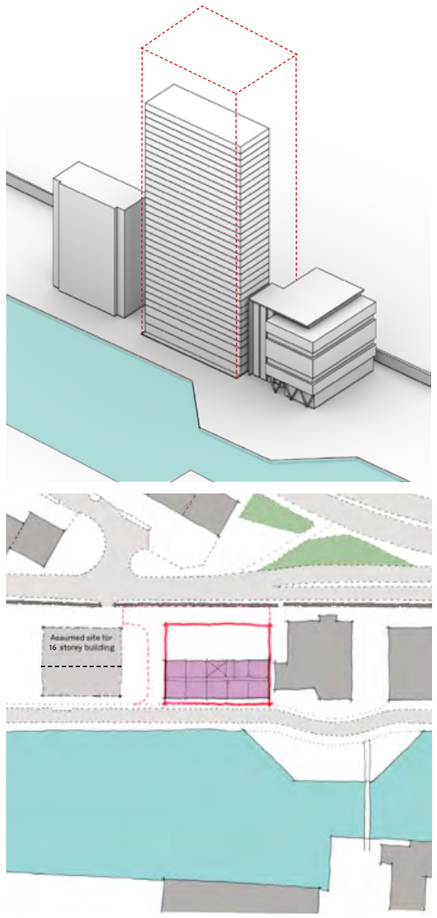
6.3 FORM AND FUNCTION

Although clearly defined in the Liverpool Waters parameter plans as a development plot, there are a number of ways in which the client brief and accommodation requirements can be incorporated onto the site.

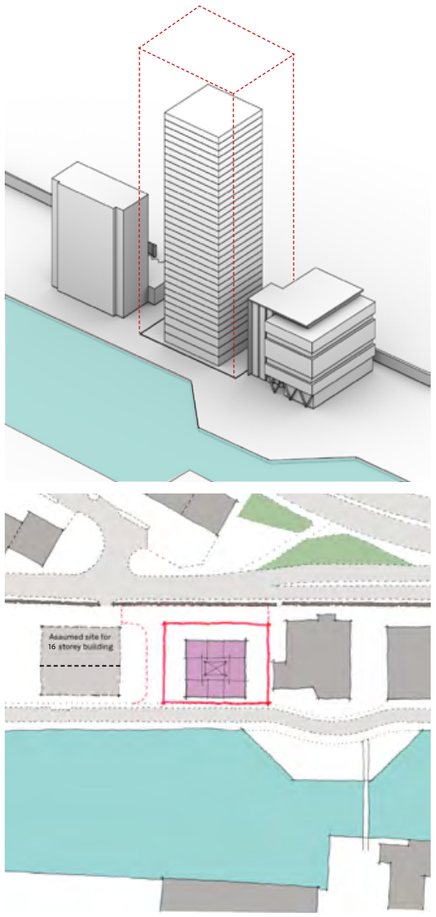
The following diagrams set out all the options that were tested from a scale and massing perspective, with the pros and cons of each option summarised below each model and section.



1: LINEAR BLOCK

Pros: Efficient gross: net/ wall: floor ratio.

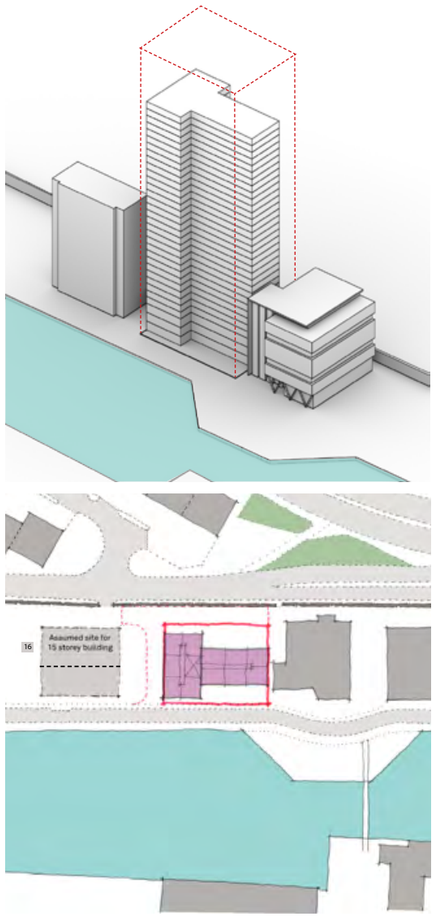
Cons: Poor ‘slab like’ frontage/ Public realm over-shadowed.



2: SQUARE BLOCK

Pros: Efficient gross: net/ wall: floor ratio.

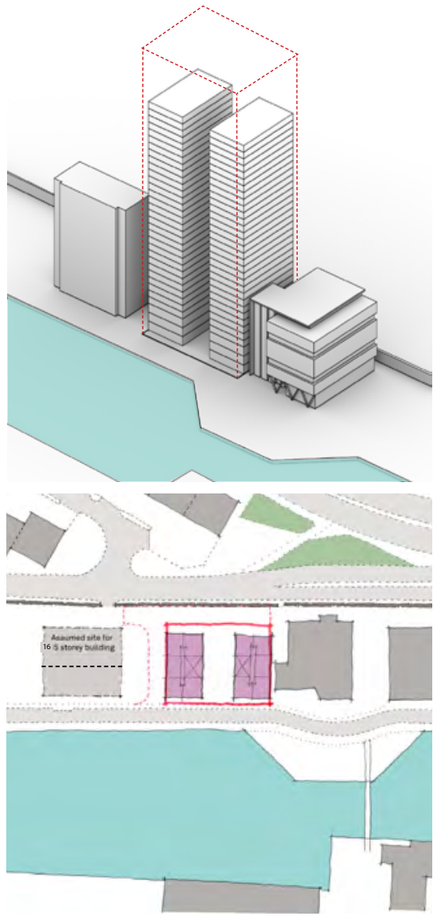
Cons: Poor ‘slab like’ frontage/ Public realm over-shadowed.



3: “T” SHAPE BLOCK

Pros: Efficient core: floor plate.

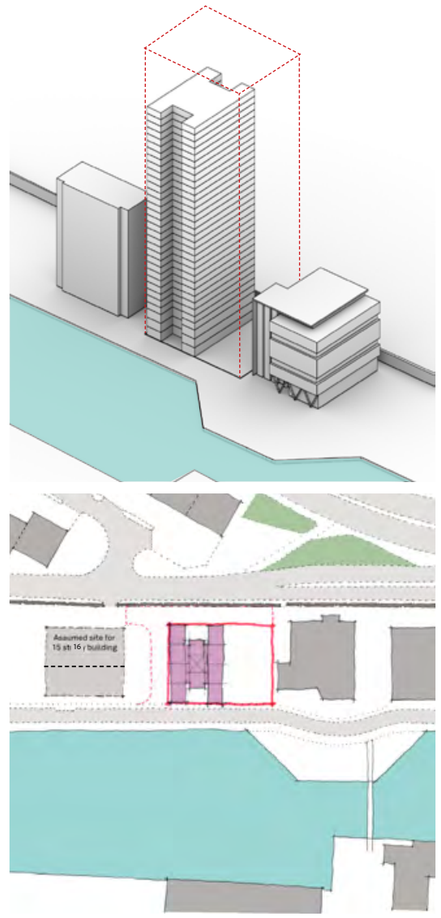
Cons: Poor external space provision, lacks relationship to orientation and block forms.



4: ISOLATED BLOCKS

Pros: Maximises dual aspect and river views/ slender forms.

Cons: Inefficient duplicate core/ reduced interface distances.

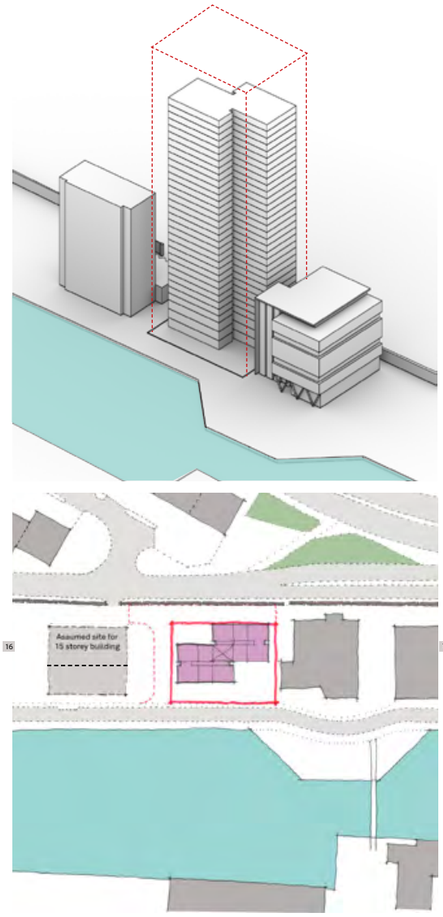


5: “H” SHAPE BLOCK

Pros: Efficient Gross: Net ratio/ single core/ slender form/ good open space to the South.

Cons: Deep reveals / Poor wall: floor ratio.

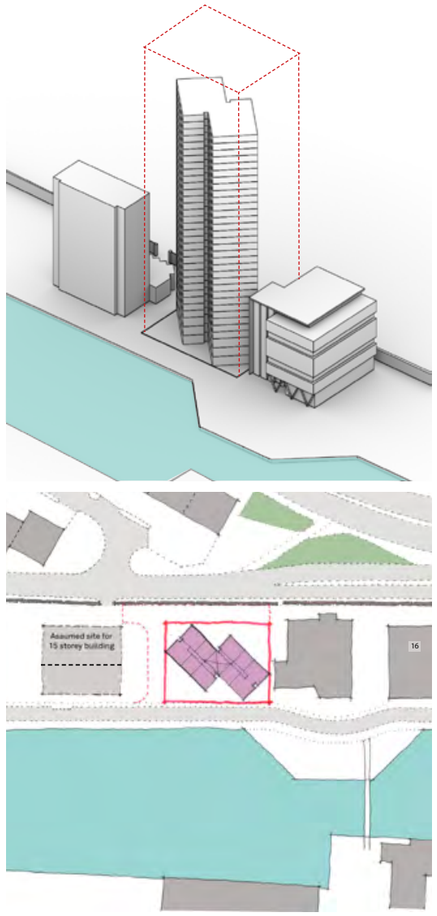
FOOTPRINT ANALYSIS DIAGRAM



6: “S” SHAPE BLOCK

Pros: Efficient Gross: Net ratio/ single core

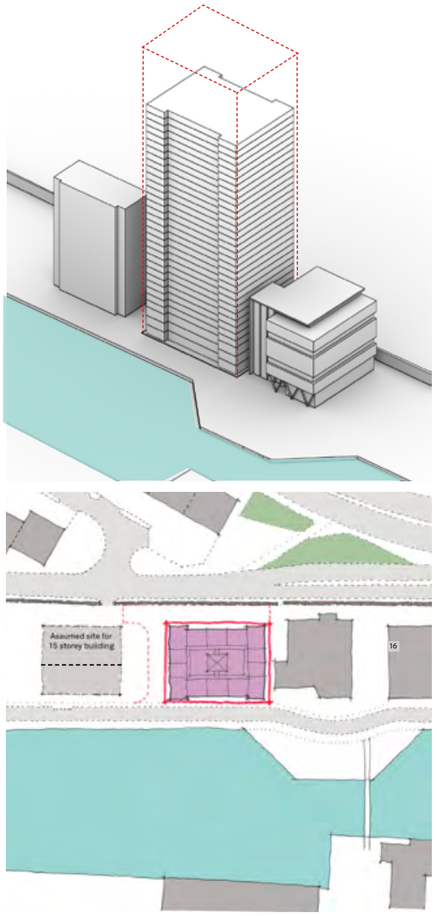
Cons: Poor ‘slab like’ frontage



7: ROTATED “S” SHAPE BLOCK

Pros: Efficient Gross: Net ratio/ single core / maximises dual aspect and river views

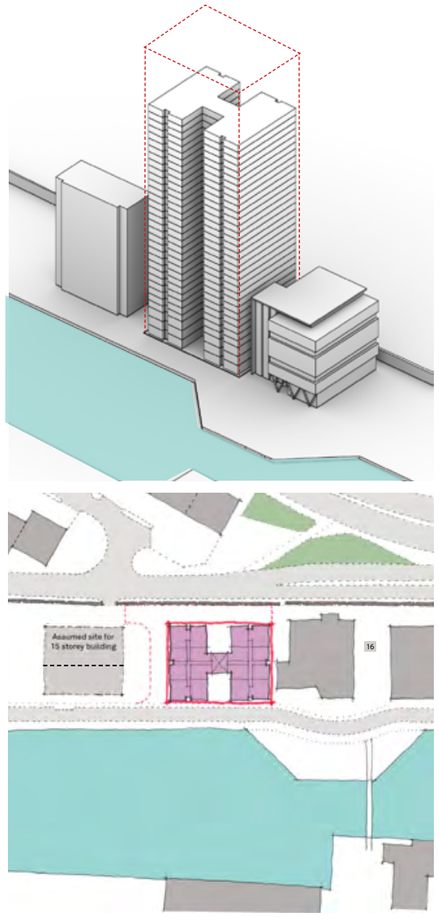
Cons: Restricts car parking / poor external space provision.



8: RECTANGULAR BLOCK

Pros: Efficient Gross: Net ratio/ single core

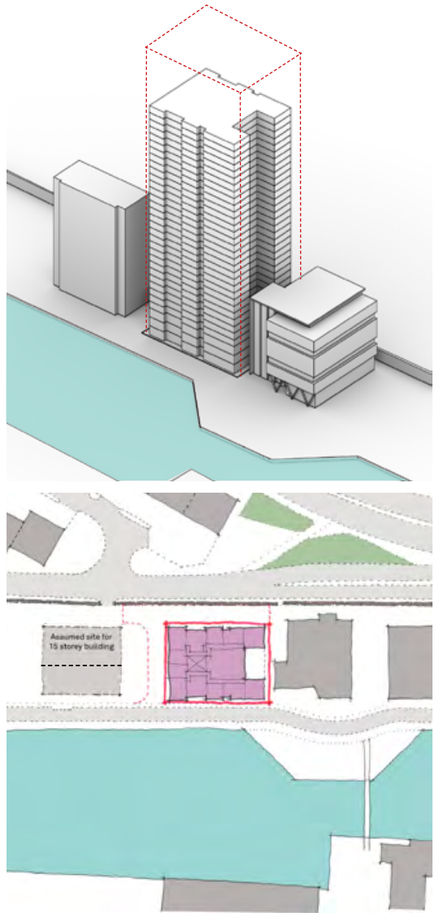
Cons: Monolithic block form / Poor wall: floor ratio / poor external space provision.



9: CONNECTED BLOCKS

Pros: Maximises dual aspect and river views/ slender forms.

Cons: Poor wall: floor ratio / poor external space provision.

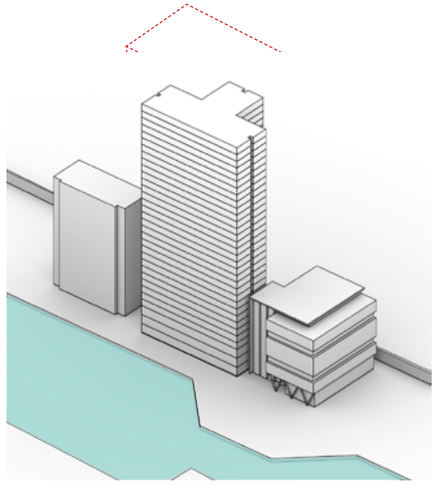


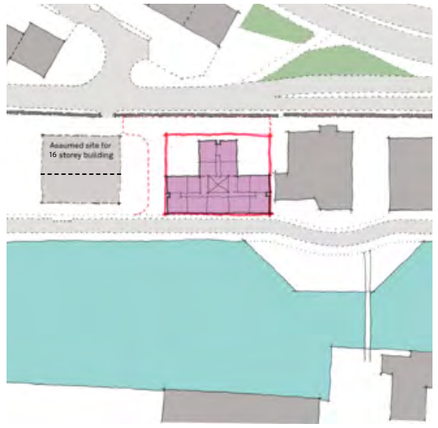
10: STAGGERED RECTANGULAR BLOCK

Pros: Efficient Gross: Net ratio/ single core

Cons: Monolithic block form / poor external space provision.

FOOTPRINT ANALYSIS DIAGRAMS

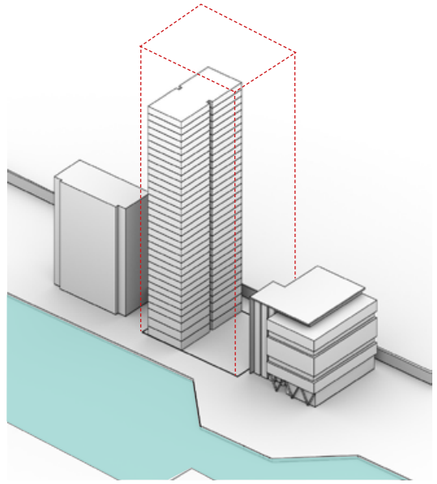


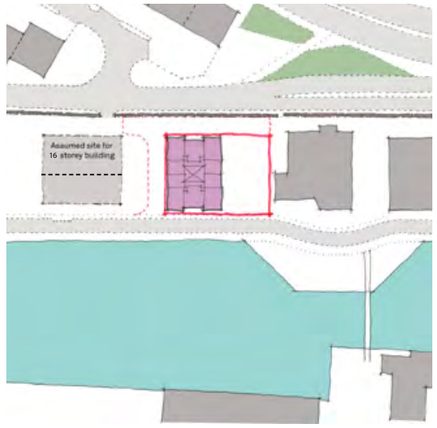


11: “T” SHAPE BLOCK

Pros: Efficient Gross: Net ratio/ single core

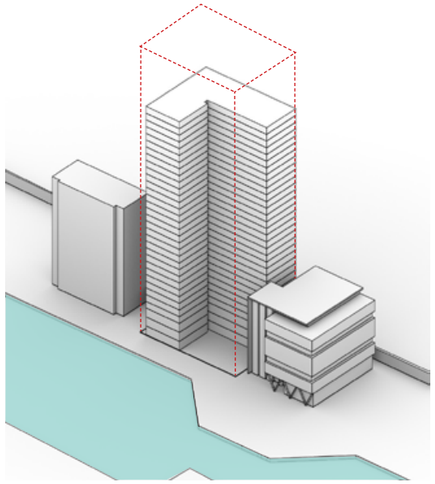
Cons: Poor ‘slab like’ frontage / poor external space provision.

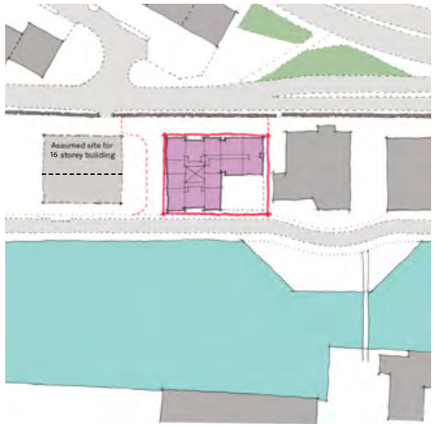




12: RECTANGULAR BLOCK

Pros: Efficient Gross: Net ratio/ wall: floor ratio / single core / good open space to the South.

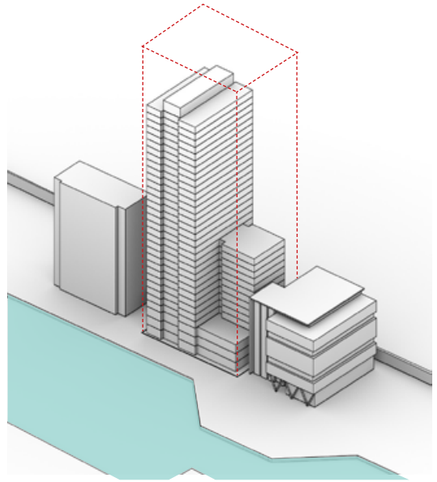


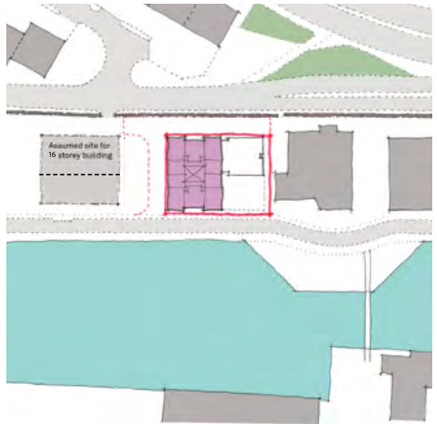


13: “L” SHAPE BLOCK

Pros: Efficient Gross: Net ratio/ wall: floor ratio / single core / good open space to the South.

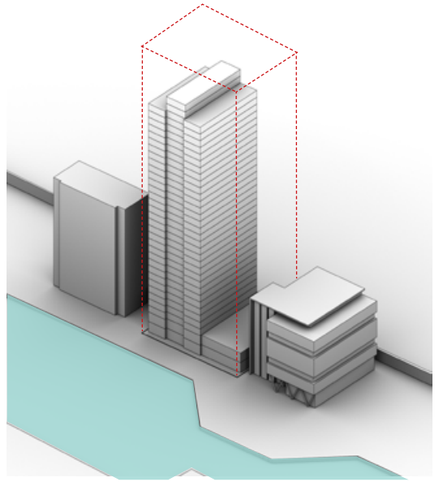
Cons: Poor ‘slab like’ frontage

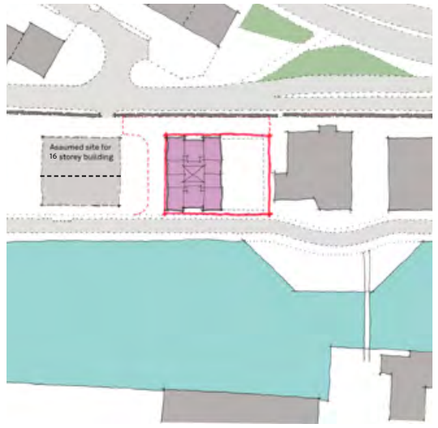




14: 12 & 13 COMBINED

Pros: Efficient Gross: Net ratio/ wall: floor ratio / single core / good open space to the South / ability to reduce massing scale at upper levels.





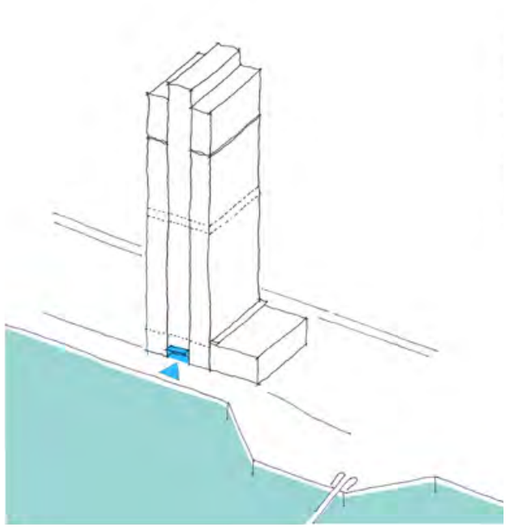
15: 14 WITH OUTRIGGER REMOVED

Pros: Efficient Gross: Net ratio/ wall: floor ratio / single core / excellent open space to the South / ability to reduce massing scale at upper levels / slender elegant form.

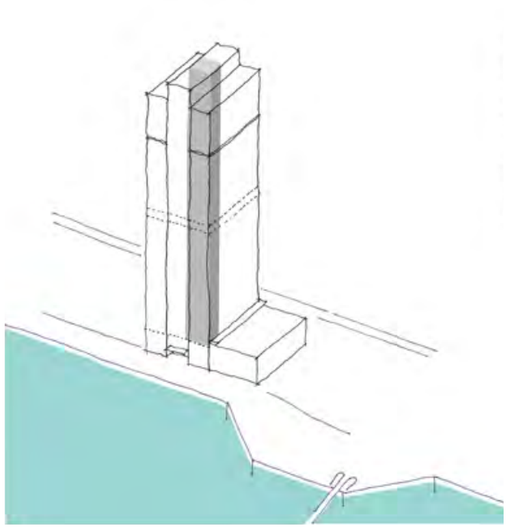
6.4 ACCOMMODATING THE BRIEF

ZONAL DIAGRAMS

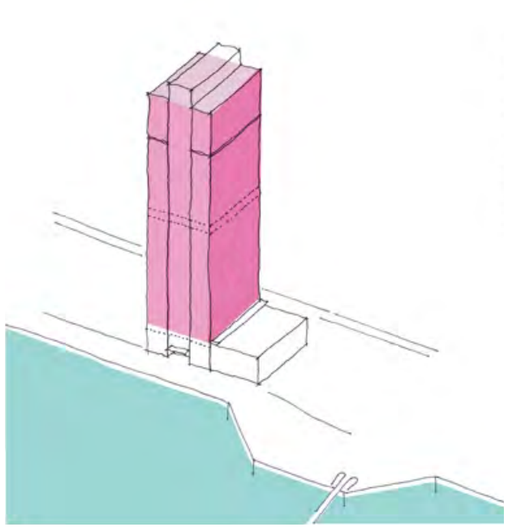
RESIDENTS ENTRANCE



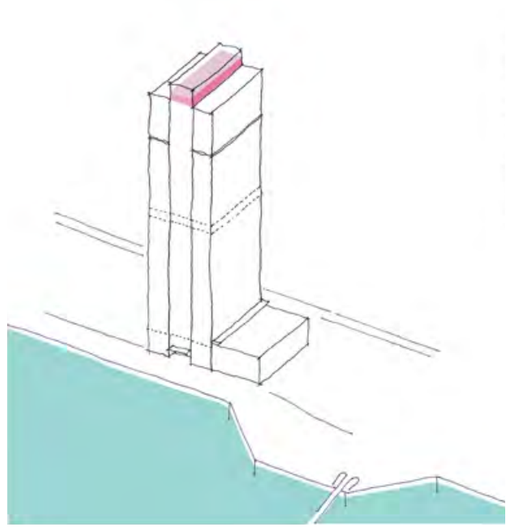
VERTICAL TRANSPORTATION



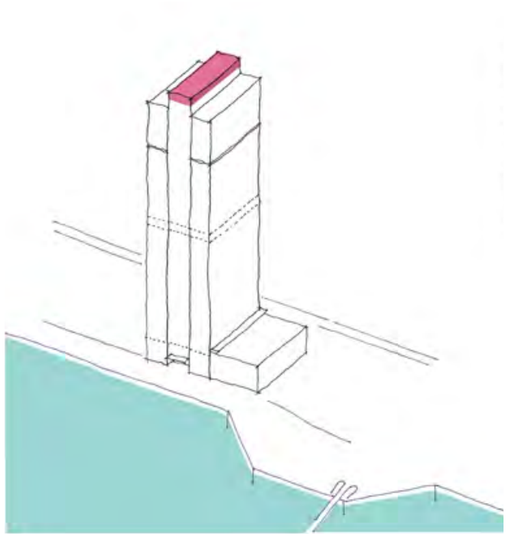
APARTMENTS



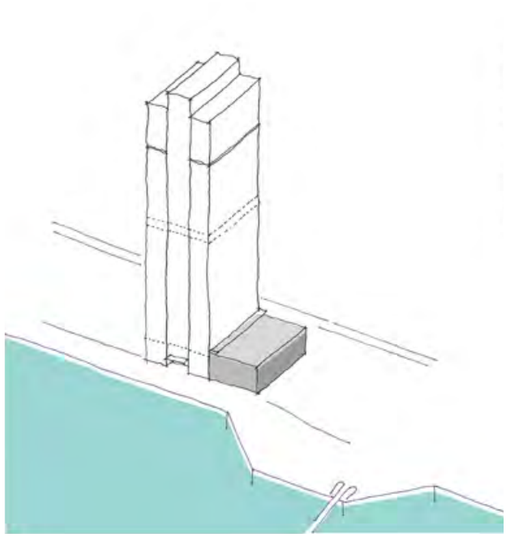
DUPLEX APARTMENTS / PENTHOUSES



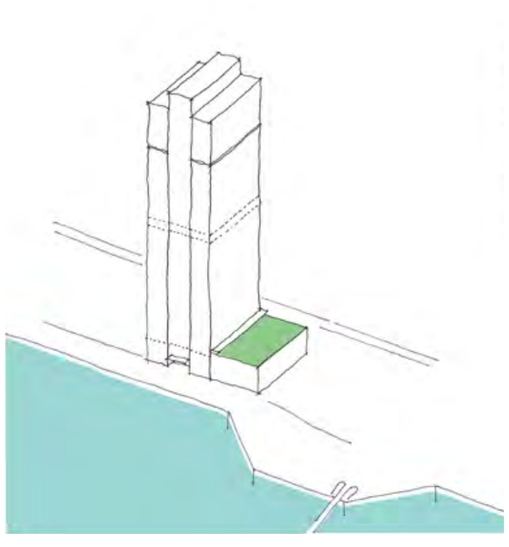
BEACON



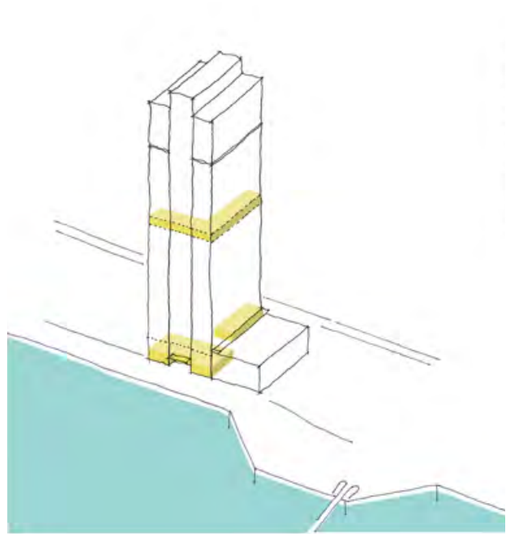
CAR PARKING



EXTERNAL AMENITY



INTERNAL AMENITY

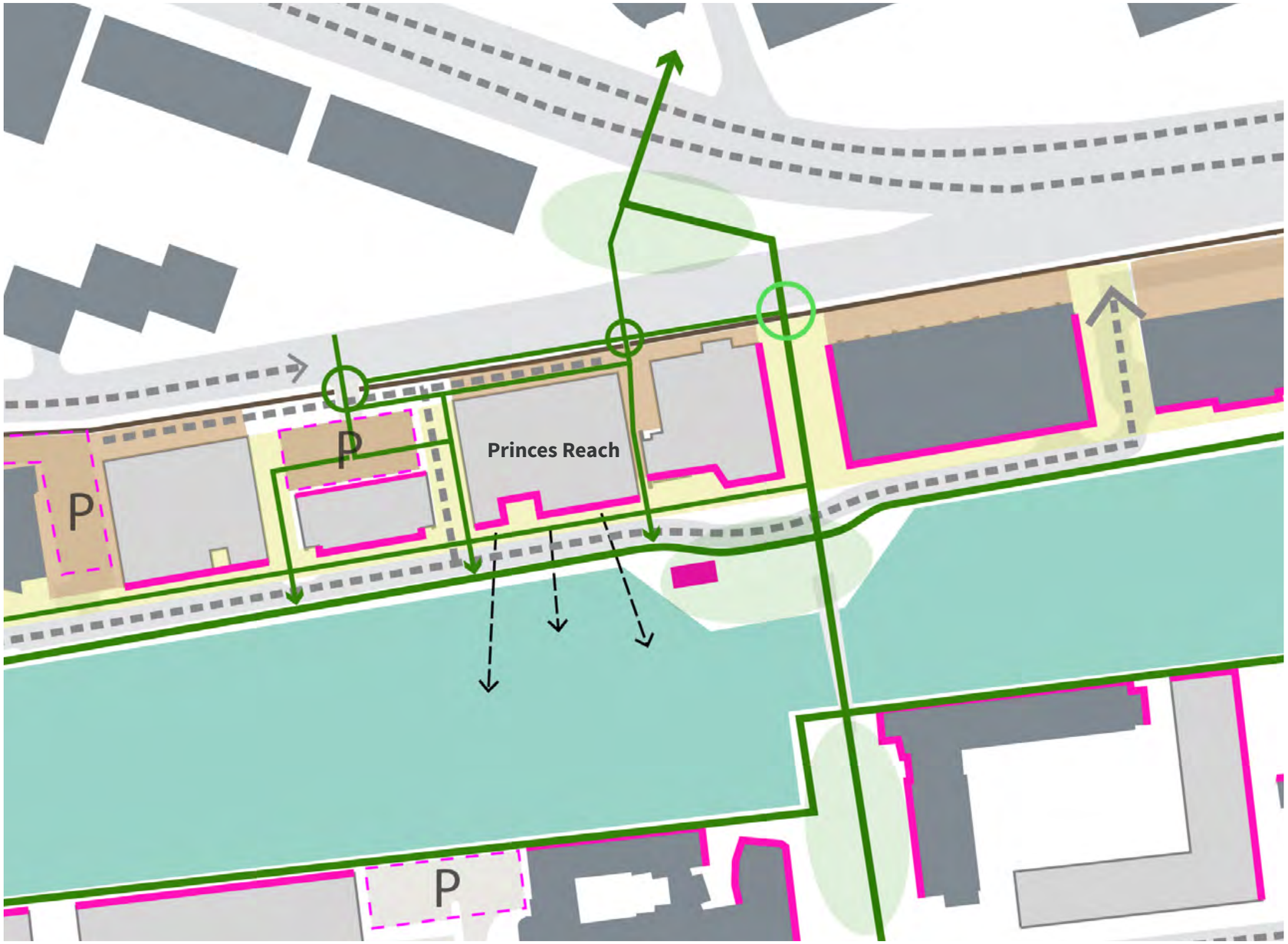


6.5 MEETING THE GROUND

SITE FACTORS

How the proposed building sits on the plot is one thing, but as Princes Dock is a 'work in progress', the fit with its neighbours (existing and proposed) and interfaces with the infrastructure of Princes Dock is equally critical.

The relationship between Princes Reach, William Jessop Way and the dock itself should be focussed on the pedestrian experience and the creation of a 'welcome mat' for future residents. Whilst the road and dock are outside of the application boundary, the Princes Reach team have collaborated with the Peel Holdings team looking at the wider Princes Dock neighbourhood to ensure the building and its ground floor uses provide a series of positive relationships along primary elevations and create an active frontage to the dock.



KEY

- Existing Building
- Proposed Building
- Pedestrian Movement
- Vehicular Movement
- Dock Wall Gateway
- Potential Gateway
- Public Open Space
- Building Frontage
- Building Backs
- Activated Facade
- Princes Dock
- Dock and River Views
- Pavilion
- P Parking Area

6.6 MICROCLIMATE

The existing site is largely unsheltered from wind across the Mersey and any isolated building on the site will result in wind conditions that exceed the normally acceptable target criteria for windiness around buildings in typically more sheltered urban areas. The windiness along the Liverpool waterfront is well known.

Although this application is a standalone submission to the Liverpool Waters outline consent (100/2424) this site has consent for a 126.8m high building and forms part of the wider Princes Dock neighbourhood as part of the outline permission. There is potential to create a clustering effect of mutual shelter, which, in conjunction, with local mitigation and urban landscaping shows promise towards achieving acceptable conditions for everyday public access as the Liverpool Waters masterplan is built out, and more people use the area on a regular basis.

Wind tunnel studies to investigate effects of current and likely future surroundings were undertaken at RWDI's facility in Milton Keynes and were evaluated using the well-established Lawson LDDC criteria for acceptability of use for typical activities by pedestrians. This included investigation of the effects of current ideas for Master-plan landscaping and local mitigation around the development. These studies are described in more detail in the technical section of the EIA and they support the general conclusions above.

Based on the above, the following recommendations are made:

a. The mitigation as tested to date does not fully satisfy normally acceptable standards of windiness around buildings, but has not been fully developed pending understanding of the timing of concurrent developments of the Master-plan. Further development of mitigation around the proposed Development is therefore recommended as the wider development plans become clearer.

b. If the building is constructed in advance of other buildings of the Master-plan, then special temporary measures are likely to be needed, such creating a sheltered corridor to ensure that safe access for pedestrians can be achieved in all weather conditions. These would be developed as needed in the circumstances of the timing of the development and in conjunction with the City.

c. As more buildings are constructed, then the windiness and mitigation should be reviewed at each stage. A measure of cooperation between developers and the City in terms of planting, screening and fencing is likely to be needed to produce effective mitigation at all stages of the Master-plan development.

Based on the work carried out and the recommendations for mitigation above, the current massing proposal for the Development is acceptable for windiness in the context of the currently intended overall Princes Dock masterplan.

1:300 SCALE MODEL OF THE PROPOSED DEVELOPMENT WITH EXISTING SURROUNDINGS (VIEW FROM THE WEST)

ROUGHNESS ELEMENT AND SPIRES USED IN THE WIND TUNNEL TO GENERATE THE UPSTREAM WIND PROFILE

7.0 DESIGN PROPOSALS

Princes Reach will be a new landmark on Liverpool's iconic waterfront. As the tallest and closest building to the Mersey, how Princes Reach expresses its verticality (both during the day and at night) will play a major part in its role as a marker for the City and an early emblem for Liverpool Waters.

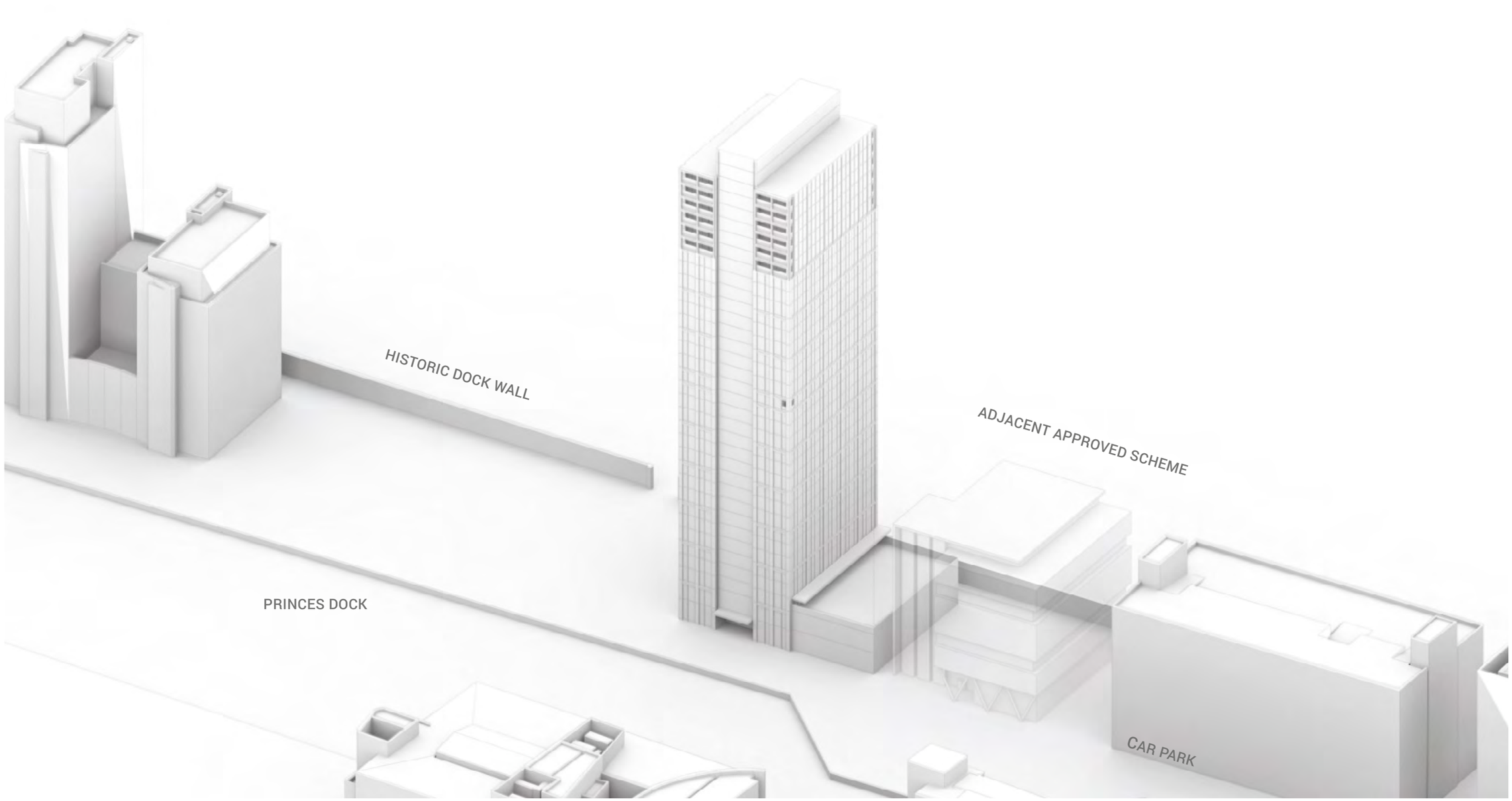
7.1 THE VERTICAL STORY

The tower form relies on two types of verticality to optimise elegance. The first is innate in the overall proportions but this has been accentuated by the elevational treatment, which expresses the vertical divisions between the units and the fenestration more strongly in a solid material than the horizontal structures of each floor. Excluding masonry in the central section accentuates the vertical layering into three, which increases the impression of overall height and slenderness of the whole building. Grouping the floors, in threes, permits the verticals to run through in unbroken lines and dominate further, also helping to lift the eye upwards towards the beacon.

This rhythm is then moderated in order to introduce the horizontal layering of elements borrowed from the precedent sources. This is not simply overlaid as pattern because different internal functions are expressed, for instance the communal amenity space on level 17 and the three layers of duplex units with balconies at the top of the building. At the base a deeper recess of the glazing of the first two floors announces the entrance, making it a very legible approach.

Separation of the car-parking into an adjacent plinth suggests a contrasting elevational treatment, consistent with the different use and structural arrangement. A more visually permeable outer skin reveals an honest expression of the structure. This contrast contributes to the purity of the tower's proportions.

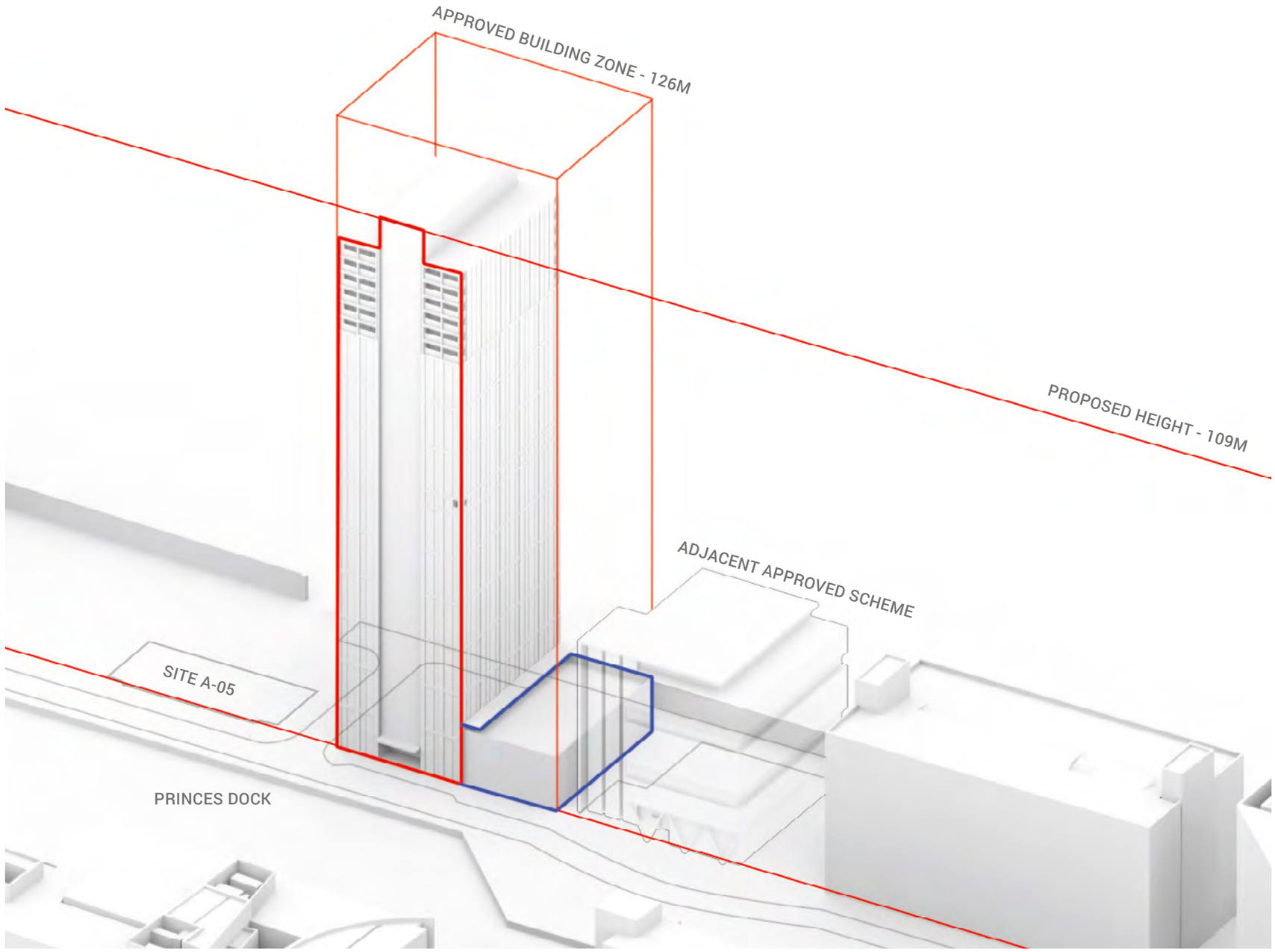
PROPOSED MASSING:



PROPOSED MASSING:

The preferred footprint has emerged in response to the following principal considerations:

- Orientation with the tower's narrower elevation facing the water minimises living space confined to an Eastward aspect.
- Setting the tower to the northern edge of the plot takes advantage of the extra clearance from site A-05 necessitated by the service access between the two.
- At the same time it maximises sunlight and daylight available to dwellings with an aspect on the South elevation and affords an efficient space to accommodate the car-parking element with communal amenity space on its roof.



PROVIDING CLARITY TO THE FACADES - THE IMPORTANCE OF A CENTRAL CORE

- Positioning a single core centrally in a slender form and wrapping accommodation round it optimises daylight penetration where it is most valuable.
- The core works very efficiently, with direct access into all dwelling units without recourse to corridors.
- The opportunity exists for dual-aspect corner units on all four corners of the building, affording outstanding views of both city and waterfront