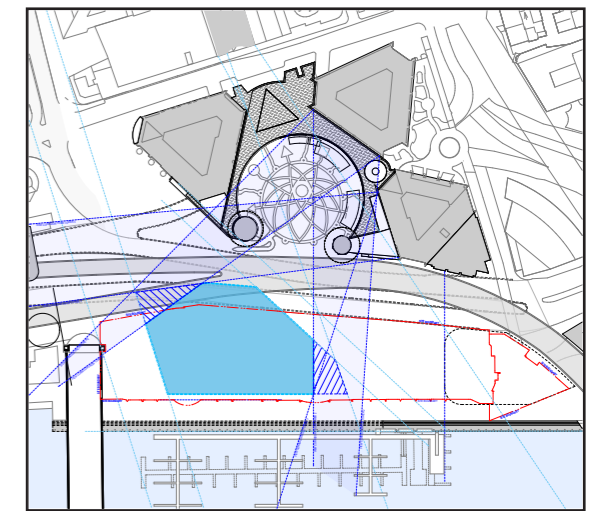
The existing Cockle Bay Wharf building footprint has informed the current lease line to the water. The lease line is variable by approximately 3 metres due to existing building features.

The proposed podium envelope is predominantly held to the inboard lease line. An articulation zone the width of the variable lease line is proposed, with up to 3m protrusion limited to 40% of the volume. This articulation zone should exclude the ground level and provide opportunity of a variable built outline to the podium, as well as provide wind mitigation from potential downwash conditions.



4 Private Views

The building envelope has been held behind the edge of Darling Park 1 to allow private views to the water from the existing adjacent residential building.

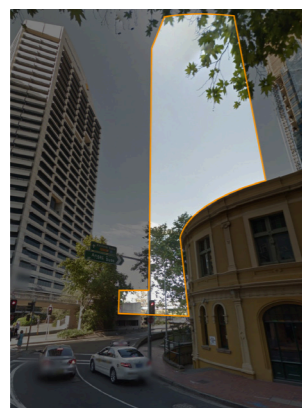


5 Shared Views

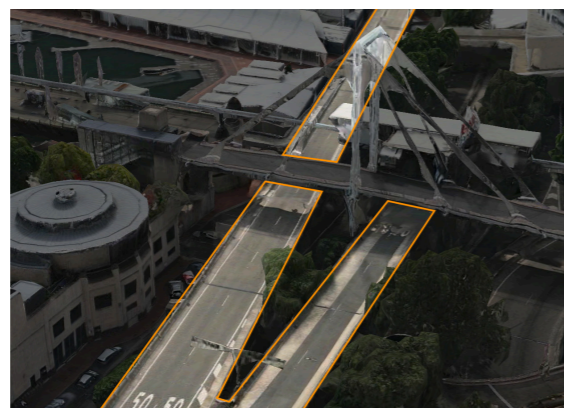
To maintain quality views from the proponents adjacent assets, area to the North East and Southern side have been trimmed from the derived envelope.



1A. Preserving vista from Market Street



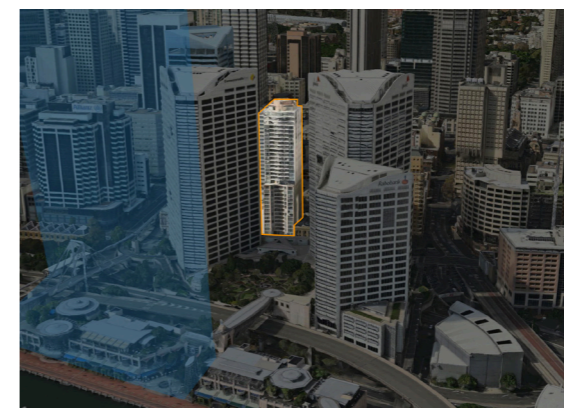
1B. Envelope set back from existing Darling Park development



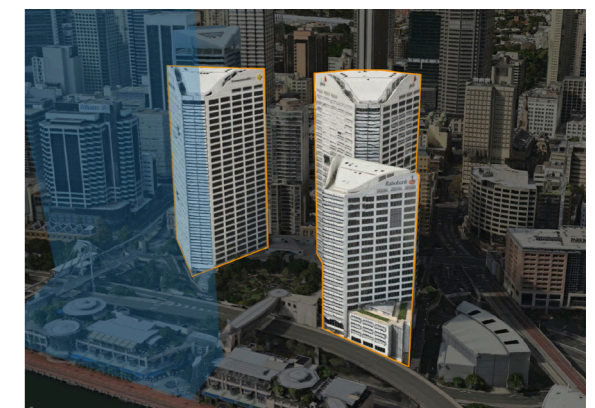
2. Urban infrastructure as barrier and setback parameter



3. Setback from waterfront and broadwalk



4. Setback for protecting private property vista towards Darling Harbour.



5. Setback for protecting commercial properties vista towards Darling Harbour.

Podium Setback

Objective

5.1.2 Sydney DCP 2012

- Enhance amenity in terms of daylight, outlook, view sharing, ventilation, wind mitigation and privacy
- Enhance the quality of the public domain in terms of wind mitigation and daylight access

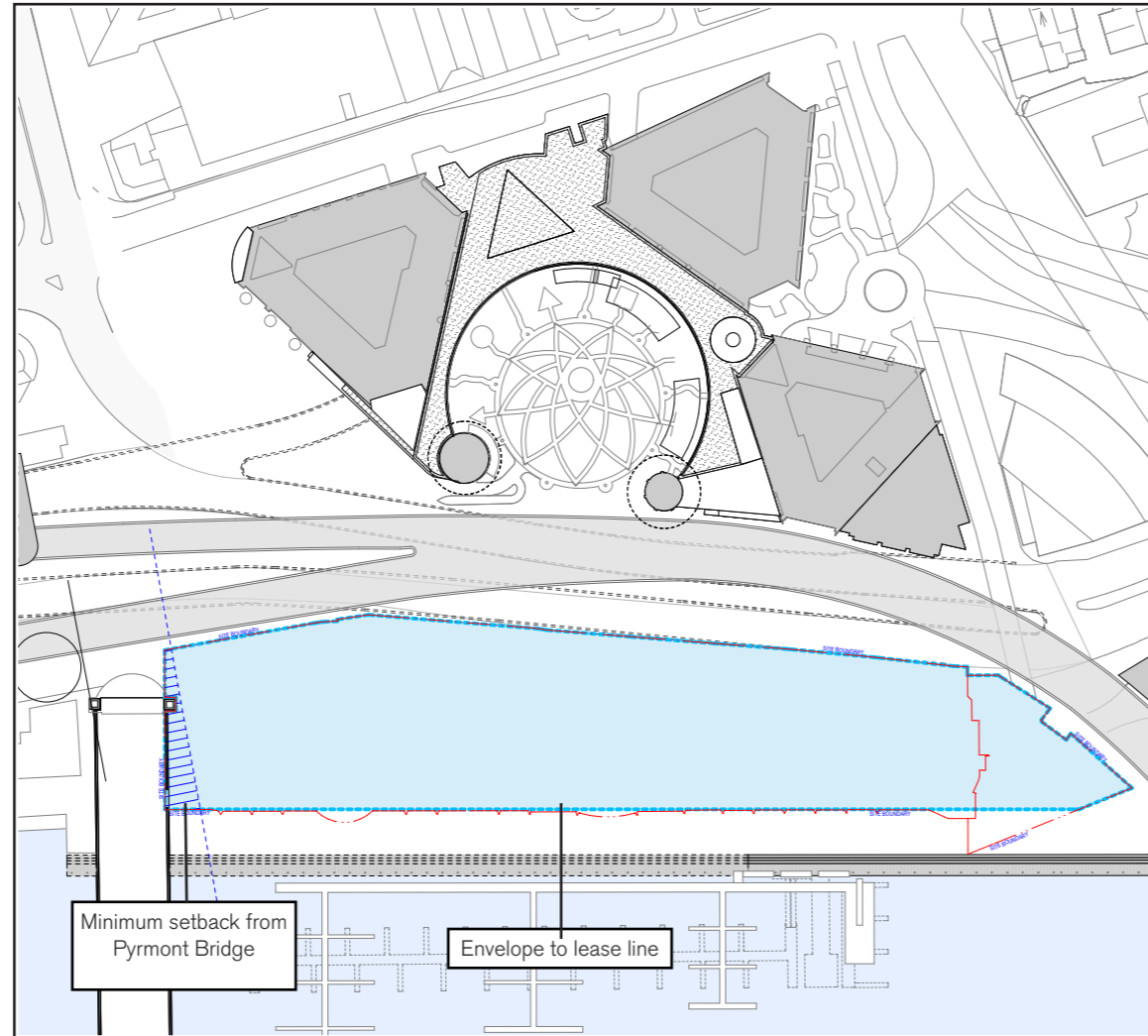
Podium envelope forms should form a street wall aligned to the site boundary, framing the promenade space for pedestrians and provide wind mitigation from tower downwash wind conditions.

The proposed podium envelope is predominantly held to the inboard lease line with an articulation zone for levels above ground level.

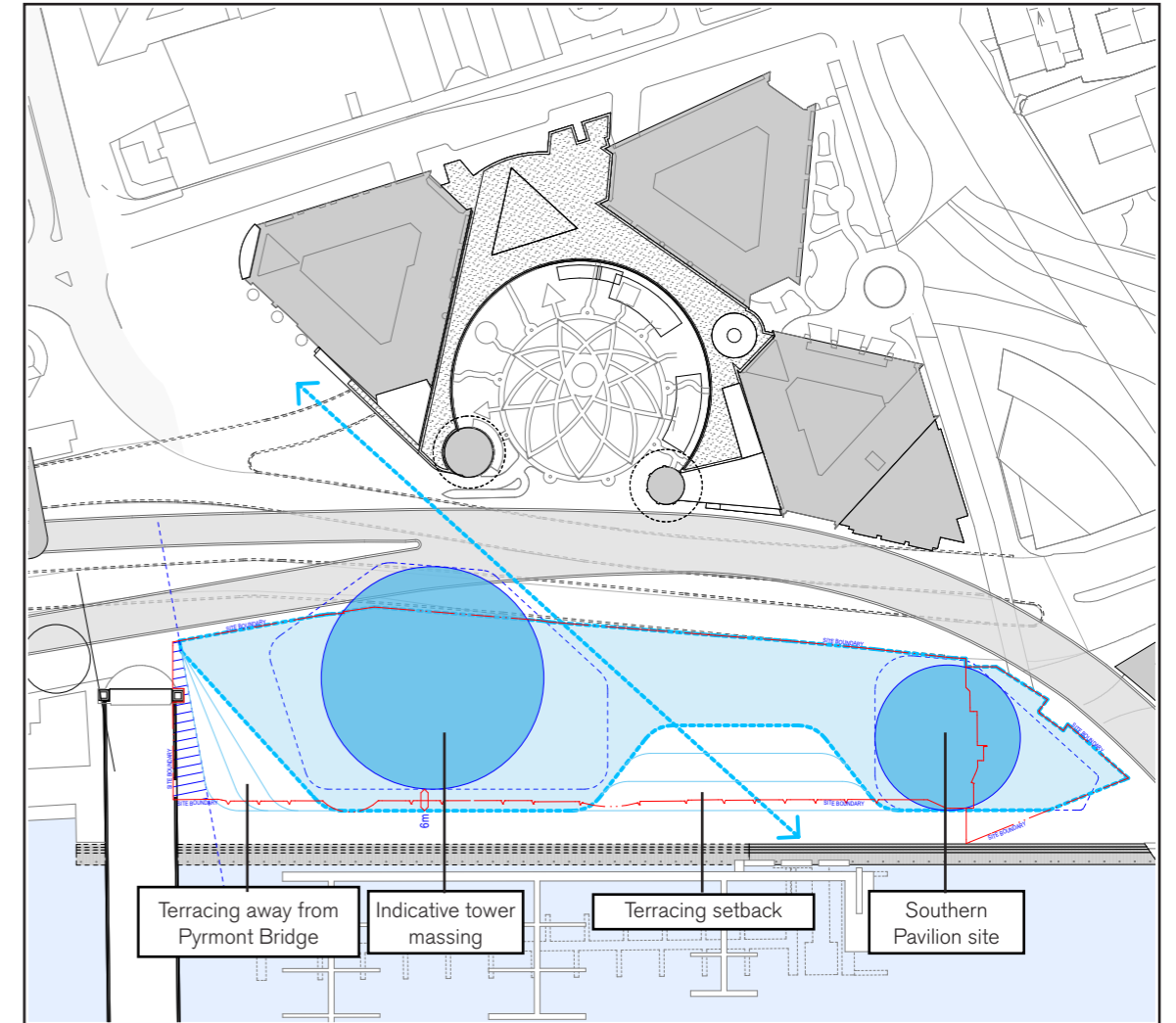
The ground level setback to the water should be held to the inboard lease line, but allowing improvements and upgrades to the promenade.

Pymont Bridge

The envelope considers a variable setback articulation zone to terrace away from the Pymont Bridge.



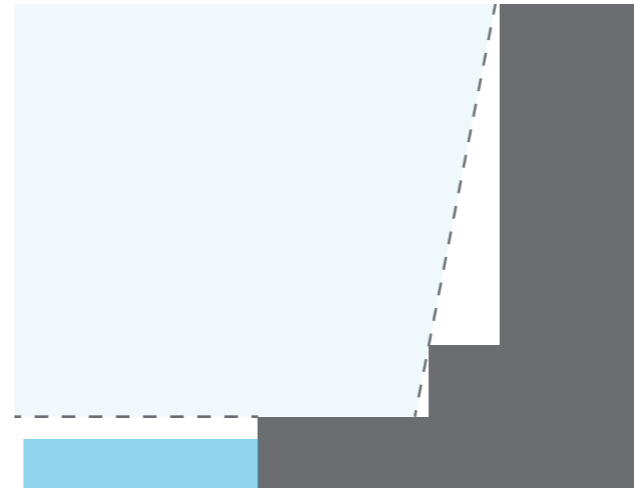
Podium Ground Level Setback



Podium Deck Level Setback



Typical City Podium Setbacks

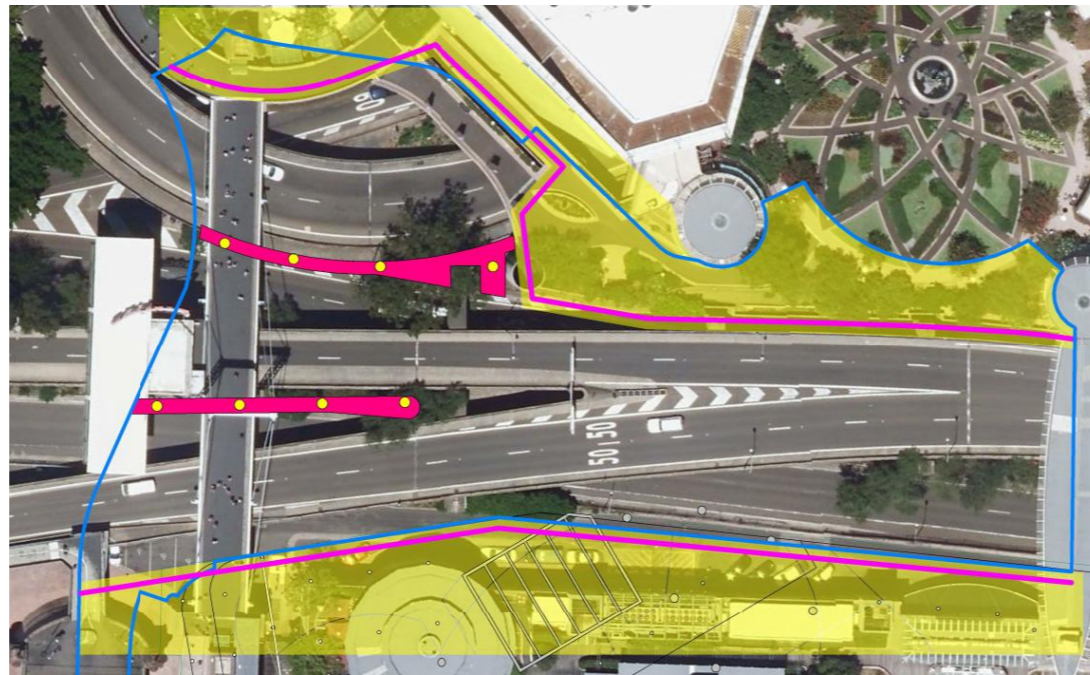


Proposed Harbourfront Podium Setback

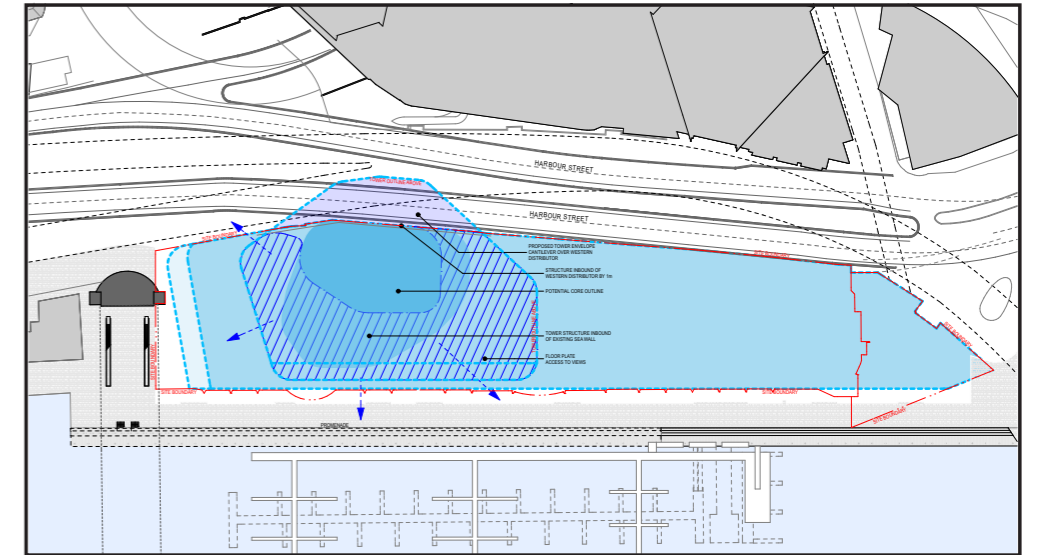
Structural / Geometric Constraints

The proposed envelope has been informed by the following structural constraints:

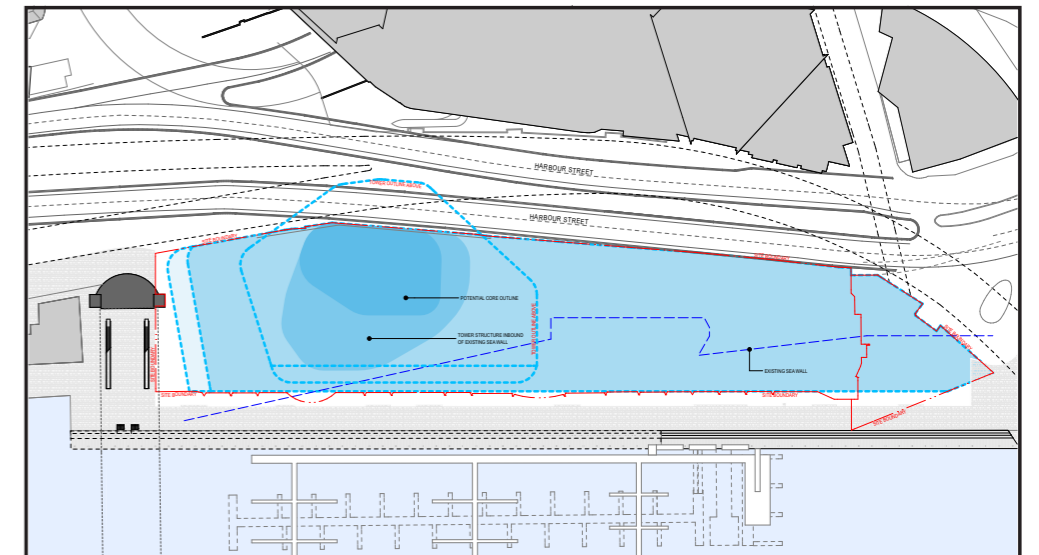
- On the harbour side, there is an existing sea wall which is closest to the sea on the Northern side, and tracks eastwards on the Southern side. If built form for any significant structure is limited to the North, there is the opportunity to hold major tower structure inboard of the sea wall, assisting build ability and the reuse of existing structure.
- The site is bound by the Western distributor and Harbour Street to the East. With the assumption that any tower structure lands West of the freeways, the extent of potential envelope to the East is limited by structural cantilever dimensions.
- There are support possibilities within the Western distributor zone for the suspended deck as per diagram on the right as per Enstruct diagram. But not near the tower.
- A desirable location for the core is in the North Eastern part of the floorplate, allowing the deepest part of the floor plate to access daylight and water views. By holding the core to this optimal position allows activated uses opening to the Level 3 public park and potential landscape terraces.
- The existing deck consists of a grid of footings parallel to the boardwalk. Further study is required to determine the value in retaining this structure for construction of the final form of the proposal.



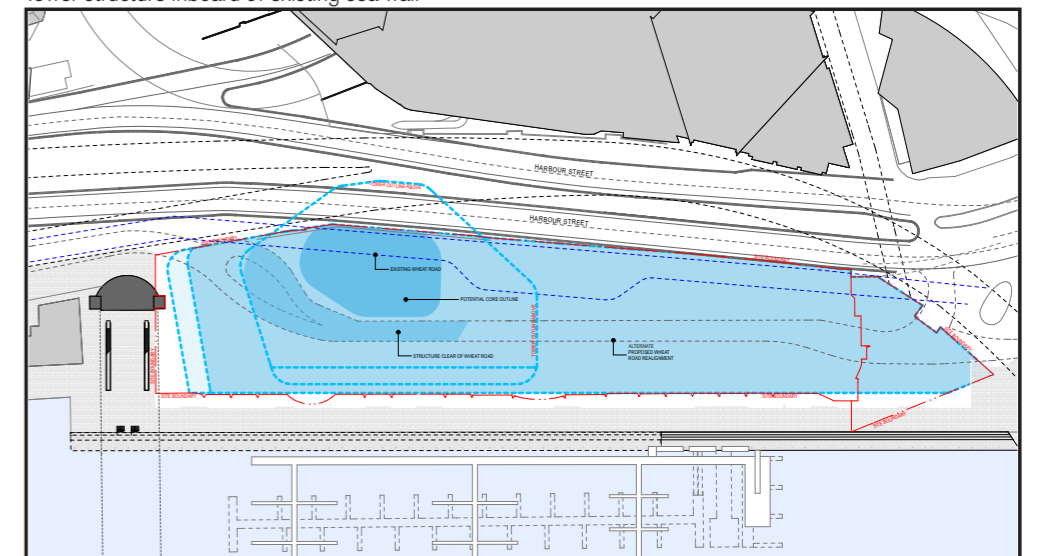
Overbridge available support locations



Tower structure inboard of elevated freeways



Tower structure inboard of existing sea wall



Ideal core location / Wheat Road