



PTW

Masterplan

Corner of Macquarie & Terminus St, Liverpool

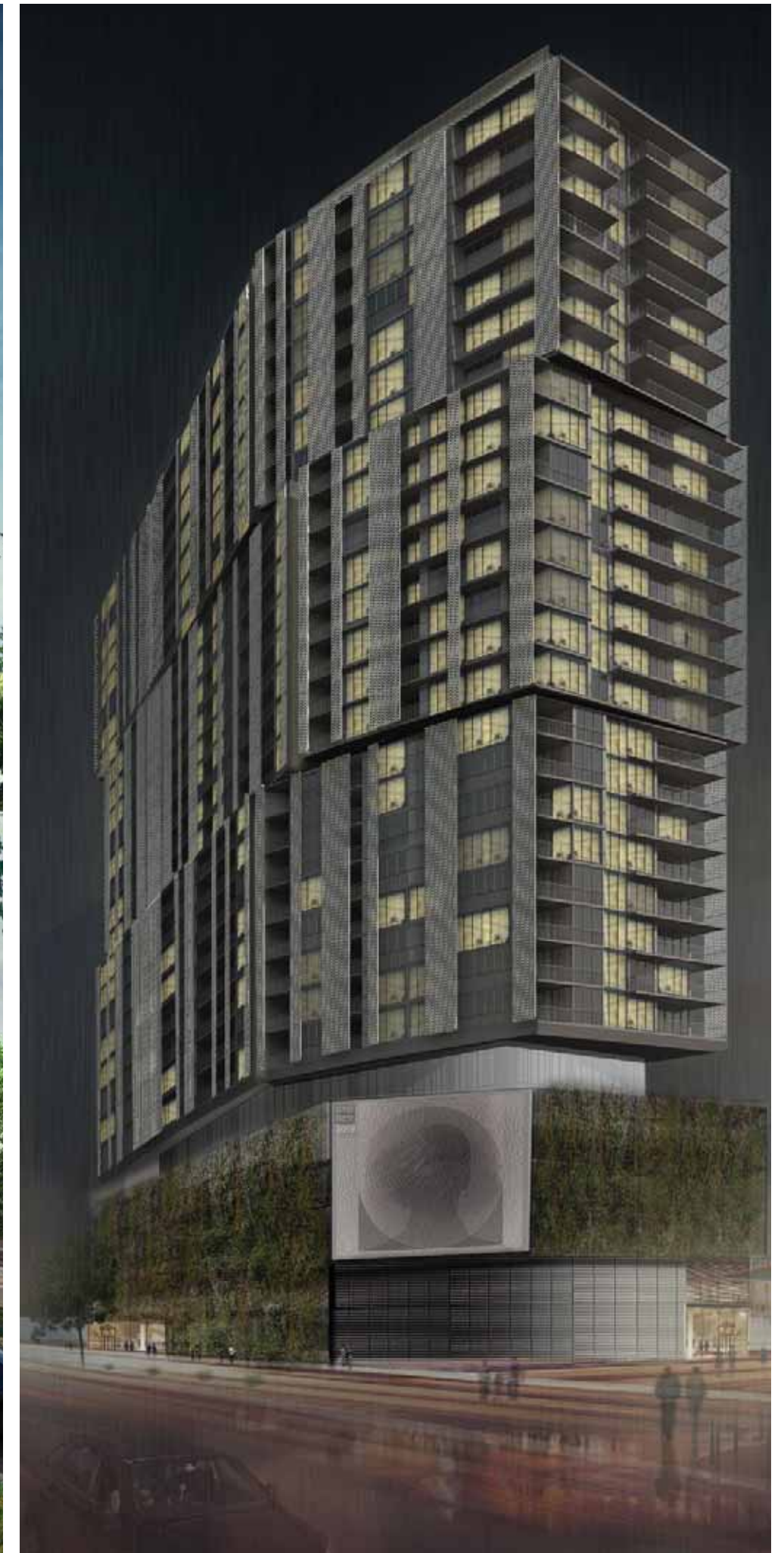
Prepared for Cannavo Investments

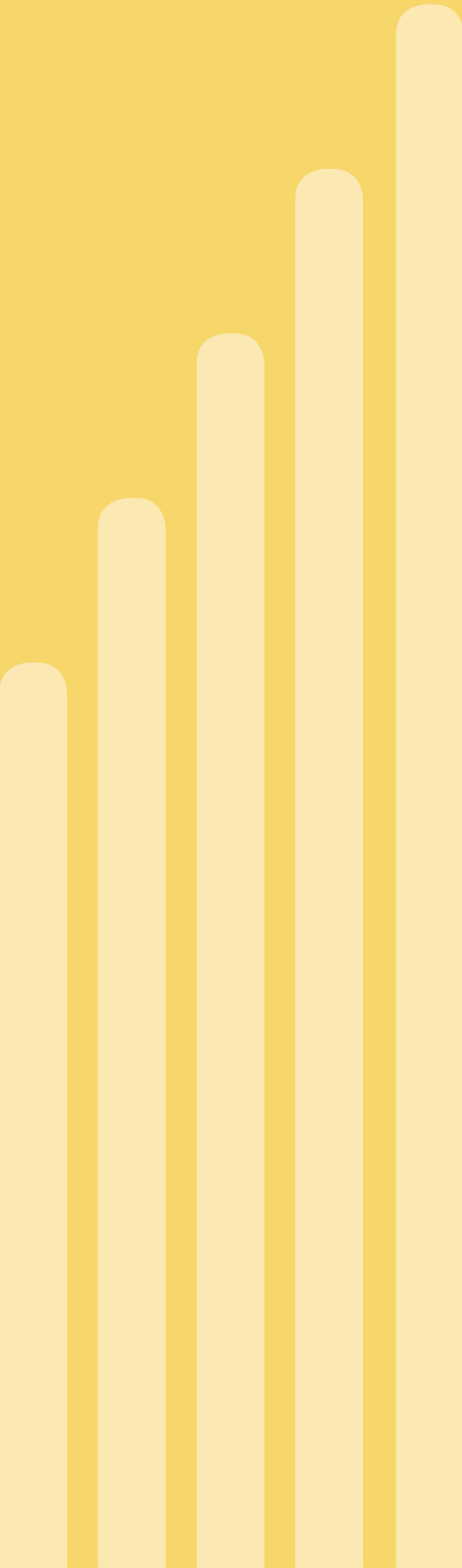
December 2016

Rev 01

PTW Contents

-
01. Urban Analysis
 02. Council Controls
 03. Macquarie Axis - a Precinct Vision
 04. Design Principles
 05. Building an Icon: Approach
 06. Commercial Feasibility: FSR





PTW 01.1 Context - location



The site is located within Liverpool, a regional city about 26km west of Sydney. It is well served by rail and major roads. The motorway - the M5 is located south of the site with connections to the northern M4 motorway via the A28 / Hume Highway. The site is located within the southern portion of Liverpool's mixed use commercial and retail city core. Within a short walking distance is Liverpool Railway Station, bus terminal, Westfield Shopping Centre, Macquarie Mall, Liverpool Hospital and various education facilities. Major parks bordering the CBD are located to the east (along Georges River) and west of the site.

Opportunity: An excellent location with access to public transport, facilities and services.

- Commercial and retail City core
- MacQuarie Mall
- Main buildings
- Main educational buildings
- Parks
- Bus routes

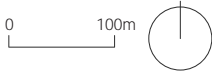


PTW 01.2 Context - block structure



The city of Liverpool is broadly organised into urban blocks aligned north-south. To the southern edge of the city centre, the city grid changes in orientation, with smaller blocks and with varying degree of rotation, are aligned NE-SW. At the heart of this shift in urban pattern is the triangular shape of the site. The distinct urban pattern of the southern edge of the city centre displays a vibrant urban alignment and structure.

Opportunity: Celebrate the distinct urban configuration of the site.



PTW 01.3 Context - Topography



Liverpool city is located on flat alluvial land between the Georges River and Brickmakers Creek. The site and the southern edges of the city centre is located on two ridge lines that are aligned SW-NE. Interestingly these ridge lines determined the alignment of major roads in the area including Macquarie Street and Terminus Street. The site is located on the eastern most ridge line.

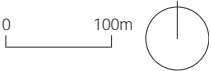
Opportunities: Take advantage of the site's commanding position on a ridge line.

- 20-30m

10-20m

0-10m
- Ridge line

Drainage line

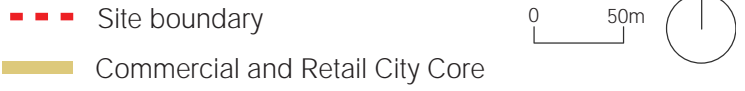


PTW 01.4 Existing conditions



This site is located with the south-eastern edge of Liverpool's mixed use city centre. The site is edged by high density CBD uses and in close proximity to low rise residential uses. The site is bounded by two major urban arteries with a north-west and south-east aspect.

Opportunity: Excellent location, accessibility and urban context.



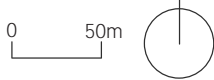
Corner of Macquarie and Terminus Street Liverpool, for Cannavo Investments

PTW 01.5 Building use

Situated within the city's Mid Rise Precinct, the site is considered as for mixed-use urban uses in support of fine grain retail uses to the north of the site and residential uses to the south east of the site. Within the Mid Rise precinct are isolated pockets of institutional, commercial and bulky retail uses..

Opportunities: A prominent urban site in close proximity to the mixed uses of Liverpool city.

- Site boundary
- Study Area
- Mid Rise
- Fine Grain
- Green Space
- Existing Institutional Public
- Commercial Core Stand Alone
- Existing Mixed Use Stand Alone

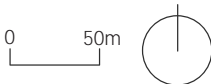


PTW 01.6a Figure ground on existing context

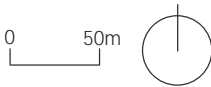


Located within the southern edge of the city the site is edged by a closed pattern of large footprint commercial retail buildings. Just south-east of the site a more open pattern is observed defined spatially by smaller footprint residential apartment buildings.

Opportunity: A site capable of being adapted as a large footprint building to spatially define the southern 'gateway' to the CBD.



PTW 01.6b Figure ground
with future massing



PTW 01.7 Urban gateways

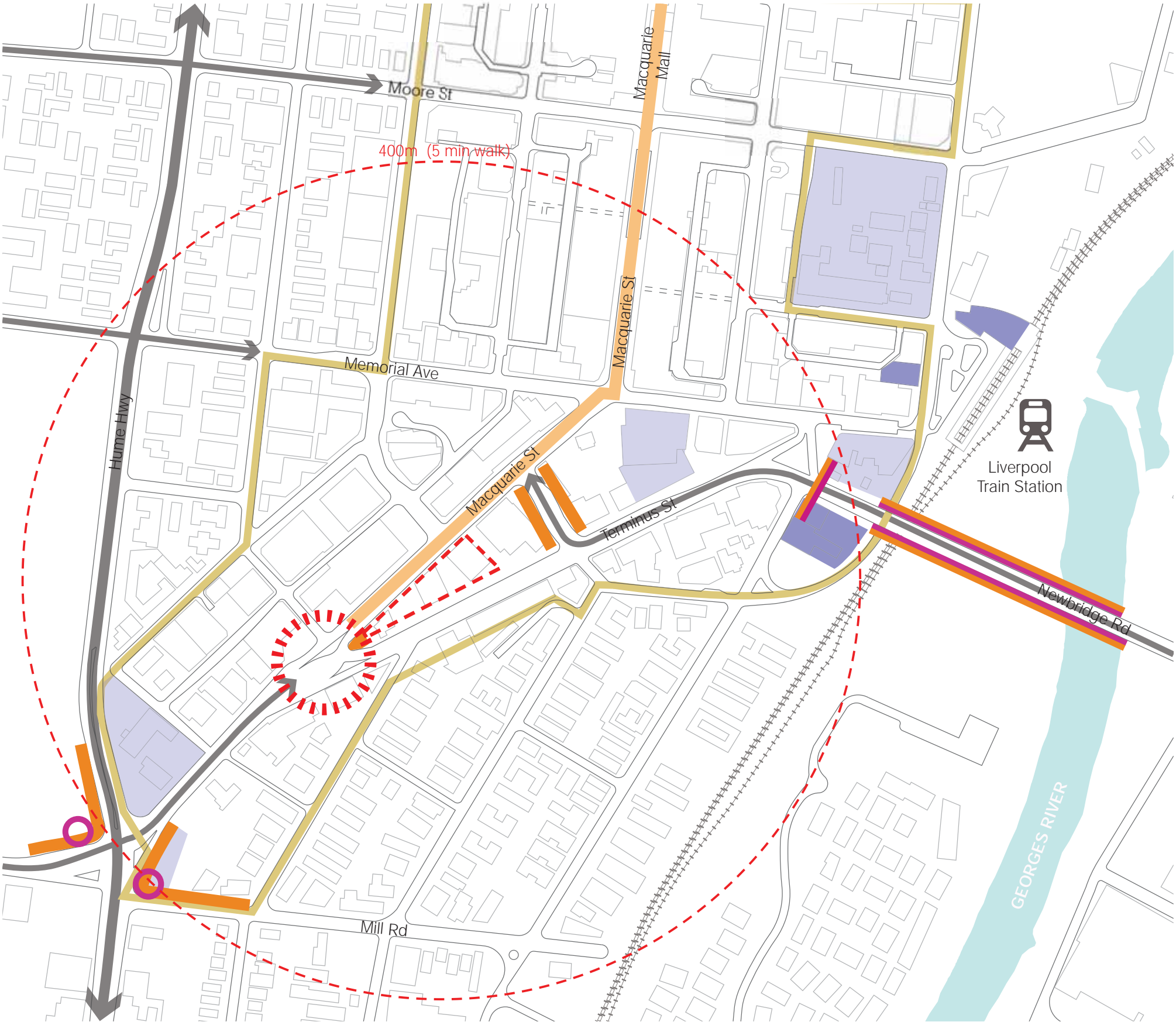
The prominent position of the site requires an urban proposition to meet Liverpool Council's strategy for a southern urban gateway sequence at the intersection of Macquarie Street and Terminus Street. In the development of an appropriate proposition it is desirable to include public art, feature lighting and distinct architectural detail. In addition to all this will be directional signage and advertising not unlike that around the vibrant areas of New York. At the heart of Liverpool's CBD, is Macquarie St - identified as a key activity street.



Opportunity: Having a prominent location, the site has the potential of becoming the city's most significant entry point.

- Site boundary
- Commercial and Retail City Core*
- Key activity street*
- Public art opportunity*
- Feature light opportunity*
- Key sites nominated in LEP*
- Visually prominent buildings*
- CBD Arterial Ring Road*
- Gateway sequences*
- ⊙ Gateway development*

* Sourced from Liverpool City Council's document



PTW 01.8 Landscape gateway and structure

Council established their intention for a gateway sequence on approaching and entering the CBD of Liverpool. A sequence of urban and landscape elements can contribute to a memorable urban journey along the main roads and streets of the city. The existing parks of the city can also emphasize and contribute to this journey.

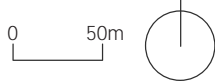
Opportunity: Well located in the gateway sequence, the site has the potential to offer a “Green Stepping Stone Landmark” and link with the existing parks to the east and west.



Landscape Gateways context

- Site boundary
- Commercial and Retail City Core*
- Civic space
- Enhanced feature planting*
- Consolidated green edge to the City*
- Landscaped street thresholds*
- Green canopy to Key City Routes*
- City Parks*
- Informal parklands*
- Opportunity for an East-West “Invisible Green Link”
- Opportunity for a “Green Stepping Stone Landmark”

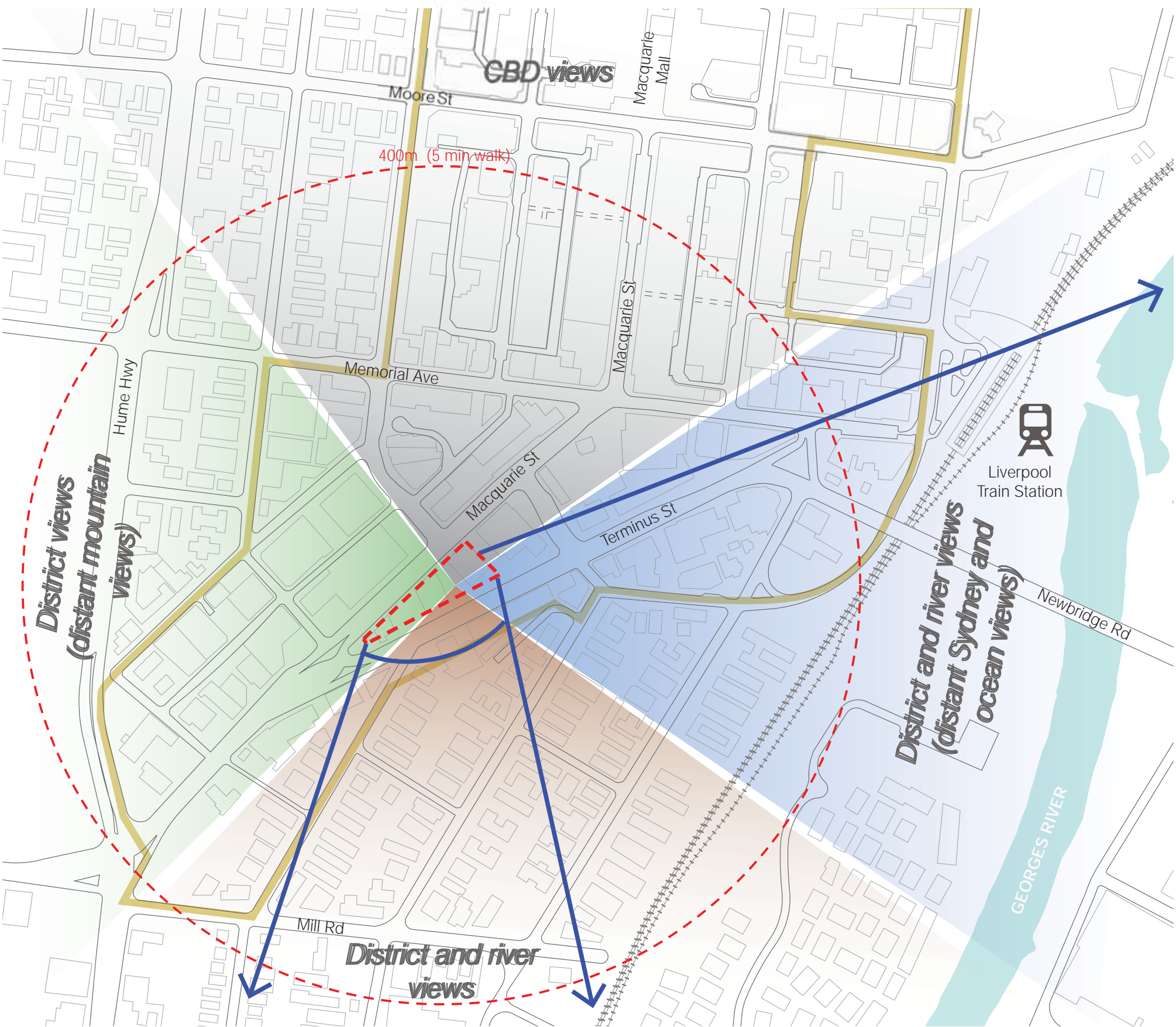
* Sourced from Liverpool City Council's document “Building our New City”



PTW 01.9 Views

The site has potential for 360 views of the surrounding distinct including Liverpool CBD, adjacent parklands to the west and the Georges River to the east. Beyond these local features distant views towards Sydney's coastline and the Blue Mountains are likely to be observed.

Opportunity: Taking advantage of the site's aspect, the shady south facing facade of the building will have open views out over Georges River and low density industrial uses to the south-east. While the north facing façades of the building will in turn have district views of lower scale residential uses with distant views of a vegetated skyline to the north-west.



- Site boundary
- Views from site building, pre development
- Views from site building, post development

PTW

URBAN ANALYSIS

01

COUNCIL CONTROLS

02



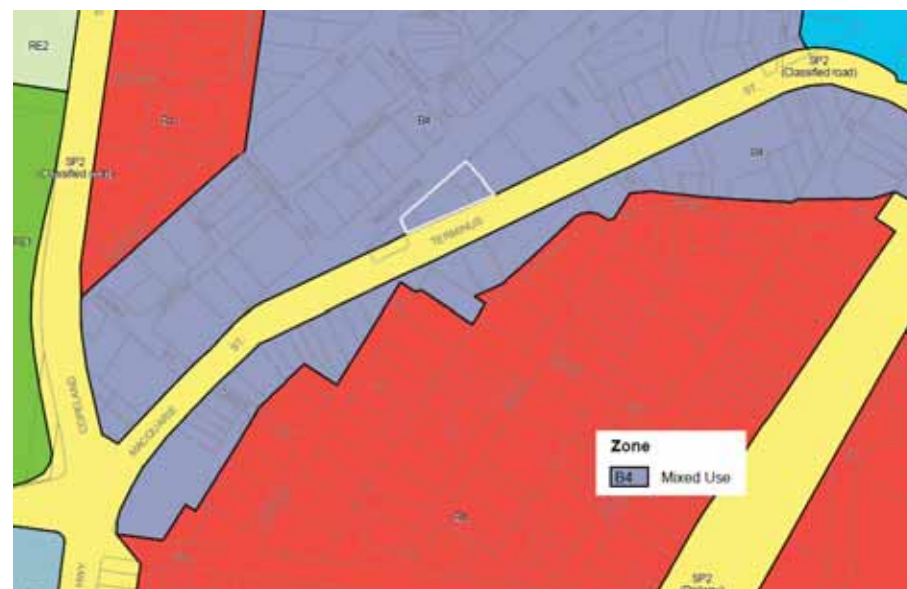
PTW 02.1 Liverpool LEP, 2008

The site has the following characteristics:

- area: 3,358 m²
- GFA target: 33,580m²

The following parameters from the LEP apply to the site:

- Mixed Use
- FSR 6:1 permissible, 10:1 target as proposed
- Maximum building height 80m

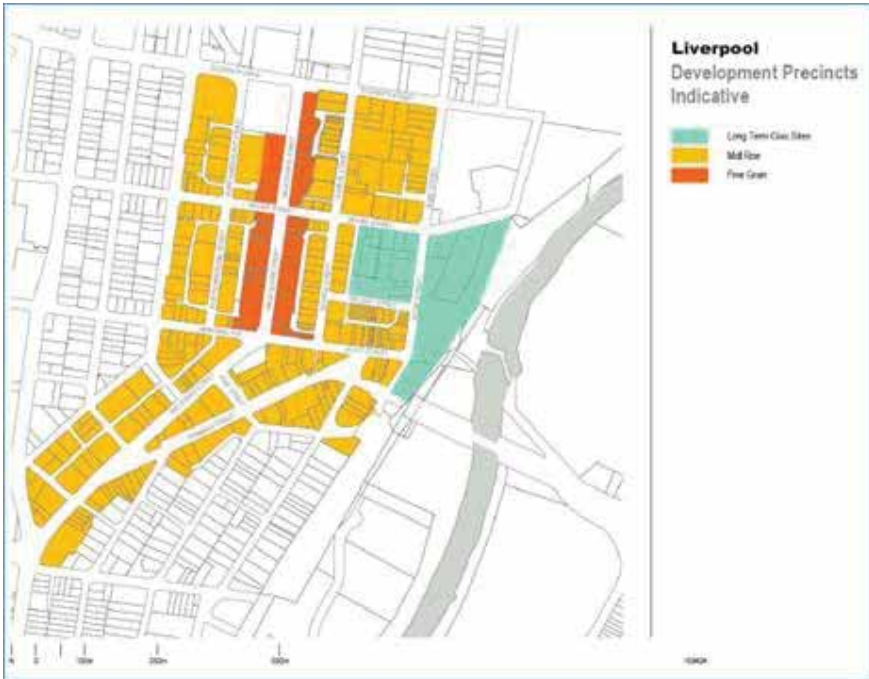


Corner of Macquarie and Terminus Street Liverpool, for Cannavo Investments

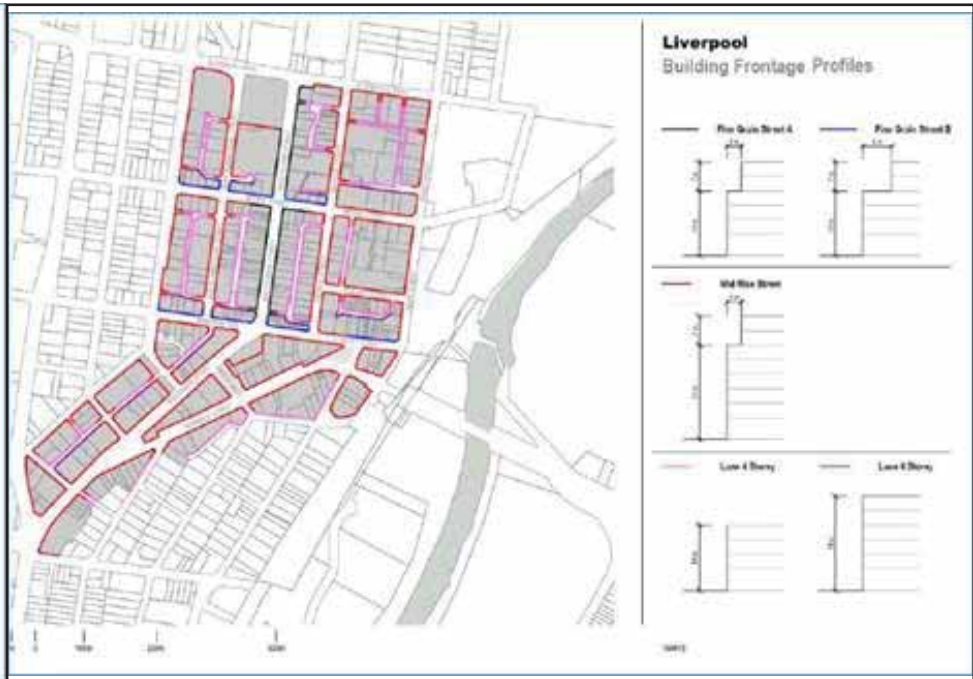
PTW 02.2 Draft Control
Council meeting of 29 April 2015

- The following parameters from the draft control apply to the site:
- Indicative Development Precincts: Mid Rise Precinct
 - Indicative Street Wall Profile: 21m Podium with 3m setback to levels above (will vary depending on depth of the lot)
 - Indicative Building Set Backs: 0m to Terminus St, 2-2.5m setback to Macquarie Street
 - As a key site, a 10:1 FSR target is proposed
 - Maximum Height?

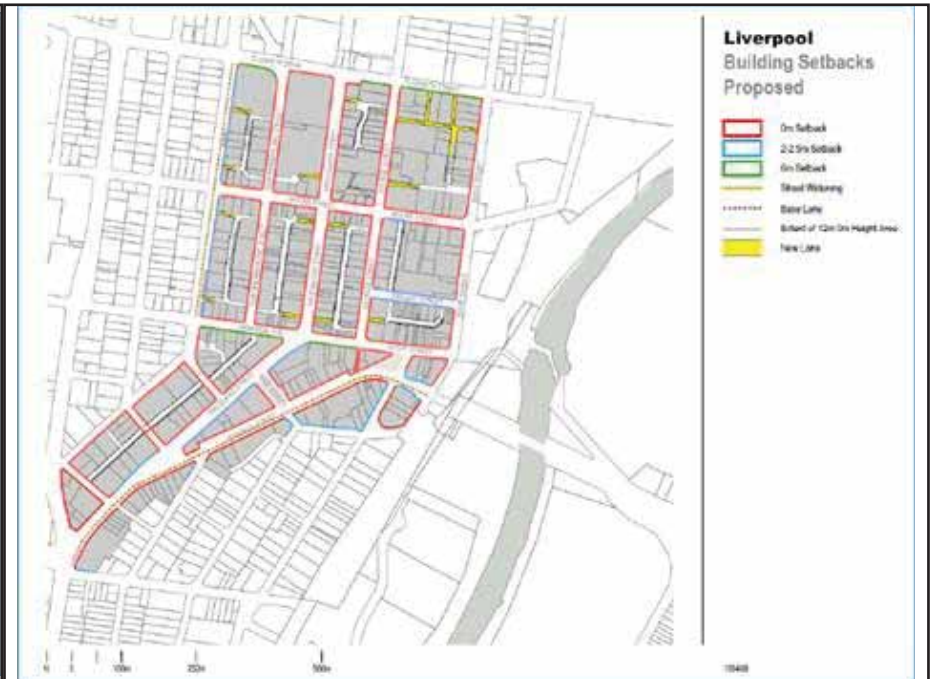
Indicative Development Precincts: Mid Rise Precinct



Indicative Street Wall Profile: 21m Podium with 3m setback to levels above
vary depending on the depth of the lot



Indicative Building Set Backs: 0m to Terminus St,
2-2.5m setback to Macquarie Street



PTW 02.3 Draft Control



- The following parameters from the draft control apply to the site:
- High Pedestrian Routes
 - Potential Road Widening
 - Through Site Links

High Pedestrian Routes



Potential Road Widening



Through Site Links



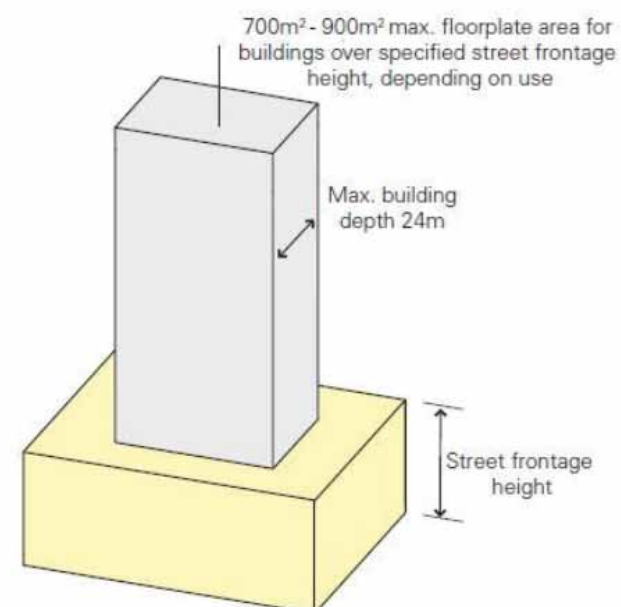
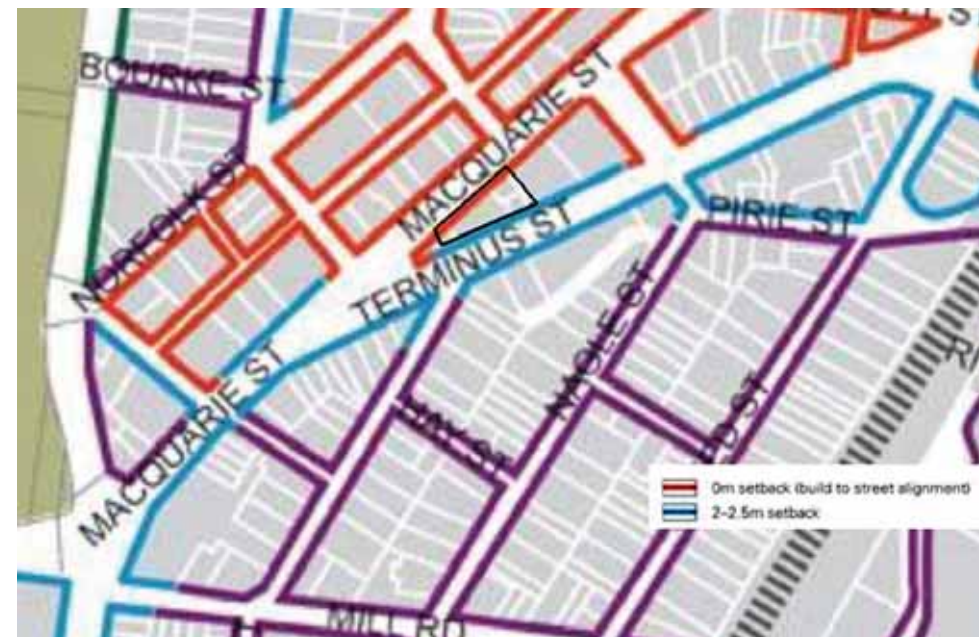
PTW 02.4 Liverpool DCP, 2008

The site has the following characteristics:

- area: 3,358 m²
- GFA target: 33,580m²

The following parameters from the DCP apply to the site:

- 0m setback to Macquarie St
- 2-2.5m setback to Terminus St
- Street frontage 16-26m (4-6 storeys)
- Continuous awning
- Special corner for potential additional height



PTW

URBAN ANALYSIS

01

COUNCIL CONTROLS

02

MACQUARIE AXIS - A PRECINCT VISION

03



PTW 03.1 URBAN AXIS



We envision a new Macquarie Axis connecting the heart of the Liverpool City with the future stadium in Woodward Park. Macquarie Street will be developed into an entertainment precinct, within walking distance to public transport, retail commercial hub and event destination.



Future Stadium and Recreational Precinct



PTW 03.2 MACQUARIE STREET
- EAT STREET PRECINCT



Macquarie Street Section

This gateway development addresses Macquarie Street's Eat Street Precinct. The future extension of Bathurst Street produces permanent traffic calming on Macquarie Street, enables a wider footpath. Outdoor seating arrangement activates streetscape, encourages day-time and night-time activities. This site can be a catalyst for development of this exciting precinct.



PTW

URBAN ANALYSIS

01

COUNCIL CONTROLS

02

MACQUARIE AXIS - A PRECINCT VISION

03

DESIGN PRINCIPLES

04

PTW 04.1 LOCAL CONTEXT



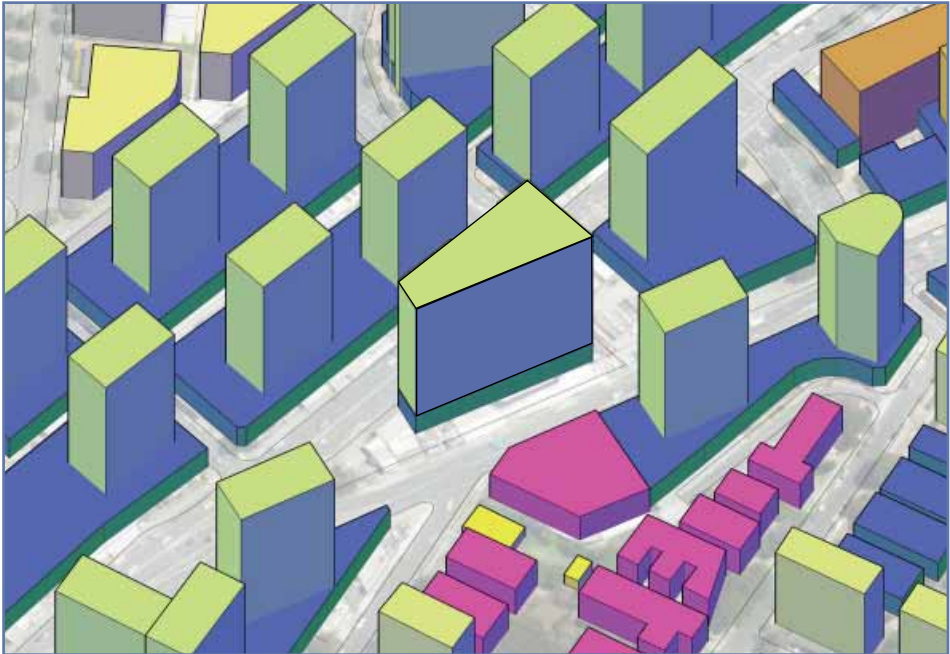
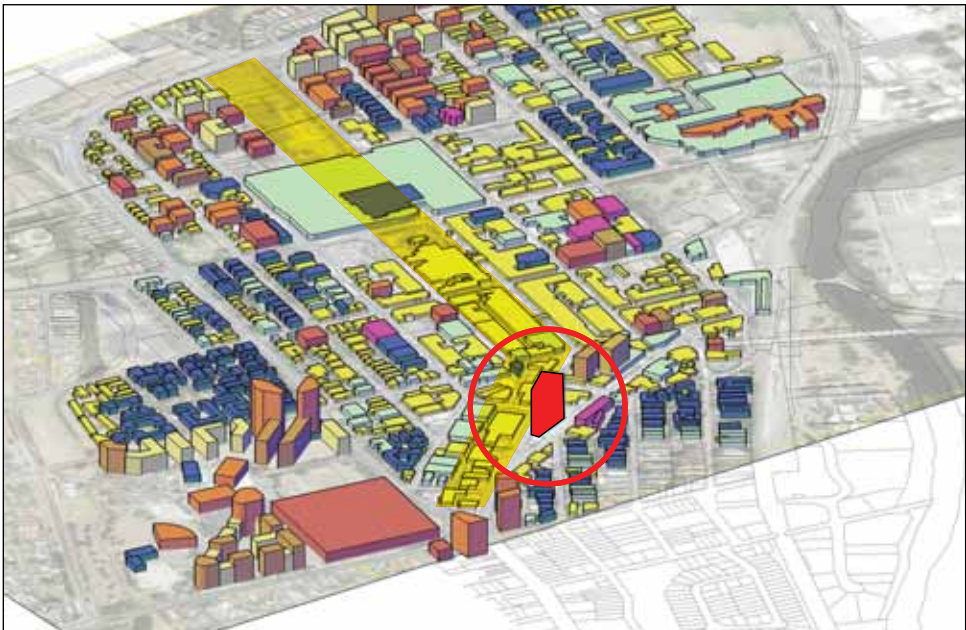
Corner of Macquarie and Terminus Street Liverpool, for Cannavo Investments

PTW 04.3 CURRENT & FUTURE CONTEXT

The subject site is identified by Liverpool Council as a special corner site, a gateway development that functions as a beacon, a statement of intent for the city.

The development will be one of the most prominent sites and will create a symbol of the city promoting change in the existing urban fabric.

In the next 10-50 years as this area grows, this development will remain special due to its location and design statement as the sign post at the Southern Gateway.

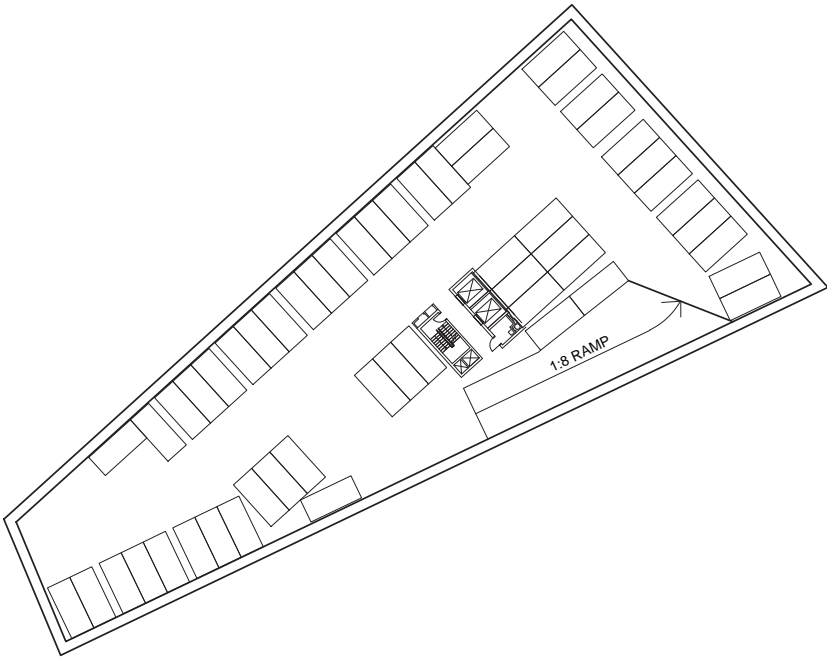


PTW 04.4 SITE CHALLENGES - PARKING

CHALLENGES

One of the biggest challenges to this site is car parking. The nature of a thin triangular site limits the efficiency of a car park layout. A sample set of plans below shows that a full floor plate can only accommodate around 50 cars. Above ground parking with active frontage will limit the number to 27 cars, which is incredibly inefficient. Georges River and high water table limit practicality to build deep basement parking levels.

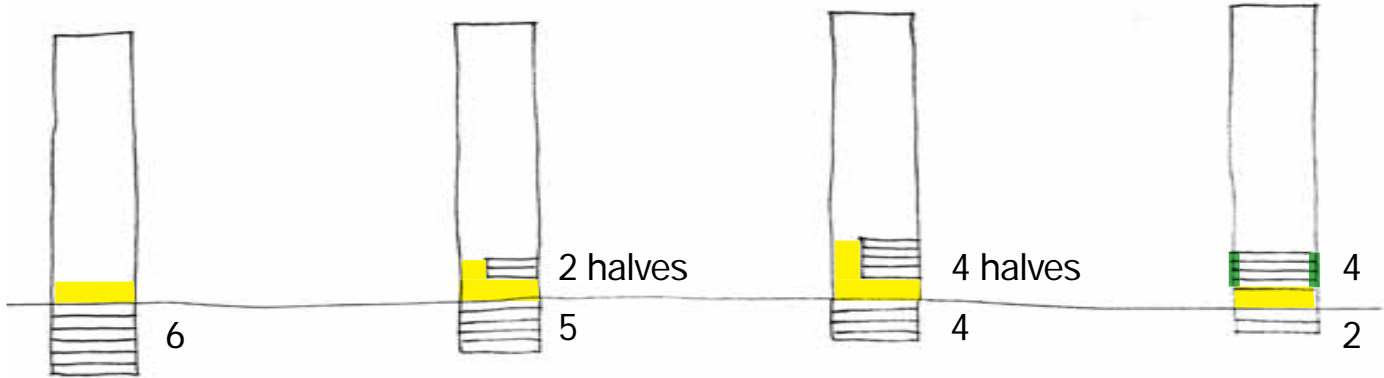
Full envelope parking layout - base or podium (54 cars)



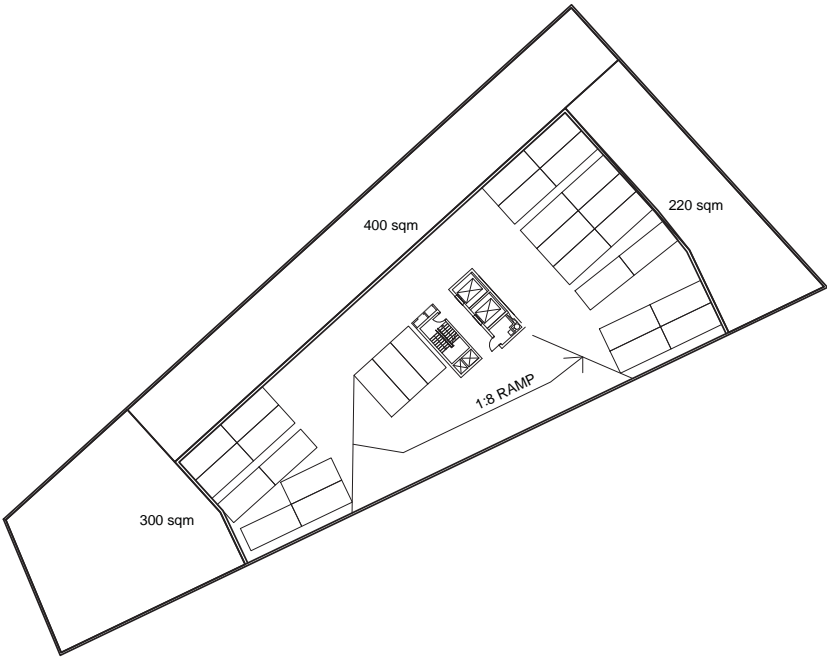
All basement parking.
- deep excavation with water table
- impractical and costly

Some podium parking with active edge
- inefficient parking layout

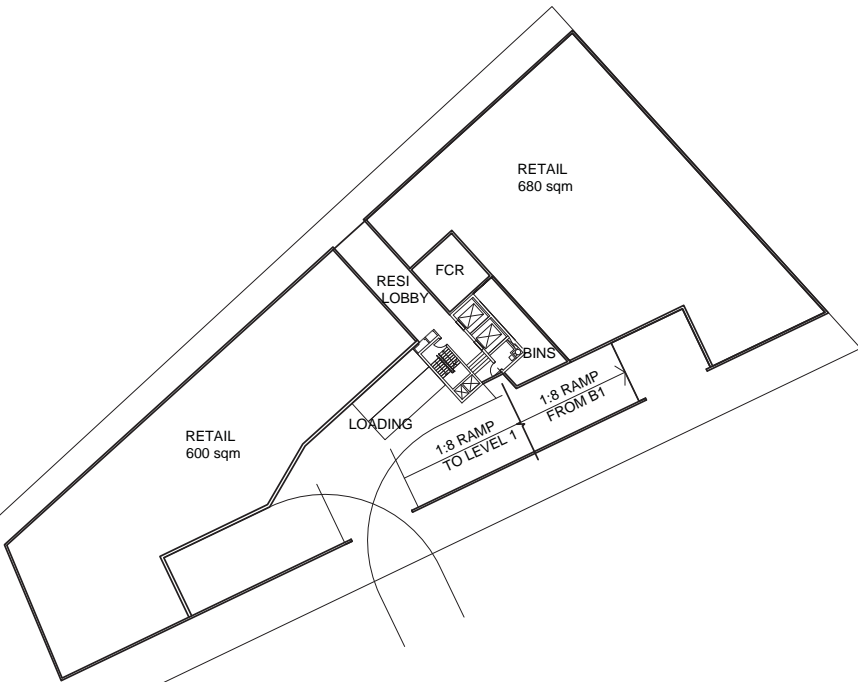
Full floors above ground with screening.



Podium parking with active edges (27 cars)
- result is impractical



Ground floor



PTW 04.5 SITE CHALLENGES - VEHICLE ENTRY

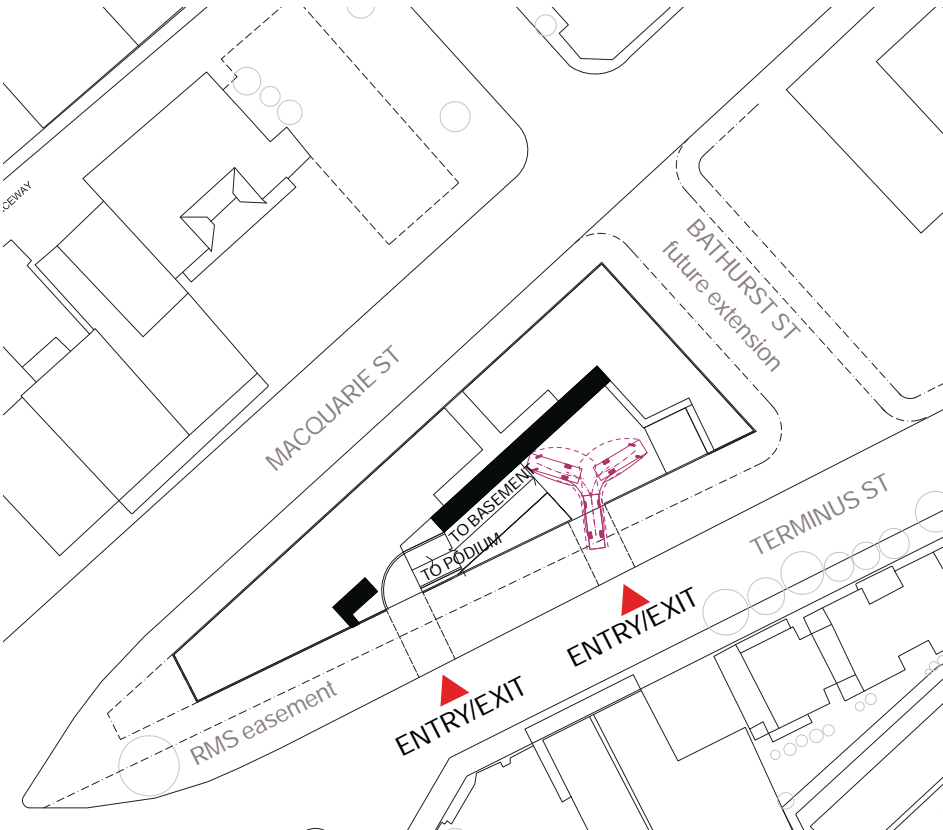


Macquarie St: local road
Terminus St: state road (easement resumed)
Bathurst St: extension (land resumed)

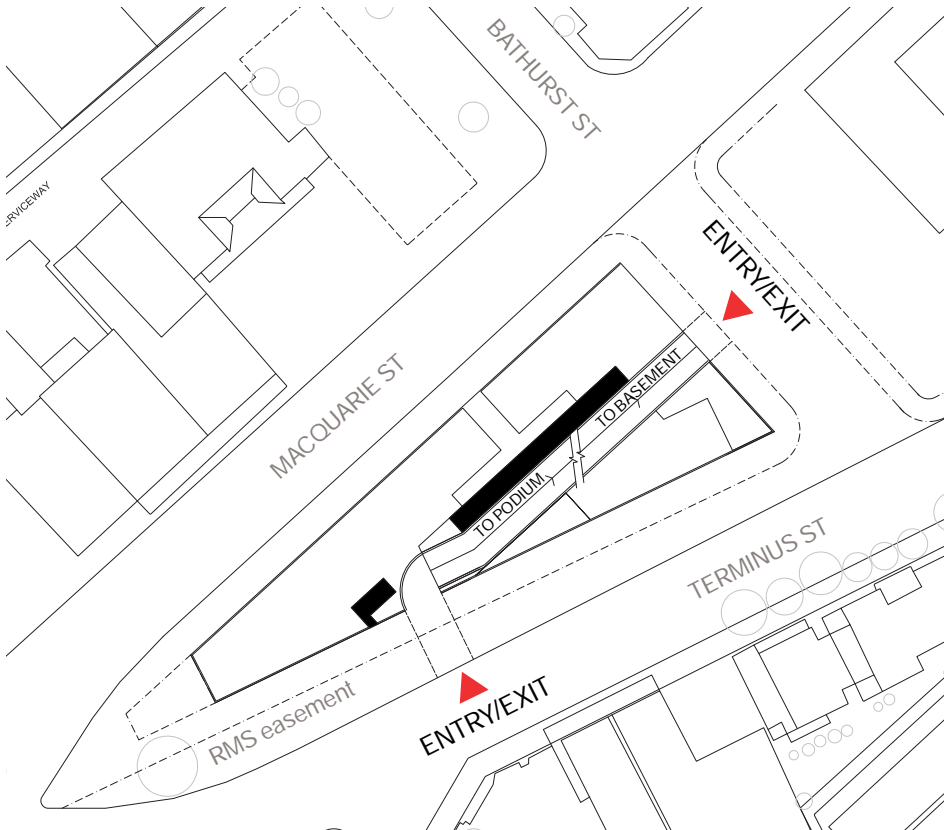
Council vision: Macquarie St reduced to two lanes with parking
RMS vision: propose widening Terminus St to 6 lanes

Varying vehicular entry options were explored.

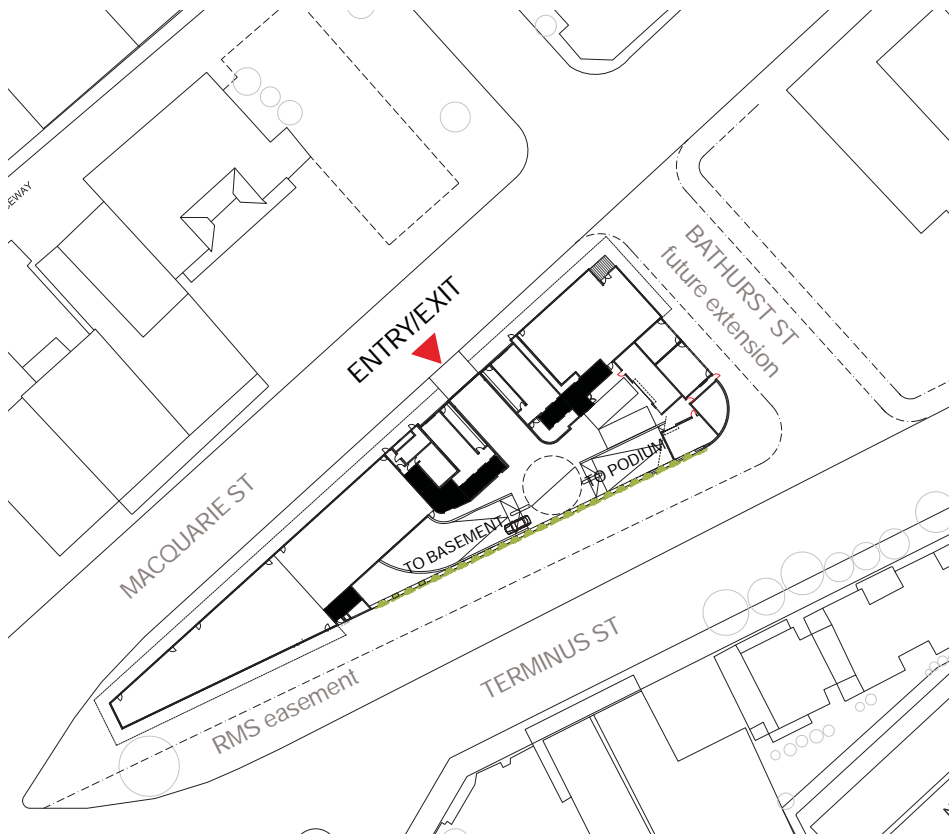
RMS and Council meeting on 12 January 2016
RMS will not accept any vehicular entry off Terminus St



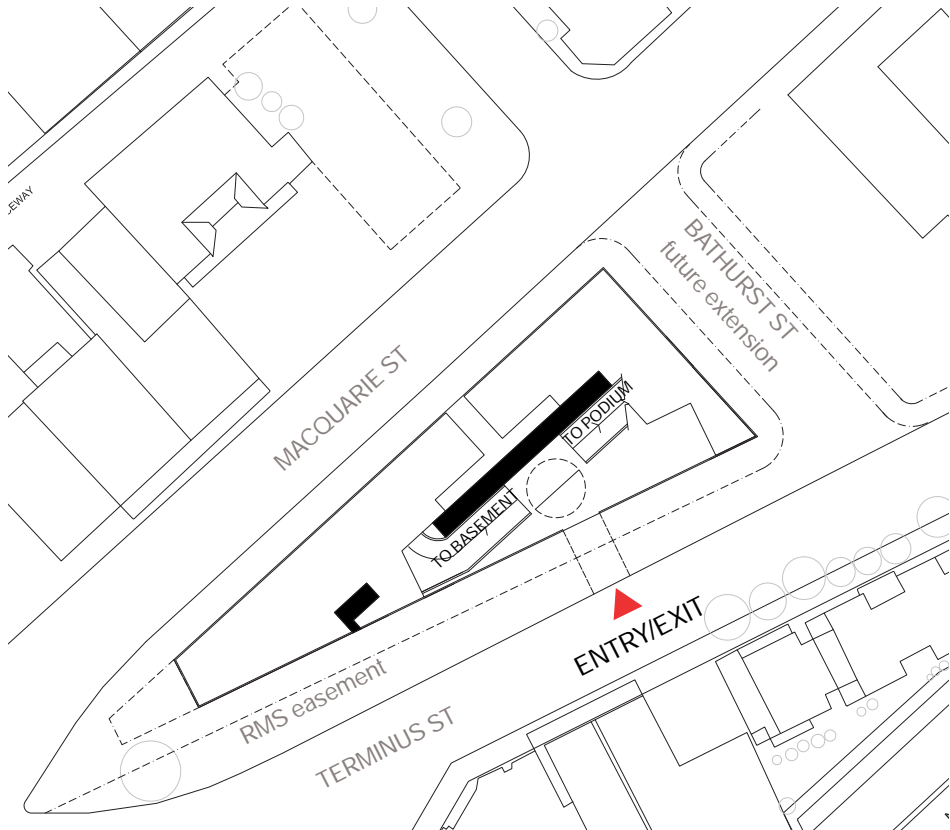
TWO ENTRIES OFF TERMINUS ST



ENTRIES OFF TERMINUS ST & BATHURST ST



* Minimise vehicle access points off Macquarie St; maximise retail frontage. ONE ENTRY OFF MACQUARIE ST PROPOSED



* Minimise vehicle access points off Terminus St. ONE ENTRY OFF TERMINUS ST

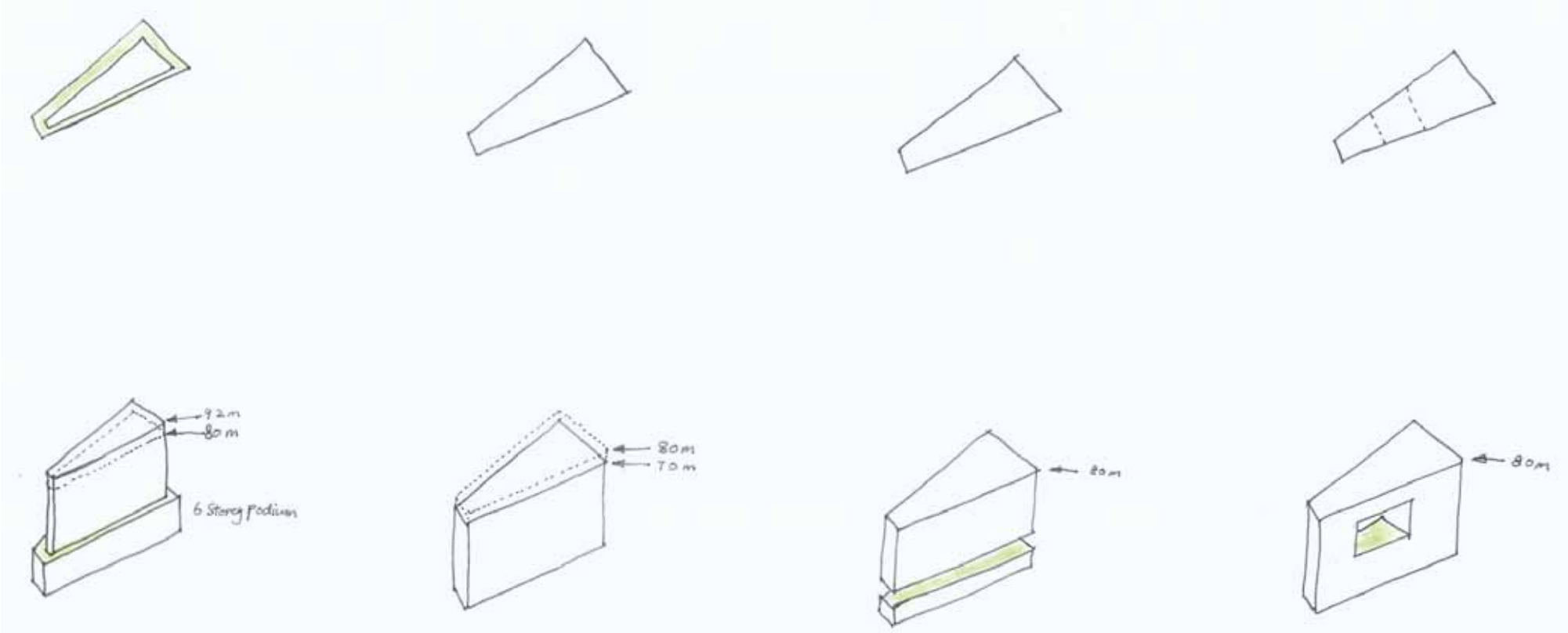
PTW 04.6 FORM & SITE CAPACITY STUDY
- AVAILABLE ENVELOPE & SETBACKS

Context

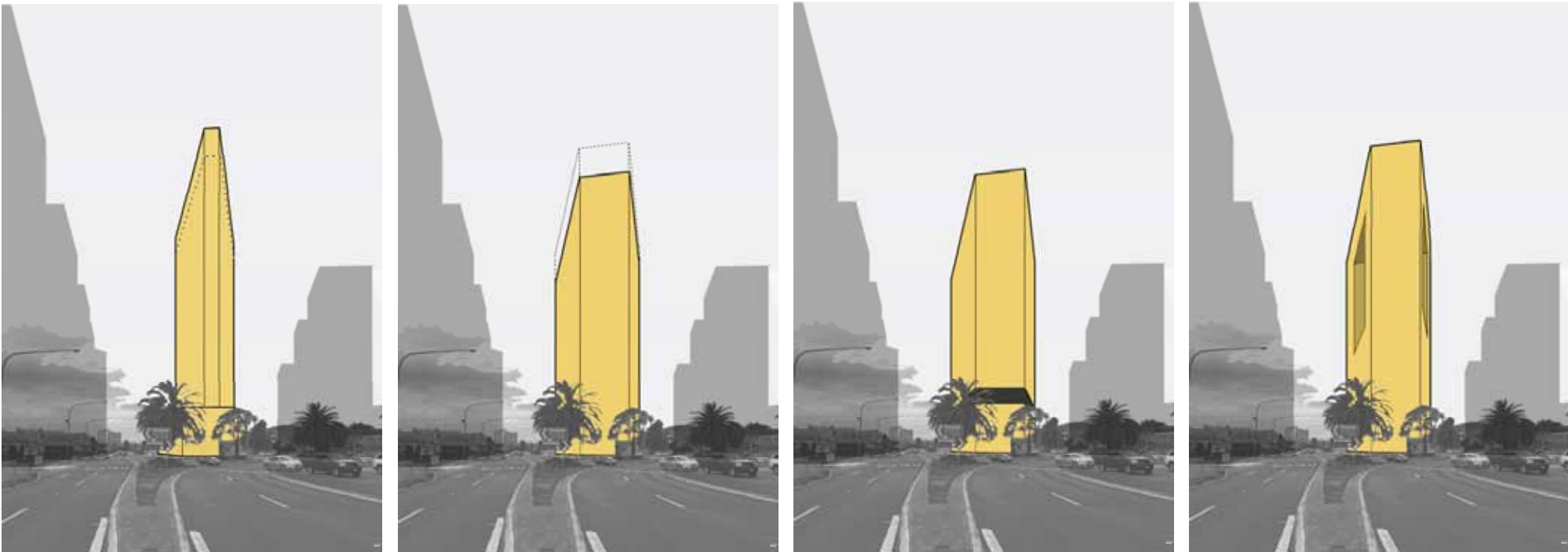
If the setbacks are applied to the site as per the current and proposed Council controls it will limit the feasibility of the development specifically in regards to vehicular entry and circulation as well as residential layout.

As the triangular form is slender in proportion, we are proposing a full envelope with no street frontage or tower setback to produce target yield in its street defining block. This approach frees up floor space for creative articulation to the building, enabling a better response to the site context.

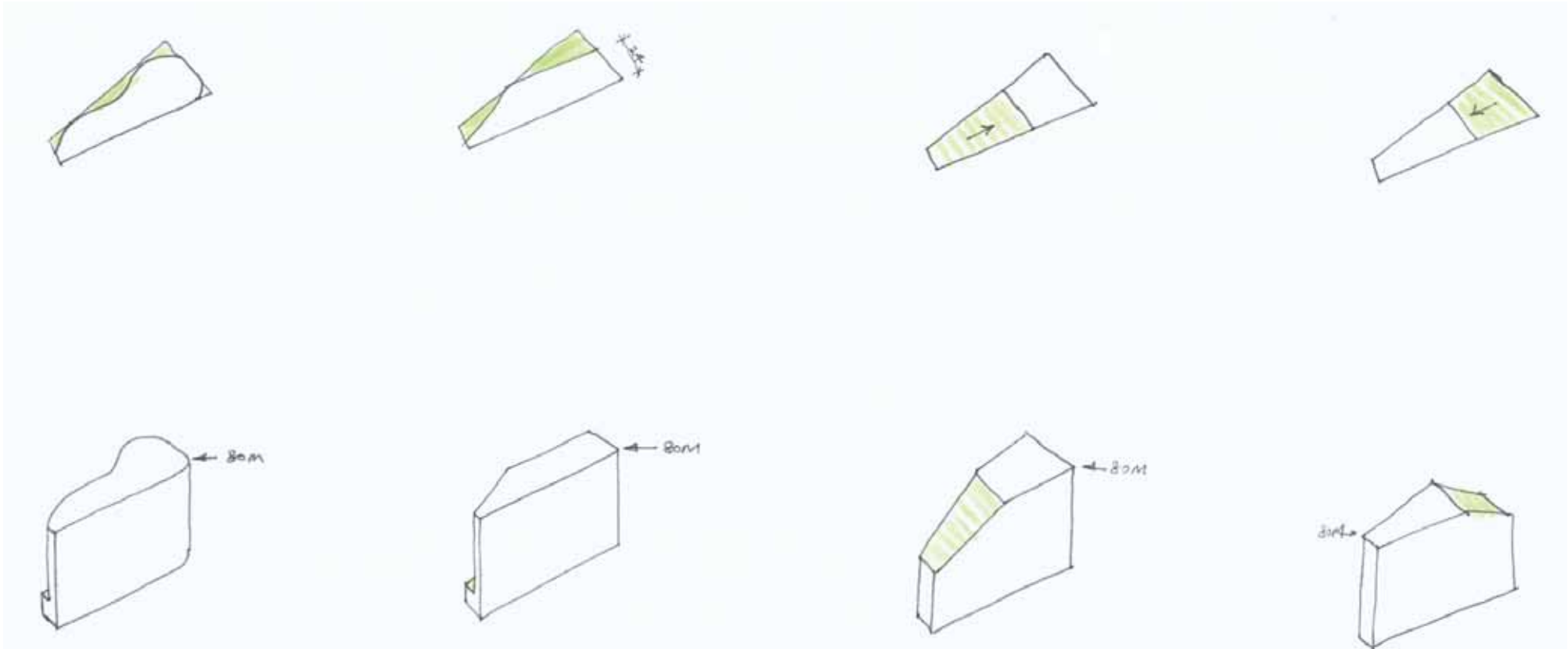
The light grey block in the montages shows a comparison view of the future environment as the Eat Street Precinct develop in density.



- 01_Control Envelope (6m tower setback)
 - 80m produce 8.22:1 FSR
 - add 4 levels to reach 10:1
- 02_No Setback to Tower Envelope
 - 80m produce 11.08:1 FSR
 - need to remove 2.4 levels to reach 10:1
- 03_Transfer reduction to podium
 - 10:1 FSR
 - provide outdoor area to potential childcare and leisure centre uses
- 04_Portal cut
 - 10:1 FSR



Further study of sculptural forms to explore appropriate form for this corner site as well as for the city



05_Cut Block, response to Solar Access

- 10:1 FSR
- slimmer profile on corner
- different character for 2 streets

06_Bar with Chamfer

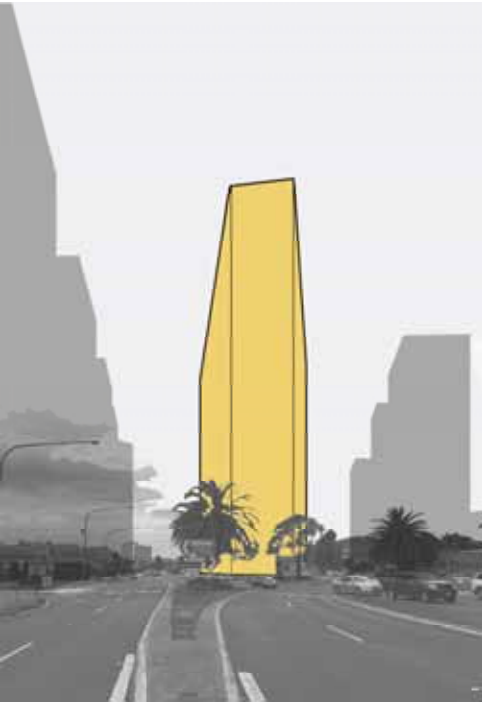
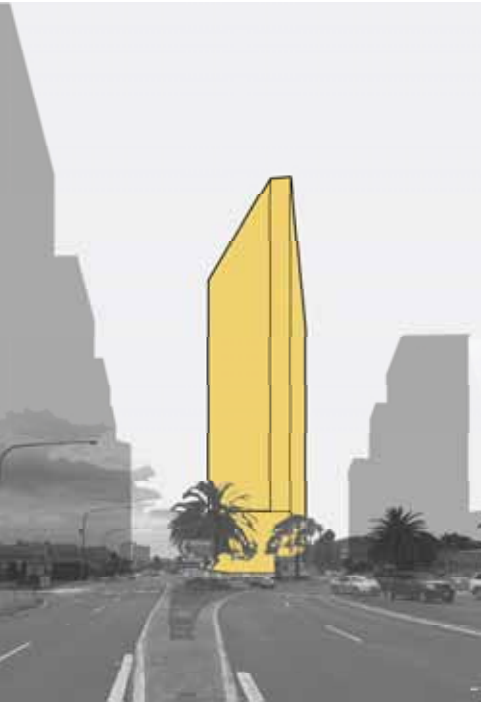
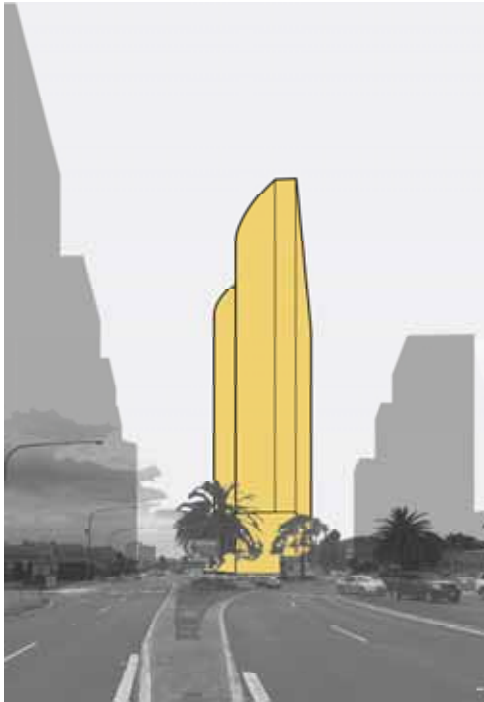
- 10:1 FSR
- good building depth
- double loaded corridor

07_Chamfer A

- 10:1 FSR
- terraced landscape

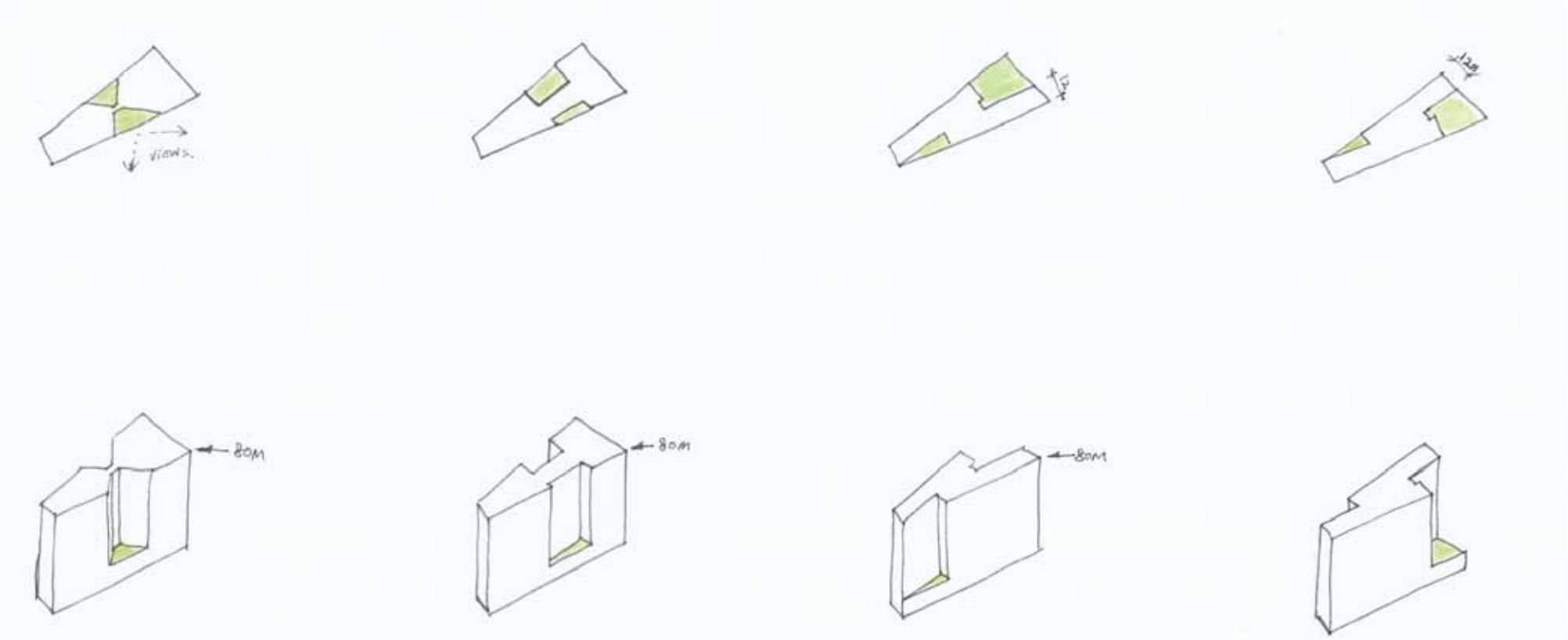
08_Chamfer B

- 10:1 FSR
- terraced landscape
- presents full height to corner



PTW

An alternative approach works with a pair of 700-750sqm floor plates joined to breakdown the scale of the building, producing a variety of forms that addresses the need for solar access and outlook.



09_Two Towers aligned with views and solar access

- 10:1 FSR

10_Two Towers with Bridge

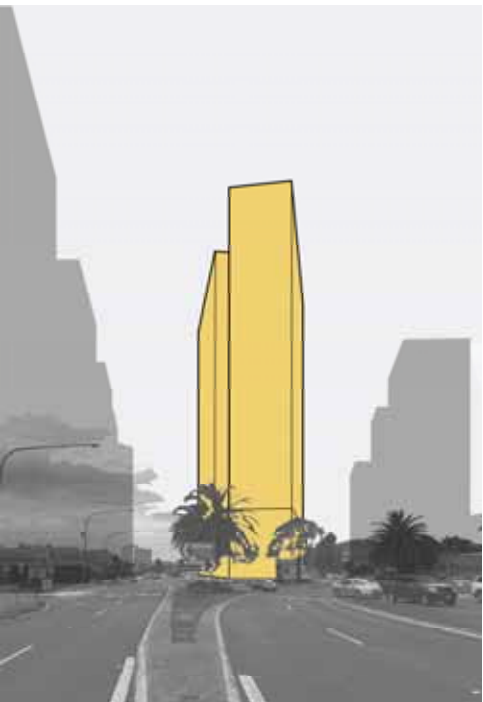
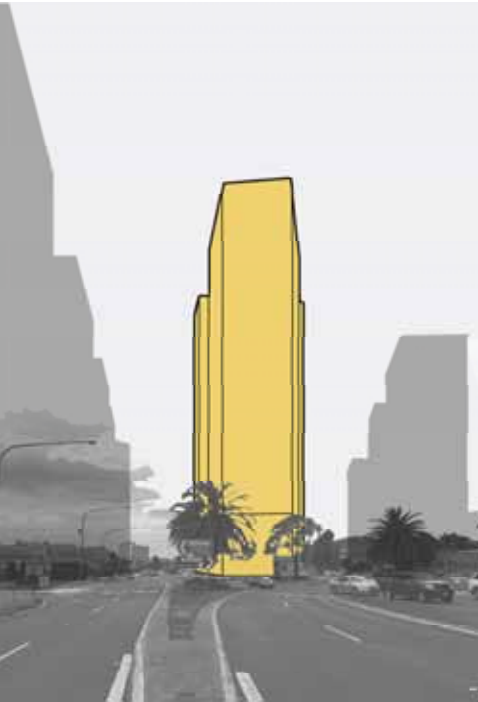
- 10:1 FSR
- 2x 750m2 floor plate

11_Slider A

- 10:1 FSR
- 700m2 floor plates
- single loaded corridor

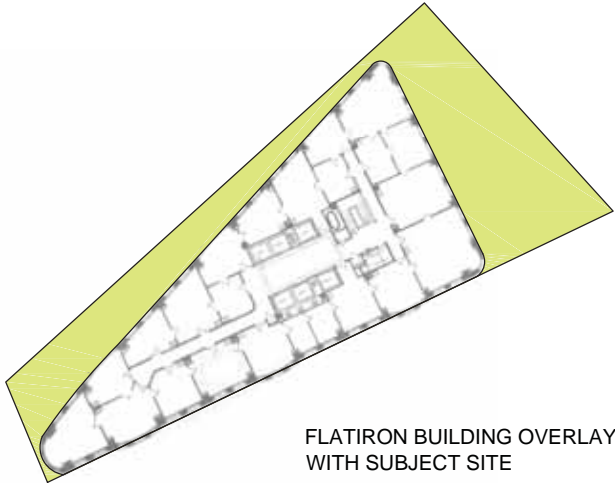
12_Slider B

- 10:1 FSR
- 700m2 floor plate
- single loaded corridor



PTW 04.7 PLANNING CONSEQUENCES OF BUILDING FORMS

The different shapes of floor plates produce different outcomes when considering solar access and cross ventilation factors for SEPP 65 and ADG.



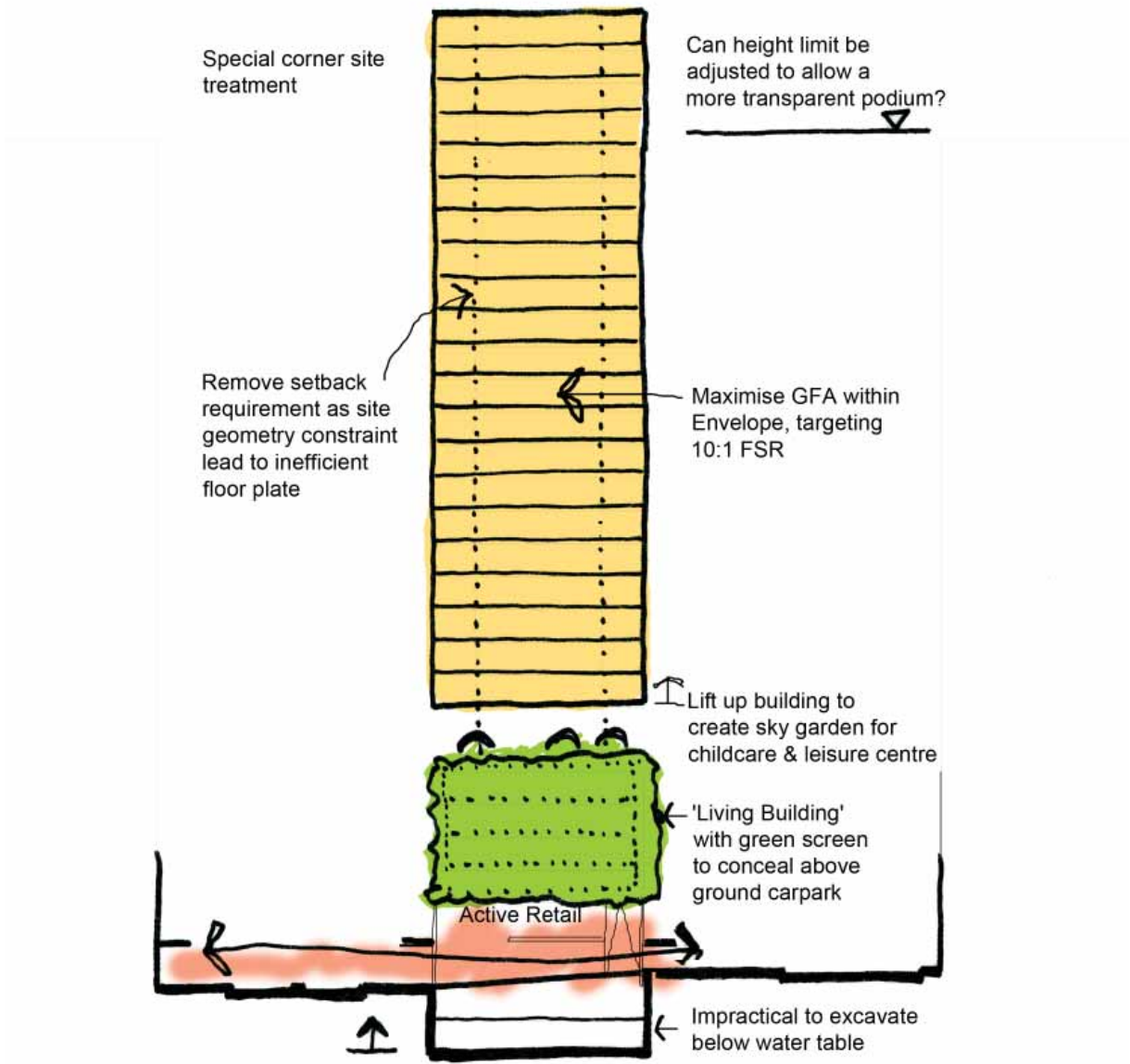
FLATIRON BUILDING OVERLAY WITH SUBJECT SITE

<div>LAYOUT 1</div> <div></div> <div>TOWER SETBACK 5/7 SOLAR OK. 71%</div> <div><ul style="list-style-type: none">IMPRACTICAL FLOOR PLATE</div>	<div>LAYOUT 2</div> <div></div> <div>FULL BLOCK 10/14 SOLAR OK. 71%</div>	<div>LAYOUT 3</div> <div></div> <div>CURVE CUT 7/11 SOLAR OK. 73%</div>	<div>LAYOUT 4</div> <div></div> <div>BAR WITH CHAMBER 9/13 SOLAR OK. 70%</div>
<div>LAYOUT 5</div> <div></div> <div>2 TOWERS W/ BRIDGE 10/12 SOLAR OK. 83%</div>	<div>LAYOUT 6</div> <div></div> <div>2 TOWERS ALIGN WITH VIEW/SOLAR 9/12 SOLAR OK. 75%</div>	<div>LAYOUT 7</div> <div></div> <div>SLIDER A 7/10 SOLAR ok. 70%</div>	<div>LAYOUT 8</div> <div></div> <div>SLIDER B MOD 8/11 SOLAR NG. 73%</div>

PTW 04.8 CONCEPT PROPOSAL

In consideration of all the drivers and constraints to this site, we propose a simple, elegant mass floating above an attractive and striking podium that gives identity to the site and promotes good environmental outcome to the local area.

The feature screen-wall and amenity allow natural ventilation to the hidden car park, while providing a visual treat to the public domain.



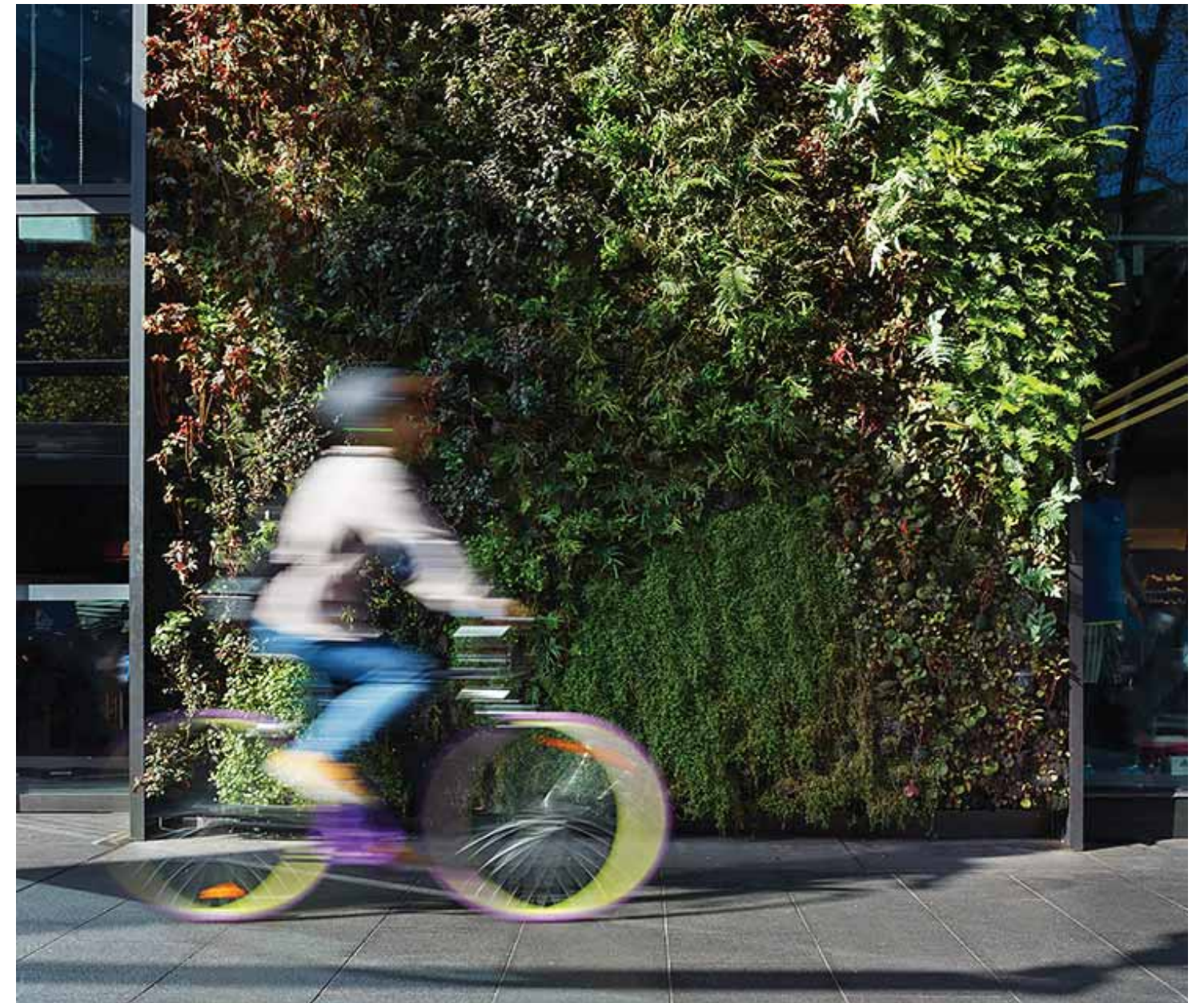
PTW



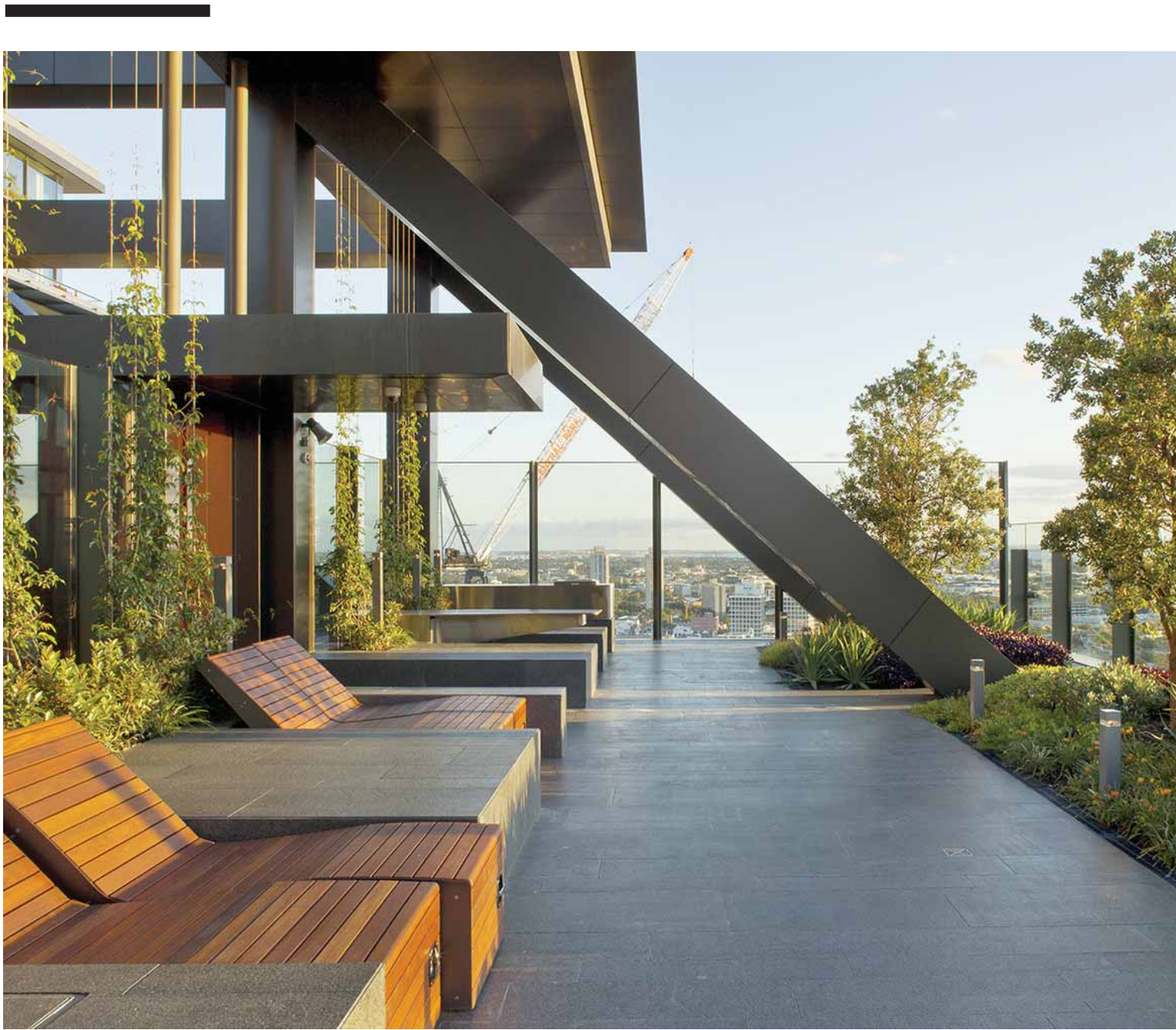
An iconic building able to set a new place for Liverpool, creating a vibrant atmosphere and a modern identity for the city



PTW 04.9 ONE CENTRAL PARK REFERENCE



PTW



Corner of Macquarie and Terminus Street Liverpool, for Cannavo Investments



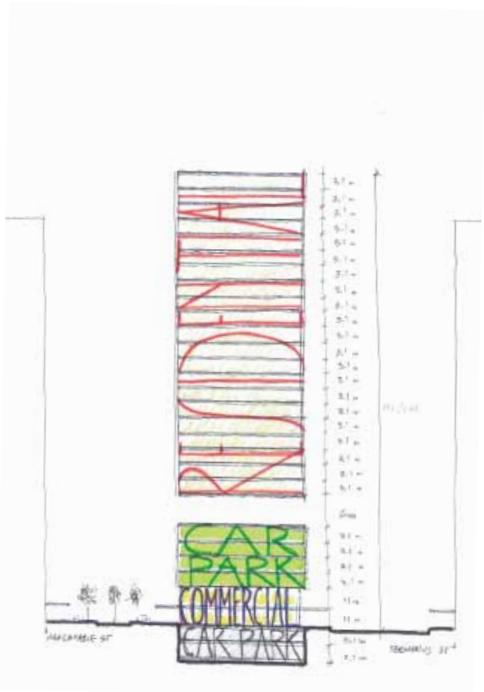
URBAN ANALYSIS 01

COUNCIL CONTROLS 02

MACQUARIE AXIS - A PRECINCT VISION 03

DESIGN PRINCIPLES 04

BUILDING AN ICON: APPROACH 05



URBAN ENVELOPE

The street configuration bounds the site forming a building that faces all the orientations along it's perimeter. The intersection of both Macquarie and Terminus Street creates a strong urban presence culminating at the tip to become a particularly prominent entrance to the South of the city.

The building brief restricts the massing to a fairly simple extrusion of the site boundary with slight margin to play in terms of massing. Since its height is almost 100m, arises the necessity of composing and articulating such a huge volume. Different parts of the program are arranged vertically following a typical podium+tower structure.

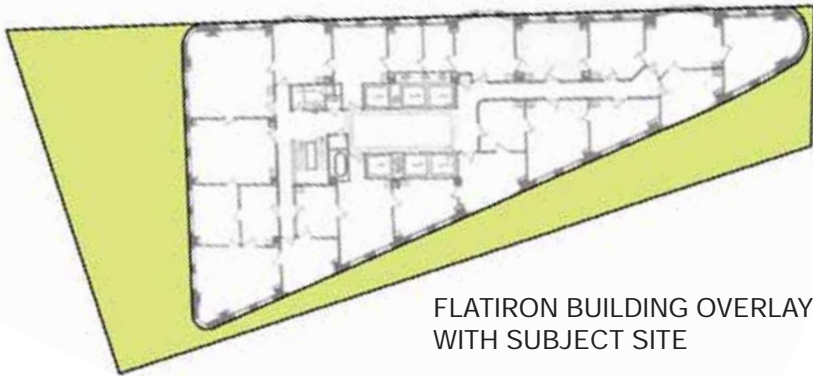
The basement comprises five car-park levels for residential service. Ground floor contains retail area and carpark access. Level 2 to level 3 is car-park. Level 4 to level 5 is commercial office. On top of it a level for community services, acting as transition level, and the rest of the building; 21 levels contain the residential area.



Corner of Macquarie and Terminus Street Liverpool, for Cannavo Investments

FLATIRON BUILDING: PROPORTION AND SCALE

This 22-story steel-framed landmark built in 1857 provides a reference due to it's correlation with our project both in height and size. The flatiron is known as one of the main icons of NY City. Its triangular plan, slightly smaller than ours, pointing sharply towards 5th avenue with Broadway, has become an iconic presence. Regardless of the obvious distance between Manhattan and Liverpool (NSW) the urban scenario is similar: in this case, Macquarie Street and Terminus Street intersect at the Southwest of the site. This crossroad is considered the south gate for the city and an active point for the new Liverpool development.



FLATIRON BUILDING OVERLAY WITH SUBJECT SITE

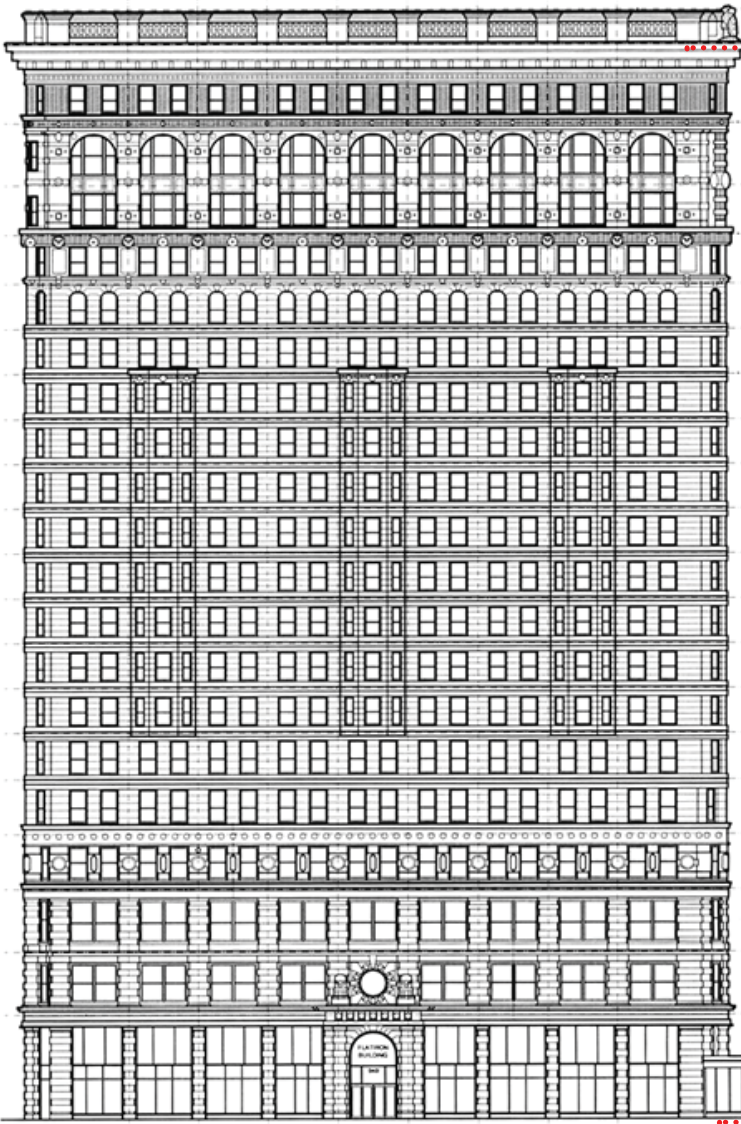


conclusion

unification

elevation

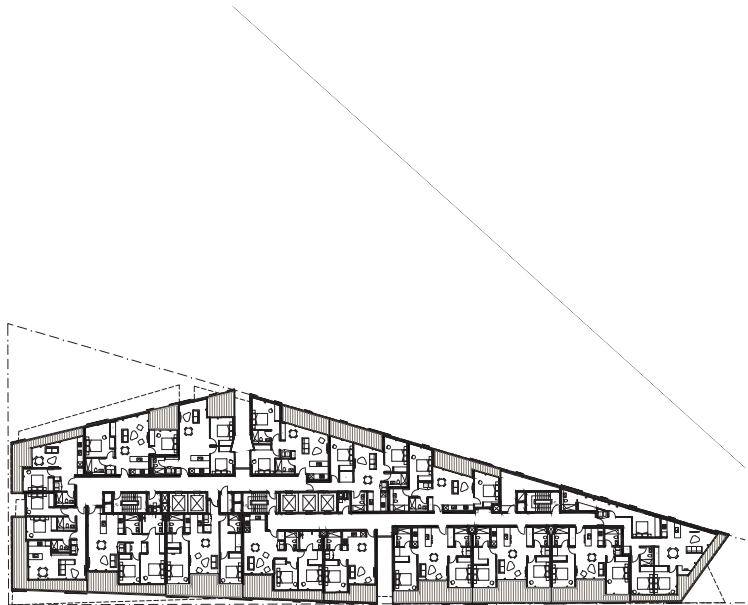
base strata



approximately 93m high

Flatiron facade is divided in 3 parts that follow a classicist composition: basamento (base strata), elevazione (elevation) and unificazione (unification). This composition affects the external articulation rather than the actual functional structure. Yet connects the building vertically through a hierarchical order. Bottom and top levels are emphasized with large scaled order while the middle part remains a smooth canvas with simple windows.

The podium has been formed as a mass to compose the building horizontally, introducing an equal division. Taking the massing of the podium as module, the building is created in form through 4 blocks stacked vertically. A recessed belt at the childcare level articulates the podium without setting back the tower portion of the building.

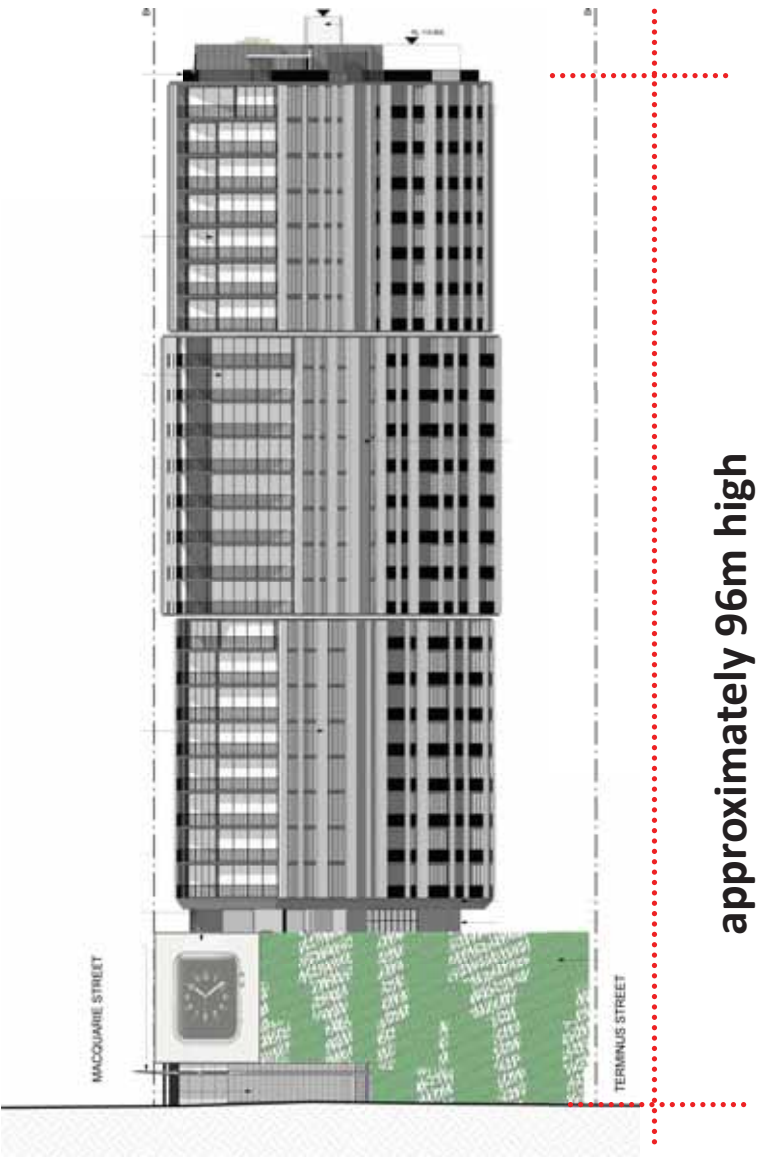


iv - conclusion

iii - unification

ii - elevation

i - base strata



approximately 96m high

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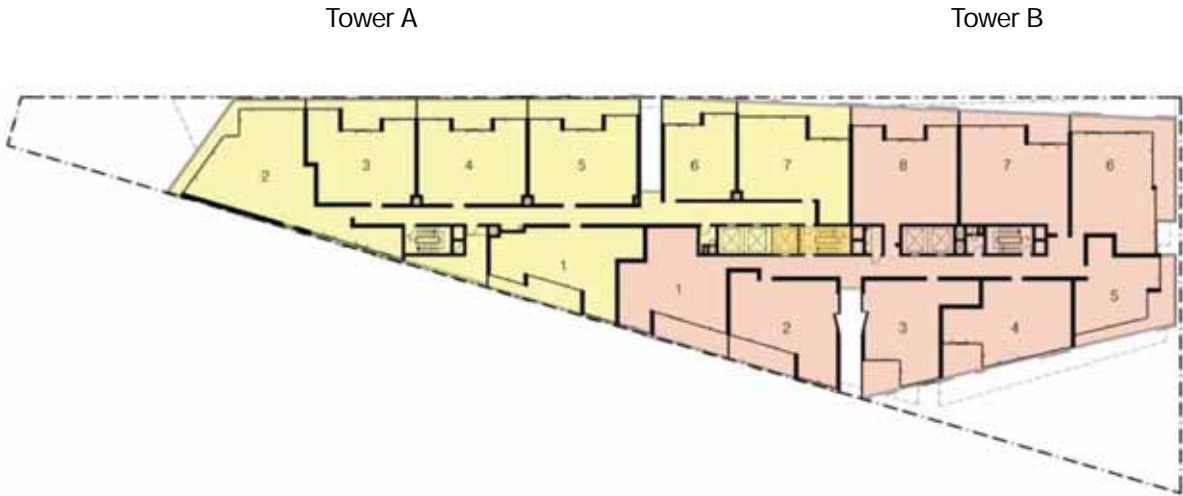


The building is conceived as two towers.

Visually
This is achieved through visually breaking the building with slots into two masses vertically.

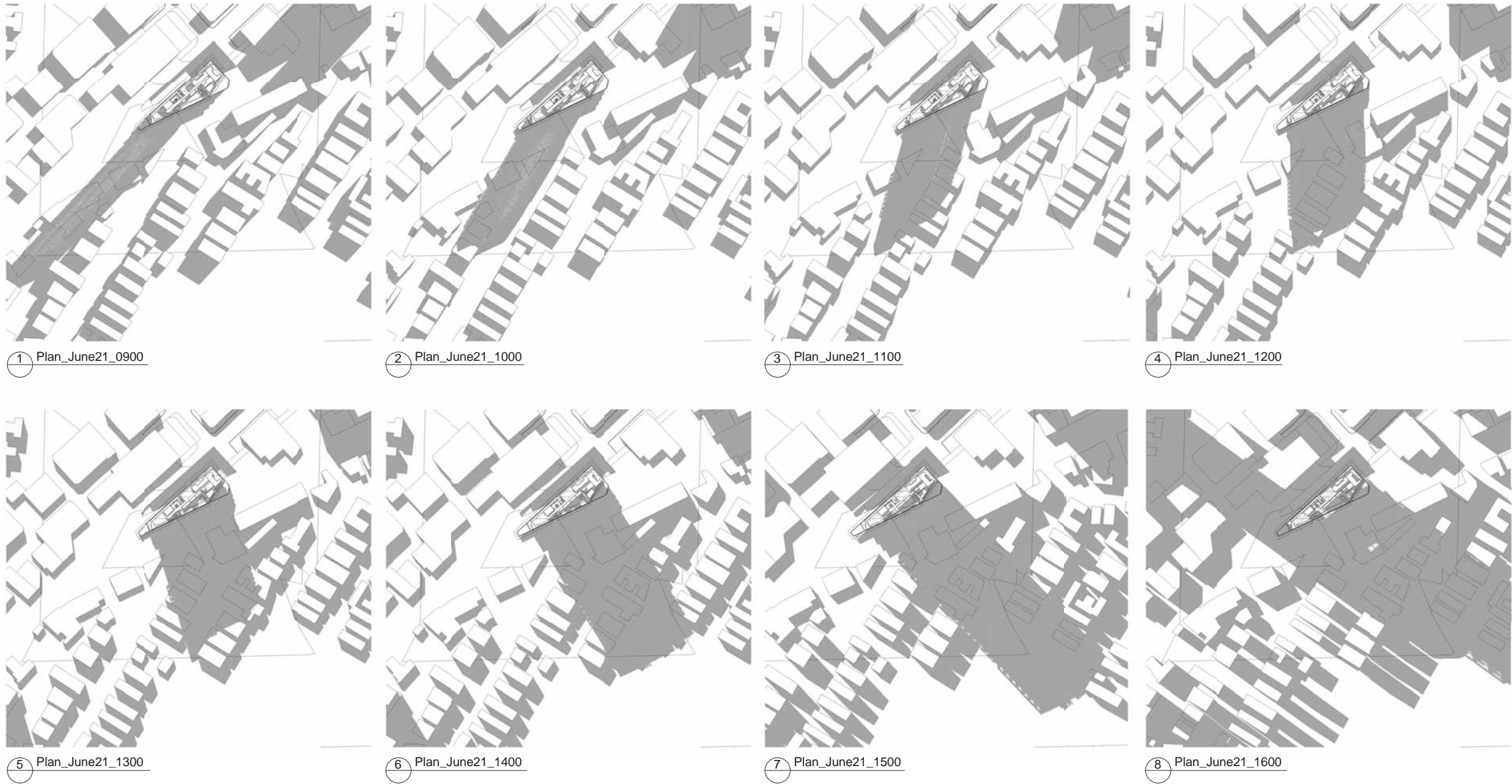
Core
There are two cores with 7 apartments off Tower A and 8 aprtments off Tower B.

Floor Plate
The floor plate of each tower is just over 700sqm.





SHADOW STUDY

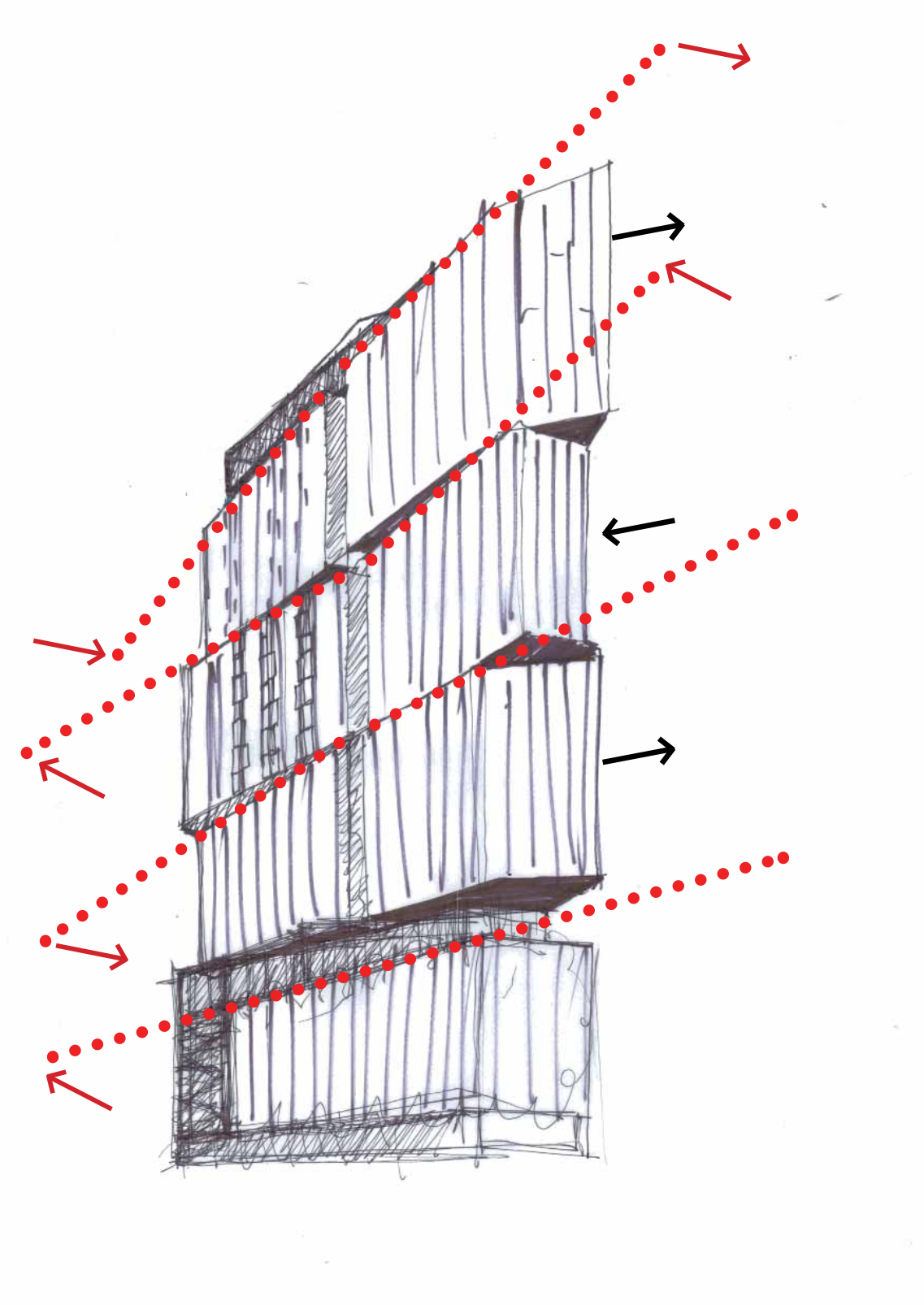
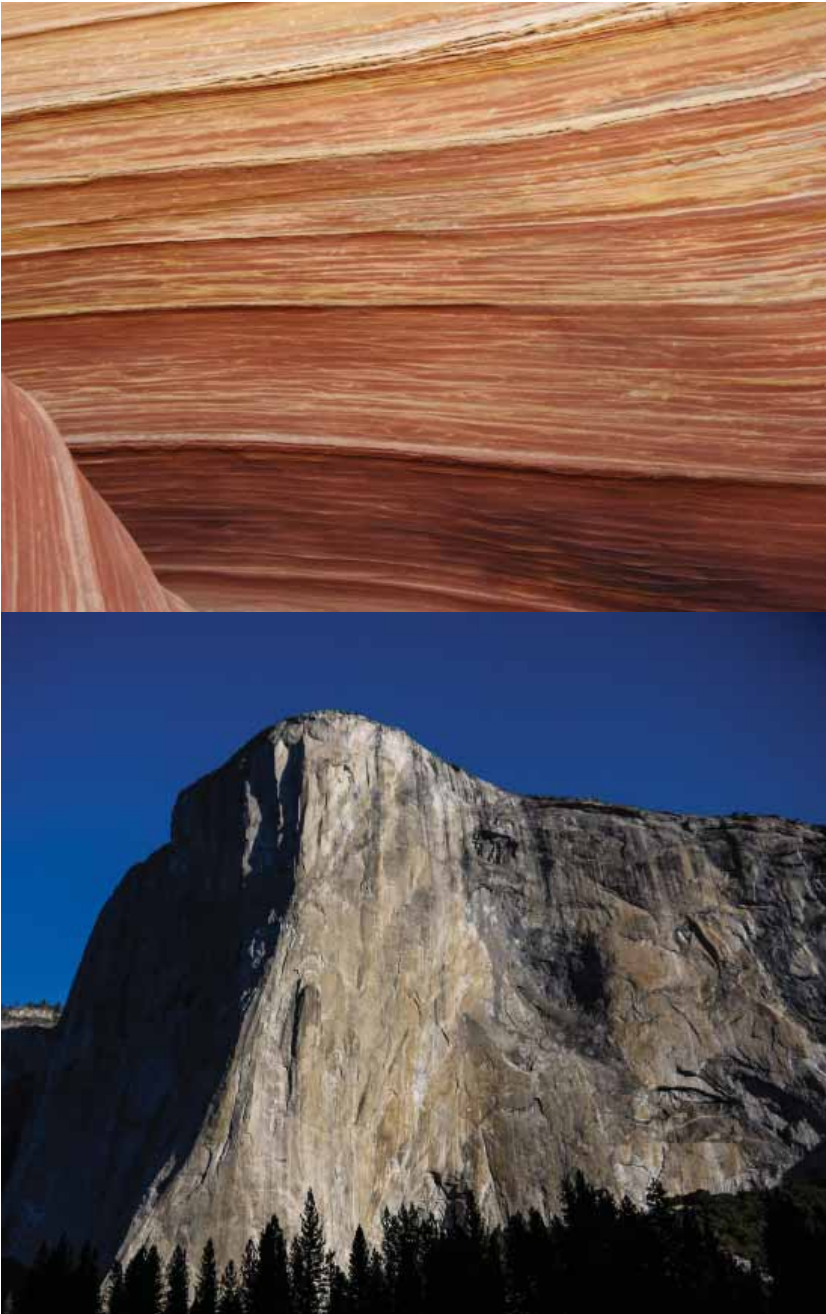


PROMINENCE

In nature there are many examples that relate to the proposal, featuring characteristics that belongs to a landmark. By definition a landmark is a marker, and as it follows, creates directional movements toward its edges, no matter whether those movements arise out of deliberate movements or as a result of induced strains that distort the mass.

The two main streets; Terminus and Macquarie St form strong urban lines bordering the site. The tension and movement that comes out of these urban lines is poetically interpreted in the building through pushing and pulling the building in every strata.

As a result of those movements the whole volume is distorted, generating angles and breaks all around its perimeter.



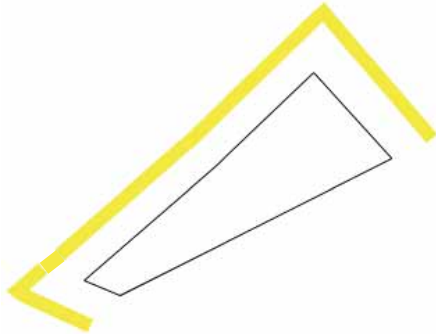
FACADE

Each façade through it's orientation is subject to different urban and sun conditions. Because of this it is important to set a flexible adaptive skin that is able to work efficiently with all the situations while providing a consistent image that matches well with the concept. Surrounding aspects that affects the facade are:

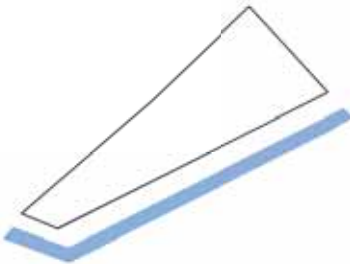
- Sun: NE and NW façades are exposed to approximately 8hrs sun per day. While the SE facade receives no sun.
- Traffic: SW and SE façades face a heavy traffic road that generates noise.
- Views: SW and SE façades are likely to enjoy open views with future city development while NE and NW façades will be surrounded by closed urban views.
- Pedestrian: NW side faces Macquarie St which is Liverpool main commercial street.

A generous outdoor space is required for units layout. From this arises the idea of a filter that protects and connects both inner and outer space, yet creates a continuum that runs around the building, adding transparency, shades and light; an open loggia as such.

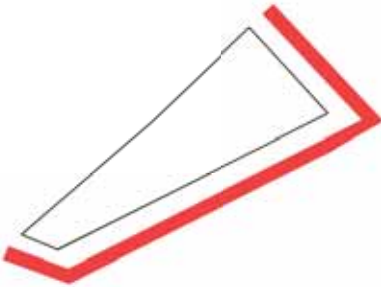
The adaptation of a typical Australian veranda creates a connection to the vernacular way of living: an smooth belt-extension of the house, not a mere slab with a balustrade, but a space for leisure, an opportunity for introducing a crafted second skin for the house. From an urban point of view this modular wrapping cladding is structured with module-pixels that builds up a powerful image for the city, coming back to the starting point.



sunny facade



shady facade



heavy traffic road

DOUBLE WRAPPING SKIN

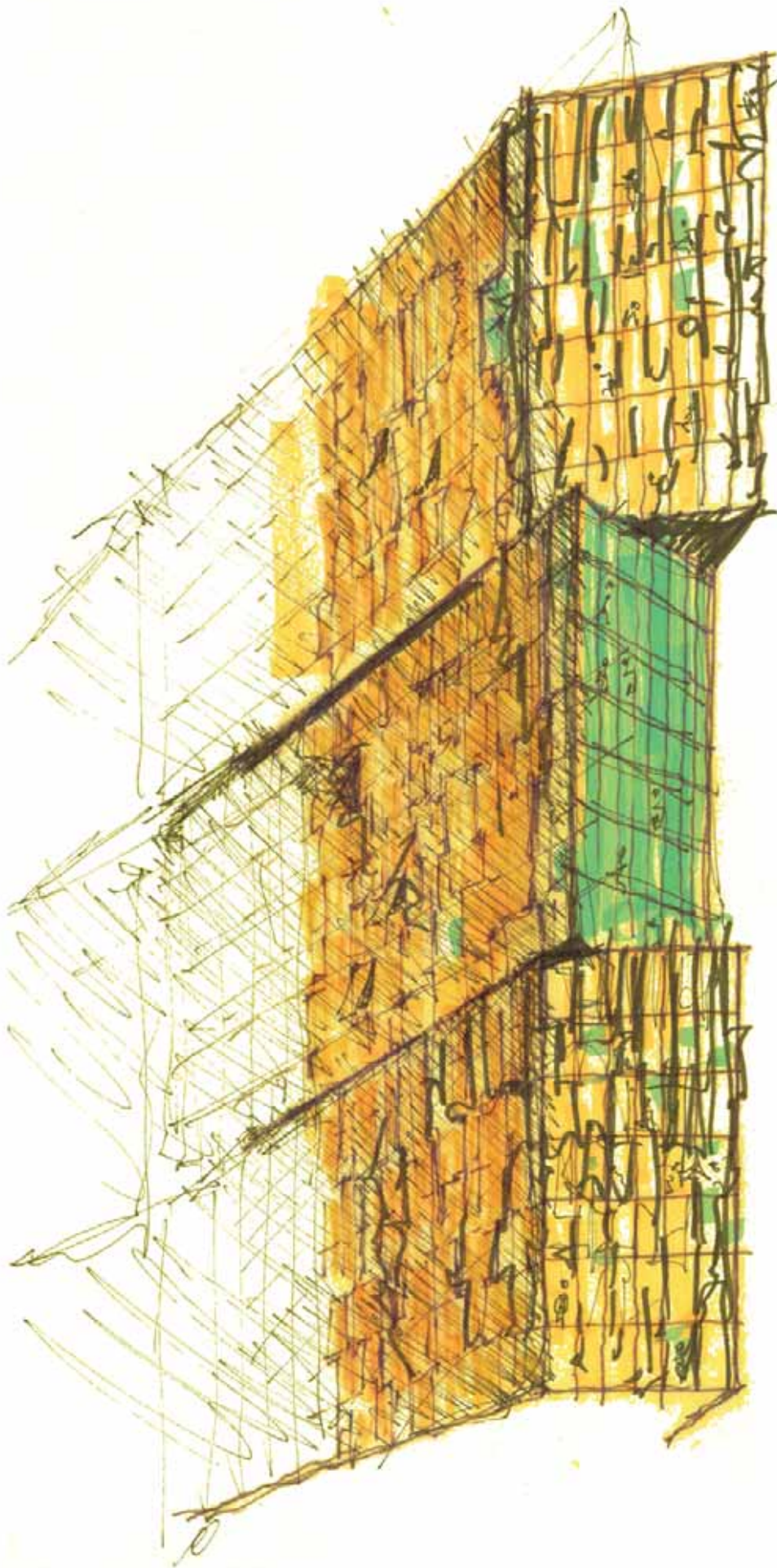
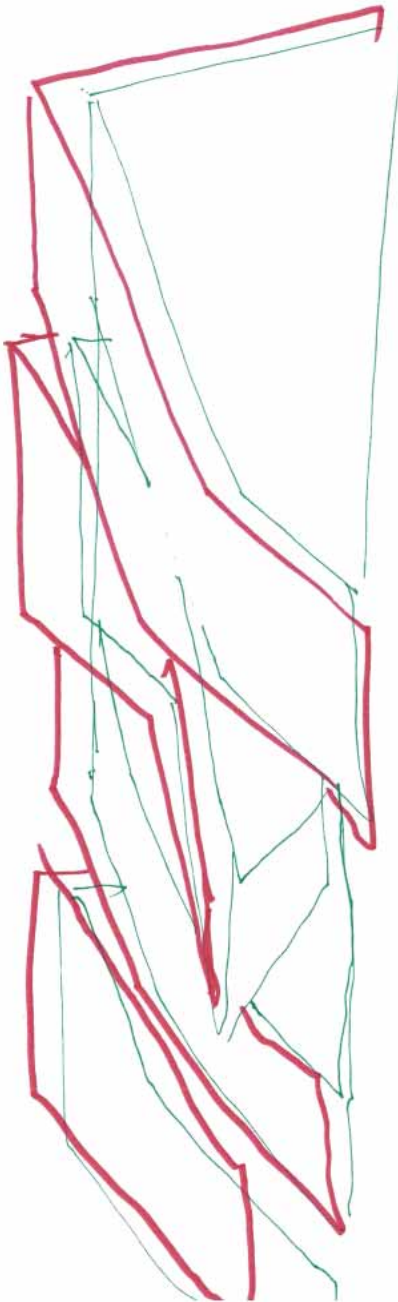
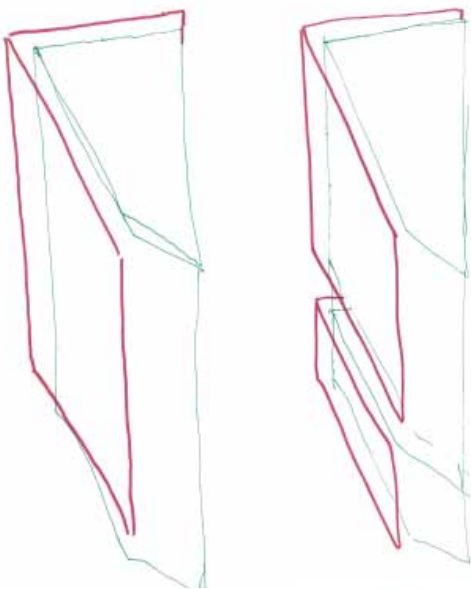
The double skin facade is an effective sustainable solution to sun conditions for the NW and NE façades. The primary skin will correspond to inner spaces cladding, while the secondary bounds the veranda-space, while it builds the external image.

Accordingly with the massing concept, the secondary skin is the one that follows the logic creating continuity whilst incorporating movement and distortion in the massing. Behind this layer the building is a glass box adjusted to the necessities of interior distribution.

The SW and SE façades effectively use the double skin, by maximising transparent and translucent aspects rather than through solid panels. This layer provides both light and a noise blocking protection, creating an operable winter garden space.



Corner of Macquarie and Terminus Street Liverpool, for Cannavo Investments



MATERIALITY AND TEXTURE

The facade is expressed as a unit with an overall unity. The concept drives a powerful massing that requires a treatment of the exterior layer that retains its continuity with a primary language that relates to the main concept.

The ‘verandah’ directs the configuration, combining functionality with physical appearance. The space itself sets an outer continuity that shapes the exterior layer independently of the grids and interior partitions.

We have sourced unique, cost-effective, detail-element facade systems that create a large scale textured canvas made up of small scale repeatable cells. These primary elements will be workable in different ways, depending on the varying conditions being addressed. The skin is reactive as a result, with a changing texture, with two scales: a ‘residential unit’ scale and a ‘large massing’ scale.



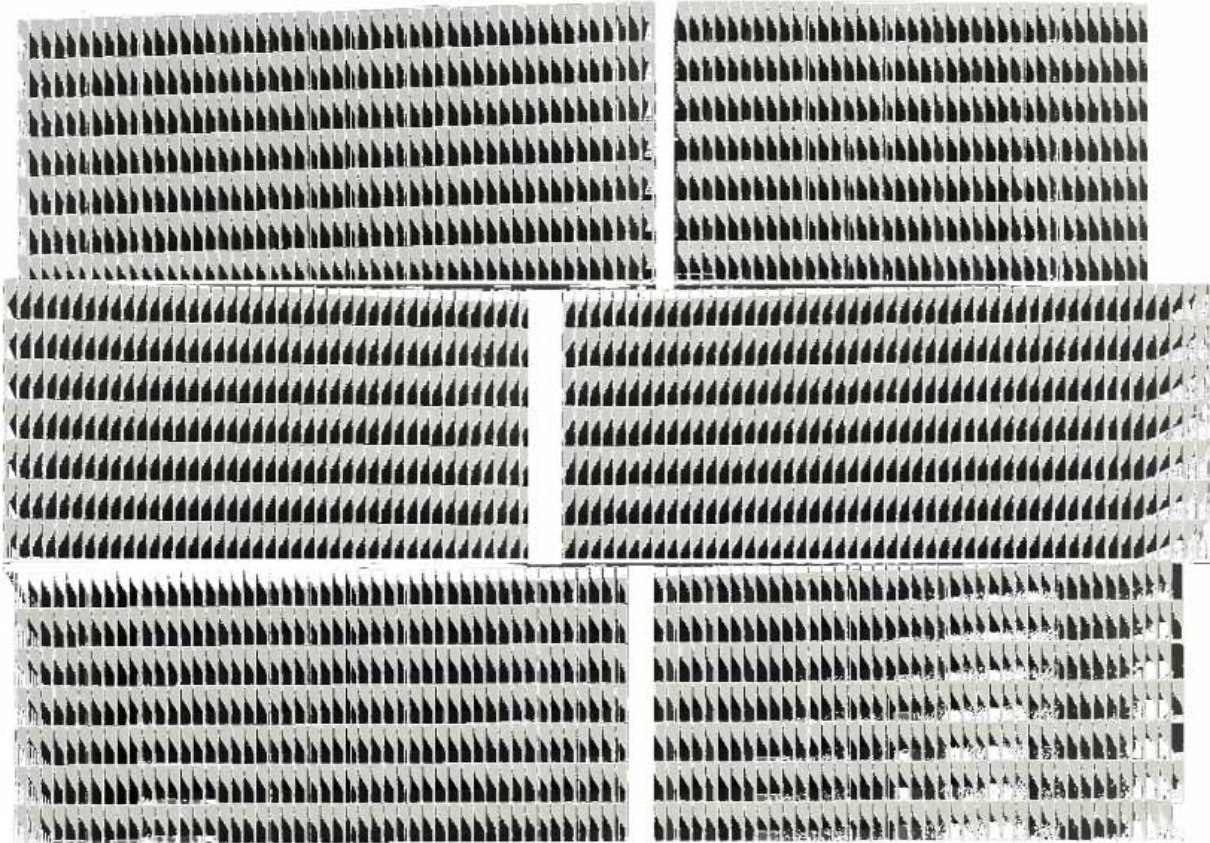
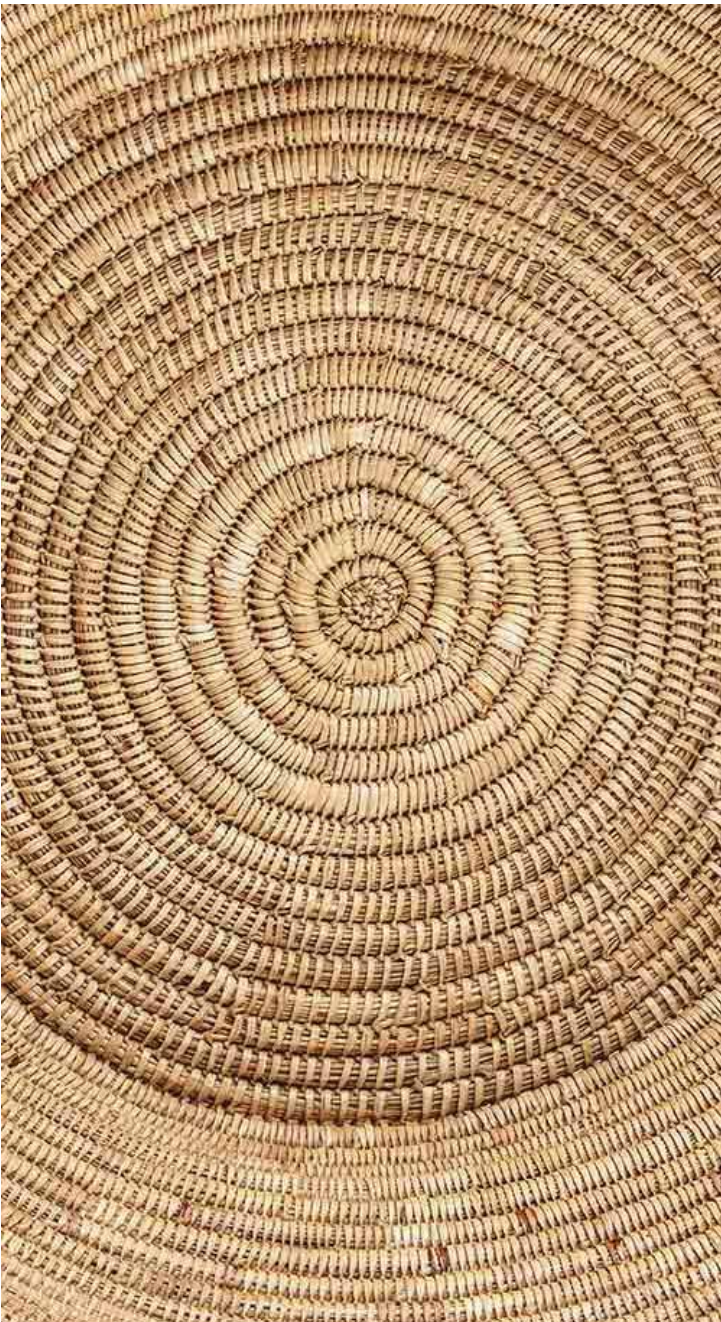
SUN-SHADING MODULAR PANEL

The shape of the modular panel maximizes the sun-shading efficiency while allowing views through, so never is completely close. To increase the possibilities of the facade the louvres are workable, so the balcony area can open up, activating the facade.

ELEVATION LAYOUT

Based on a modular system that finds its reference from local art and hand craft tradition, the building is linked to a local context.

To go away from the typical grid, a 3rd direction was introduced that breaks orthogonal rigidity and provides certain three-dimensional scales-texture to the skin.



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VARIATIONS



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PODIUM

Extension of the module that is set out throughout the whole building.



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URBAN ANALYSIS 01

COUNCIL CONTROLS 02

MACQUARIE AXIS - A PRECINCT VISION 03

DESIGN PRINCIPLES 04

BUILDING AN ICON: APPROACH 05

COMMERCIAL FEASIBILITY: FSR 06

Aeronautical Height Limit		135,900								
				Plate Area (m ²)	Floor Space (m ²)	1 Bed	2 Bed	3 Bed	Total Apts	Vehicle #s
Top of building		120,400								
Communal Roof-27		114,900		1,862	430				318	
Res-26	111,800		1,862	1,308	2	12	1		15	
Res-25	108,700		1,862	1,308	2	12	1		15	
Res-24	105,600		1,862	1,308	2	12	1		15	
Res-23	102,500		1,862	1,308	2	12	1		15	
Res-22	99,400		1,862	1,308	2	12	1		15	
Res-21	96,300		1,862	1,308	2	12	1		15	
Res-20	93,200		1,862	1,308	2	12	1		15	
Res-19	90,100		1,863	1,319	3	10	2		15	
Res-18	87,000		1,863	1,319	3	10	2		15	
Res-17	83,900		1,863	1,319	3	10	2		15	
Res-16	80,800		1,863	1,319	3	10	2		15	
Res-15	77,700		1,863	1,319	3	10	2		15	
Res-14	74,600		1,863	1,319	3	10	2		15	
Res-13	71,500		1,863	1,319	3	10	2		15	
Res-12	68,400		1,805	1,300	2	12	1		15	
Res-11	65,300		1,805	1,300	2	12	1		15	
Res-10	62,200		1,805	1,300	2	12	1		15	
Res-9	59,100		1,805	1,300	2	12	1		15	
Res-8	56,000		1,805	1,300	2	12	1		15	
Res-7	52,900		1,805	1,300	2	12	1		15	
Res-6	49,800		1,805	1,300	2	12	1		15	
Child Care -05		43,800		2,184	719 (Internal space)					
Commercial -04		40,000		2,184	1,747					
Commercial -03		36,200		2,184	1,747					
CP-02		33,100		2,184						40
CP-01		30,000		2,184						40
Retail		24,000		2,280	1,069					
CP-B1		Macquarie St		2,221						48
CP-B2		18,200		2,221						48
CP-B3		15,300		2,221						48
CP-B4		12,400		2,221						48
CP-B5		9,500		2,221						48
									320	

Total Plate Area		53,778	Total Floor Space	33,202
(Including Core and Vertical Access*)			Site Area	3,358
*Core Area = 125.7m2 / floor			Floor Space Ratio (x:1)	9.89

GFA	
Landuse	Area (m2)
Residential	27,920
Childcare	719
Retail	1,069
Commercial	3,494
Total	33,202

GBA	
Landuse	Area (m2)
Residential	40,576
Childcare	2,184
Retail	2,280
Commercial	4,369
Car park	4,369
Total	53,778

Apartment Mix			
	1 Bed	2 Bed	3 Bed
	49	238	31
	15%	75%	10%
Total	318		

Car wash	1	
Residential Bicycles	128	138
Visitor Bicycles	72	21
Motorbikes	17	

CROSS VENTILATION	
Level 6-8	53%
Above Level 9	Complies

Solar	
Level 6-12	67%
Level 13-19	67%
Level 20-26	67%
Roof	100%
Total	68.5%

				Car Parking Numbers					
	1 Bed	2 Bed	3 Bed	Residential	Visitor	Retail	Commercial	Adaptable	Service
DCP	49	238	47	334	33	7.12	28.08	8	8
RMS	19.6	166.6	37	223	32	7.12	28.08	6	8
				Total					
				418					
				304					

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