URBIS

MEMORIAL AVENUE LIVERPOOL

URBAN DESIGN REPORT

PREPARED FOR

IL CAPITANO INVESTMENTS PTY LTD

MARCH 2019

EXECUTIVE SUMMARY

The site is located at the south-western gateway of the Liverpool City Centre forming part of an emerging precinct characterised by newly constructed mixed-use, high-density residential apartments.

The development application prepared on behalf of Il Capitano outlines a vibrant mixed-use vision for the site which integrates the existing urban fabric into the development, completing the urban block at Memorial Avenue, Bathurst Street and Castlereagh Street.

It establishes a generous public domain response o Memorial Avenue which forms part of the journey between the two regionally significant public open spaces comprising of the Georges River and Woodward Park and Brickmakers Creek.

The proposal delivers improved design outcomes and public benefits which is summarised as follows:

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ENHANCED PUBLIC DOMAIN

A generous setback from Memorial Avenue establishes a public domain outcome along this important spine to provide a shaded corridor of trees, seating, gathering and meeting space that contributes to the life of the city.

FLEXIBILITY FOR CORNER DEVELOPMENT

The design ensures the ability for the adjoining site at 60-76 Memorial Avenue to develop or remain as it is in future scenarios

ACTIVATED GROUND PLANE

The ground floor along Memorial Avenue is activated with retail food and beverage to allow for casual surveillance, activity and vibrancy.

DISCREET SERVICING & ACCESS

All vehicular access and servicing is discreetly located on Castlereagh Street to maintain the future desired character and quality of Memorial Avenue. Bathurst Street is too constrained to accommodate vehicular access and the proposed location minimises the number of conflicts between pedestrian and vehicles.

OPTIMISED COMMUNAL INTERACTIONS

A variety of generous communal open spaces with good solar access is located on different levels to maximise opportunities for communal interaction, a sense of belonging and residential amenity.

A VISUALLY DYNAMIC SKYLINE

The emerging built-form at Liverpool's southern gateway is characterised by newly constructed mixed-use and high-density residential apartments in a podium-tower typology. The taller building heights contribute to the future image of the city which establishes a visually dymanimc skyline from the southern approach to Liverpool CBD from the M5, Hume Highway, Hoxton Park Road and the Cumberland Railway Line.

DEVELOPMENT SUMMARY

4,333 SQM
TOTAL SITE AREA

1,964 SQM
COMMERCIAL & RETAIL GFA

25,998 SQM
TOTAL GROSS FLOOR AREA

23,819 SQM
RESIDENTIAL GFA

6.0 : 1
FLOOR SPACE RATIO

264
RESIDENTIAL UNITS

226/ 85.6%
OF TOTAL RESIDENTIAL UNITS RECEIVE ≥ **2 HOURS SUNLIGHT** IN MID WINTER

31.3%
COMMUNAL OPEN SPACE OF SITE AREA (MIN. 25%)

80M/ 23 ST.
MAXIMUM BUILDING HEIGHT

10.3%
PUBLIC OPEN SPACE

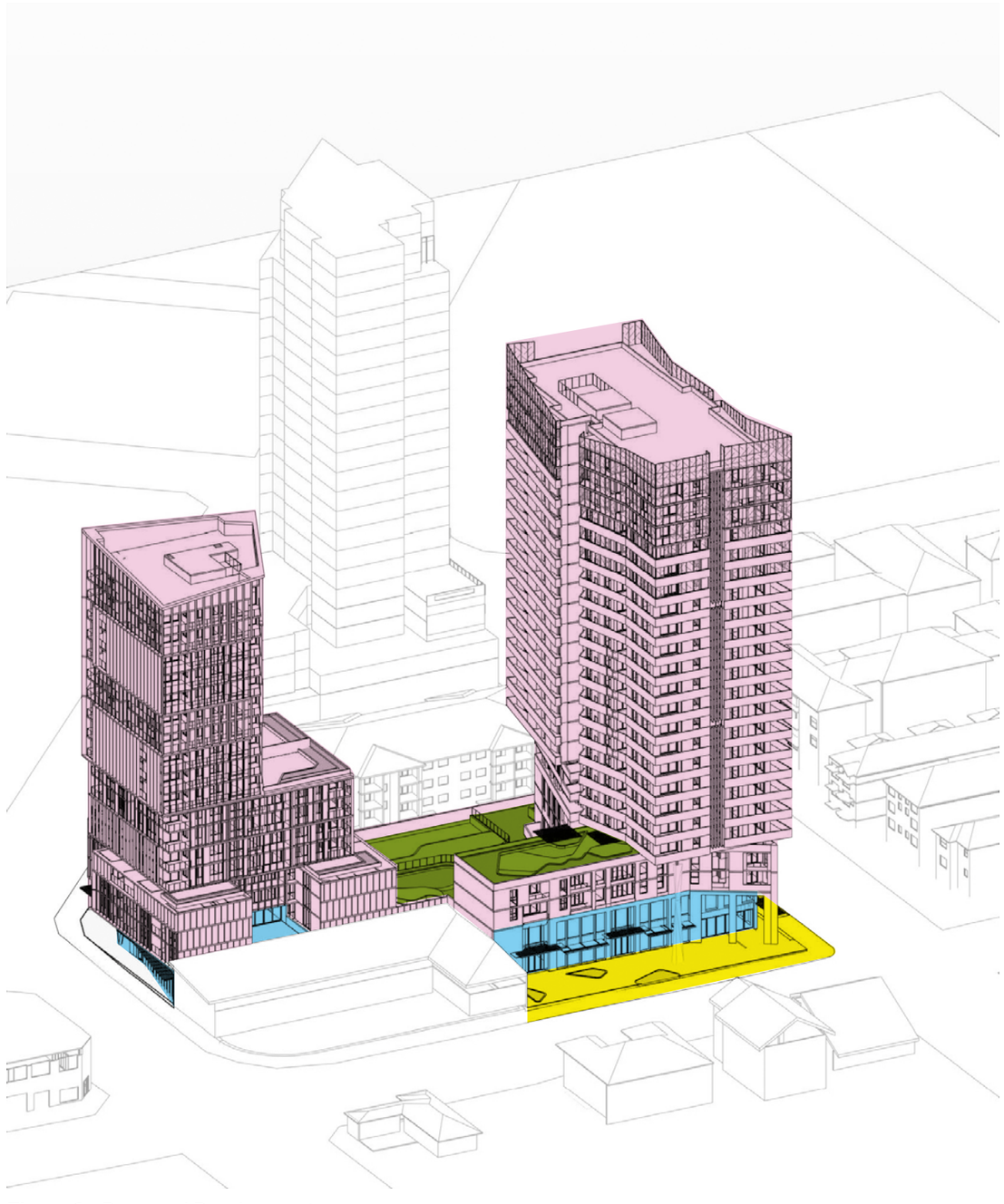


Figure 1 Proposed Development

1.0 INTRODUCTION

PURPOSE OF THIS REPORT

This document has been prepared on behalf of Il Capitano to accompany the development application (DA) for the proposed mixed-use redevelopment at Memorial Avenue, Liverpool.

This report considers the outcomes of the proposed scheme in the context of strategic planning directions, the future character of the area and the site's contextual constraints and opportunities.

This urban design review describes the site contextually, provides directions and principles for the design in accordance with its location and Liverpool City's vision for the city centre. It investigates the implications for adjoining sites and the potential impact of the development as well as identifying the benefits of the scheme. This report is structured as follows:

CONTENTS

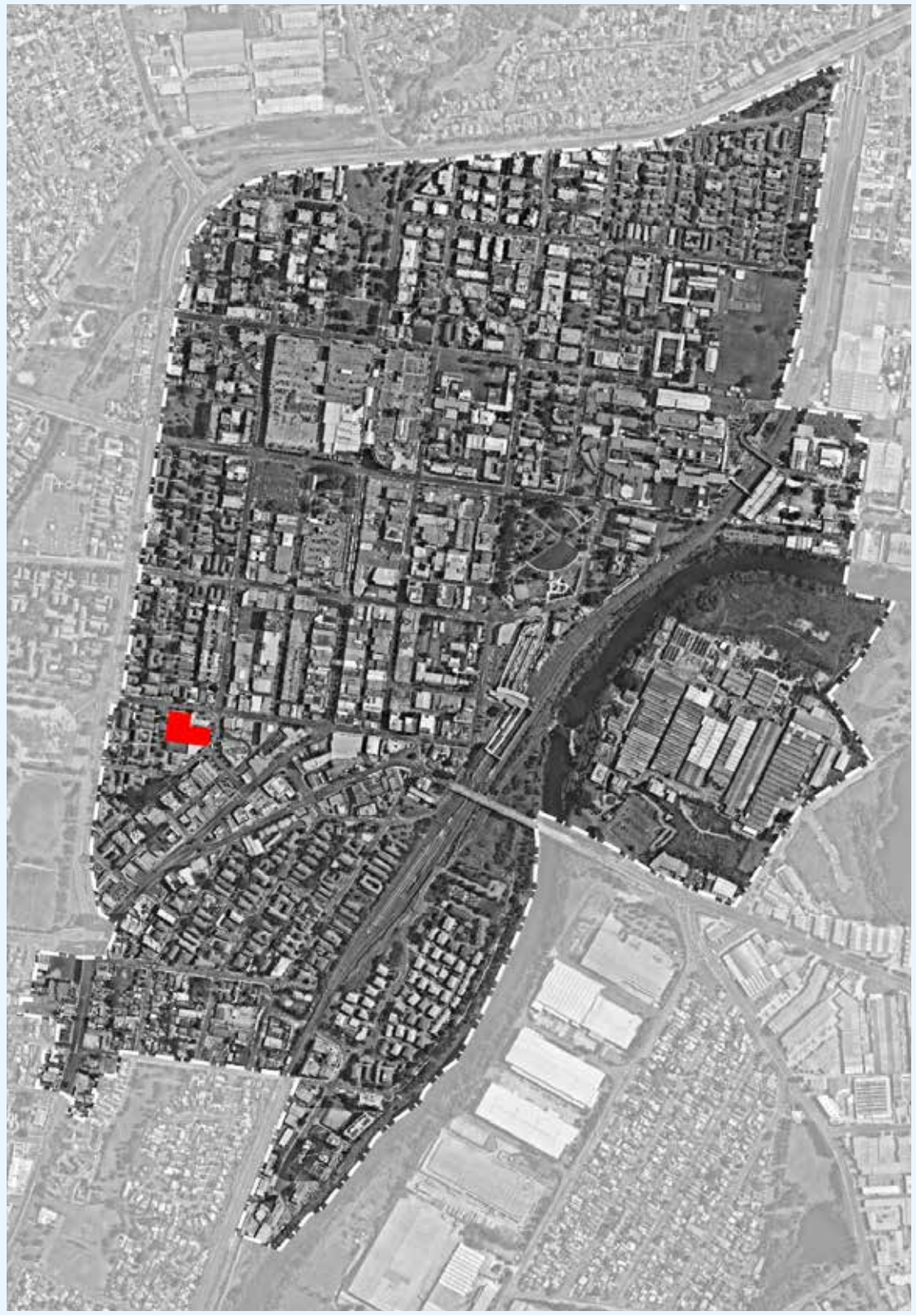


Figure 2 Site Location

ABOUT THE SITE

Local Context

The site is located at the south-western gateway of the Liverpool City Centre within an urban block bounded by Castlereagh Street, Memorial Avenue and Bathurst Street. The site has frontages on these three streets and is situated within an emerging precinct characterised by newly constructed mixed-use, high-density residential towers with commercial podium/ground-floor uses.

Key destinations located within an 800m or 10 minute walking catchment of the site includes:

- Liverpool train station.
- Retail, cafe and services located at Liverpool Westfield, Eat Street on Terminus Street and the revitalised promenade on Macquarie Mall.
- Significant areas of public open space such as the regional waterway of the Georges River to the east, Woodward Park and Brickmakers Creek to the west and the revitalised Bigge Park to the north-east.
- Community facilities including the Whitlam Leisure Centre, The Civic Precinct, Inspire Community Youth Centre new library, and future civic public space.

Site Description

The subject site is situated within the southern portion of Liverpool City Centre within the Liverpool Local Government Area (LGA). The total site area is 4,333m² and is legally described below:

Lot and DP	Address
Lot 10 & 11 / DP7541	86 Castlereagh Street
Lot 9 / DP7541	90 Castlereagh Street
Lot 8 / DP7541	92 Castlereagh Street
Lot 7 / DP7541	94 Castlereagh Street
Lot 4 / DP800326	77 Bathurst Street
SP38492	79 Bathurst Street

The site has three frontages comprising a 45m primary street frontage to Memorial Avenue on the northern boundary, a 60m secondary frontage to Castlereagh Street on the western boundary and a 37m secondary frontage to Bathurst Street to the east.

The subject site currently accommodates a two-storey restaurant fronting Bathurst Street and service station fronting Memorial Avenue. A large area of private surface parking for the restaurant occupies the rest of the site in between the two buildings. Key site considerations include:

Key Findings:

- The site is generally flat with minimal level change;
- The site has good northern orientation and frontage to Memorial Avenue and is well positioned to optimise solar access and cooling breezes.
- Vehicle access to the subject site could be facilitated on the southern boundary from Castlereagh Street providing further building separation from existing residential building;

- Some soil contamination is present at the service station site however the soil contamination does not appear widespread.
- Key interfaces immediately adjacent to the site:
  - an older style single-storey shop building with surface parking fronting the corner of Memorial Avenue and Bathurst Street;
  - a two storey commercial building with zero front and side setbacks to the south-east of the site on 3-5 Norfolk Street.
  - A three storey residential flat building (RFB) with habitable windows facing to the site on the south-western boundary on 96-98 Castlereagh Street. It should be noted that this building is not consistent with the Apartment Design Guide (ADG) separation requirements.
  - An 80m residential development on 7-13 Norfolk Street has been approved and proposes a 6m driveway from their northern boundary.
- Memorial Avenue is identified as "high pedestrian priority route" in Liverpool City Centre DCP.
- A bus stop is 50m to the west of the site on Memorial Avenue, connecting residents to Liverpool Station, Parramatta and Casula.
- Driveways front Memorial Avenue at the service station and shops along Memorial Avenue and Bathurst Street
- Liverpool City Centre DCP has identified no additional vehicular entries permitted along the streets identified in Figure 2. Vehicle access for future development on the site should be compatible with pedestrian movements and reduce the impact on the public domain.

The site is zoned as B4 mixed-use with an 80m maximum height of building limit and an FSR of 2.5:1. In accordance with the LEP Clause 4.4, the maximum FSR for the site is 6:1 given the above controls and the following criteria: a large amalgated site within the city-centre with an area greater than 2500m².

LEGEND

- Site area
- Residential footprint
- Commercial / retail footprint
- Mixed uses footprint
- Potential contamination area
- Existing vehicle access
- Proposed vehicle access
- Additional vehicular entries not permitted - DCP
- Existing fences
- Winter sunrise and sunset
- Summer sunrise and sunset

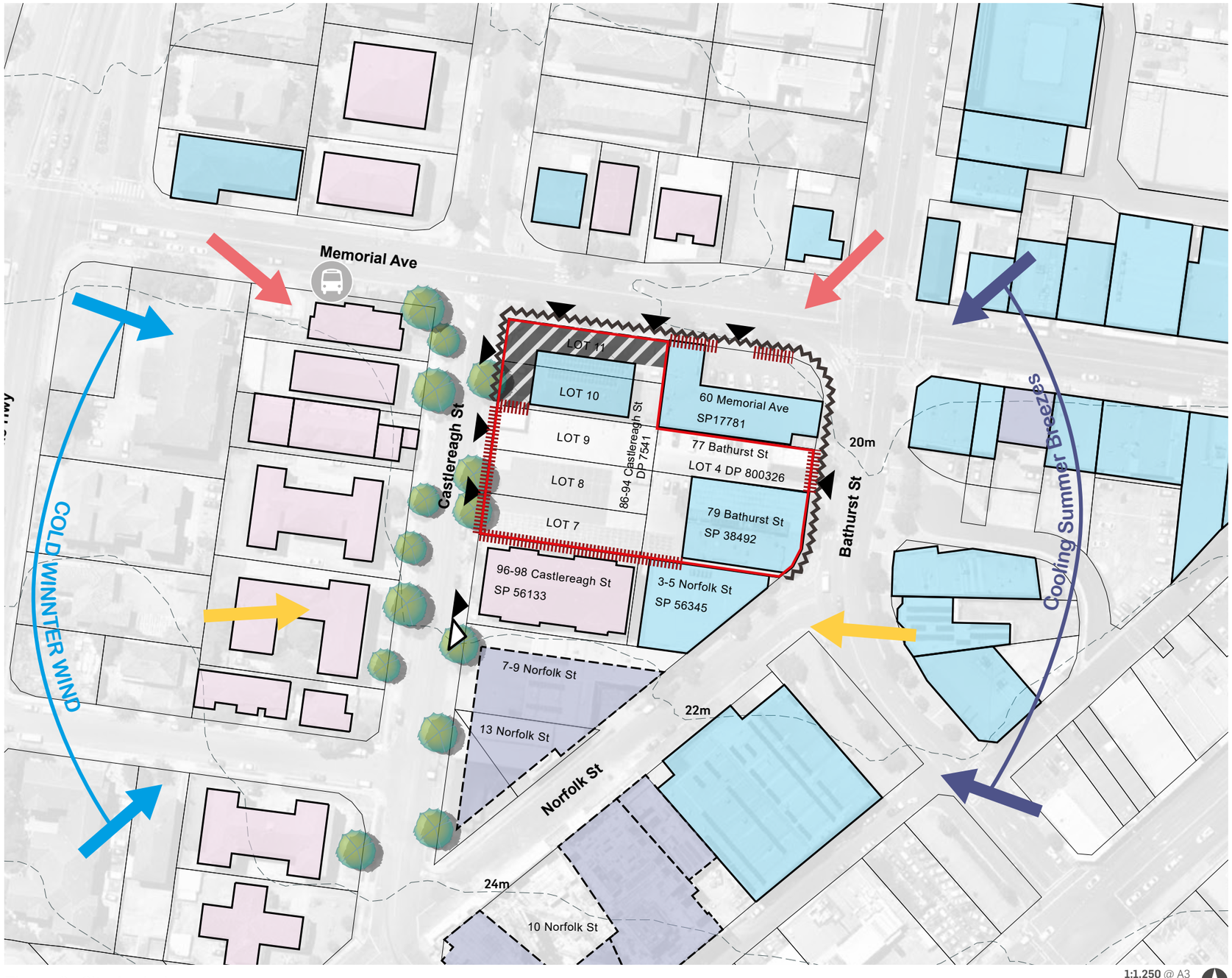
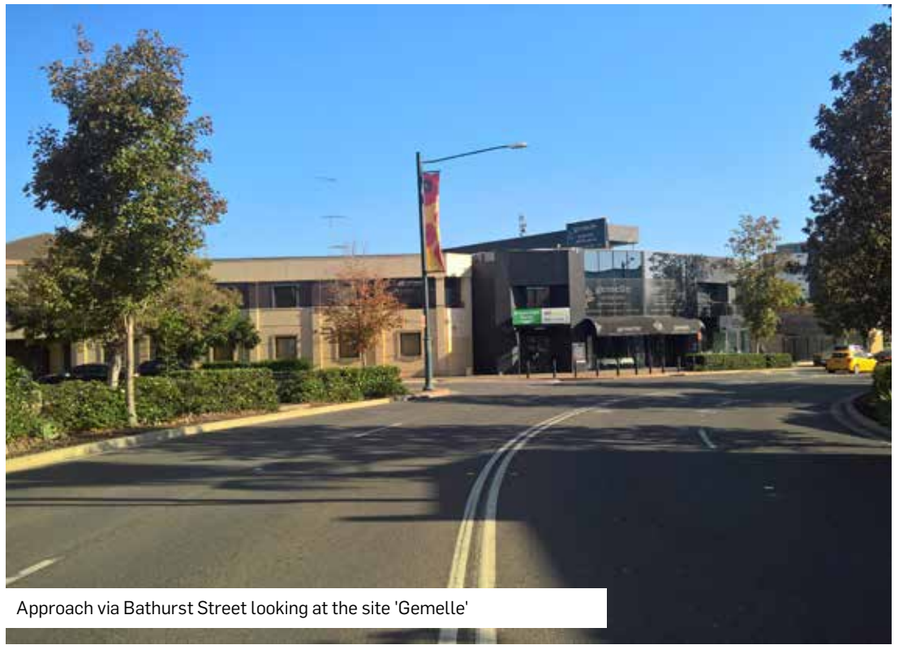


Figure 3 Site Analysis

SITE PHOTOS

Approach from Bathurst Street

- Bathurst Street is a busy, vehicular oriented street and is a primary route out of and into the city centre from:
  - the Hume Highway via Macquarie Street; and
  - Moorebank industrial and employment area via Newbridge Road and Terminus Street.
- The site is viewed prominently at the round on Bathurst Street and Norfolk Street which defines the zero perimeter of the urban block;
- Bathurst Street is typically commercial in its streetscape character. Given the busy nature of this portion of the street, vehicular access from at the this location would be better served on Castlereagh Street.
- A future tower on podium along this perimeter edge along Bathurst Street on the site can further demarcate this 'round' and approach to Memorial Avenue and the city centre beyond



Approach via Bathurst Street looking at the site 'Gemelle'

Bathurst Street approach, south-western side looking north and to the site

Eastern frontage on Bathurst Street and adjacent interface at 3-5 Norfolk Avenue

Norfolk Street looking south-west towards newly constructed mixed-use residential tower on 10 Norfolk Street

Internal site photos

The site is currently accessed from Bathurst Street and Castlereagh Street. It accommodates a two-storey restaurant fronting Bathurst Street and a service station fronting Memorial Avenue. A large area of private surface parking for the restaurant occupies the majority of the site. Other site observations include:

- The site is controlled and secured via high fences and gates.
- Surface car parking dominates this large site and given its redevelopment potential and built form controls, is currently under-utilised.
- Consideration of the interfaces adjacent to the site include:
  - an older-style ,single-storey brick building with surface parking fronting the corner of Memorial Avenue and Bathurst Street;
  - a two storey commercial building with zero front and side setbacks to the south-east of the site on 3-5 Norfolk Street.
  - A three storey residential flat building (RFB) with habitable windows facing to the site on the south-western boundary on 96-98 Castlereagh Street.

Castlereagh Street

- Predominantly older-style, brick residential flats buildings.
- A characteristically medium-high density residential street that transitions from the mixed-use precinct to the east.
- Given its minimal traffic issues, access and servicing from Castlereagh Street would be more suitable for the proposal in comparison with Memorial Avenue and Bathurst Street.
- Opportunity to build on existing mature canopy of street trees.
- Future character is identified to become a R4 high-density neighbourhood on the western side of Castlereagh Street.

Castlereagh Street looking south-west towards older-style RFBs

Castlereagh Street street trees looking north-west along western boundary of site

Memorial Avenue

- An important east-west spine connecting the site to the Liverpool Train Station and Georges Rive to the east, and, Woodward Park, the Whitlam Leisure Centre and Brickmakers Creek to the west.
- Extensive sun exposure and minimal street planting and shade along the south side of this avenue with the exception of recently planted street trees fronting the block.
- Opportunity to provide additional line of trees and deep soil planting within the site to provide pedestrian comfort, amenity and minimise heat island effect.
- Currently the frontage of Memorial Avenue along the site and 60-76 Memorial Avenue is dominated by vehicles for access and car-parking.
- The streetscape character of Memorial Avenue transitions from the east's commercially focused centre up to Bathurst Street to the mixed-use residential blocks from Bathurst westwards lowering to medium density residential and parklands towards Woodward Park.

View of the site and 60-76 Memorial Avenue in the foreground from the north-east intersection of Bathurst Street and Memorial Avenue

Memorial Avenue (north side) looking at the site on 86 Castlereagh Street and looking west beyond.

Figure 4 Castlereagh Street looking south toward adjacent apartments/ single dwelling

Key Findings:

- The site is set within Liverpool CBD's southern mixed-use, gateway precinct
- Emerging mixed-use and high density developments comprise tower forms to the south on Norfolk Street.
- An approved DA comprising a 19 storey tower(Tower A) & a 31 storey tower (Tower B) is proposed on 10 Norfolk Street.

The emerging character of the south-western gateway to Liverpool CBD

10 Norfolk Street was under construction (DA 454/06) during the site visit in April 2018. Demolition was completed June 2016 with Section 96 modifications for an additional 41 residential apartments, 10 apartments over 2 storeys within Tower A & 31 apartments over 6 storeys within Tower B, reconfiguration of the basement car park to provide additional car parking spaces, amendments to the ground floor access arrangements including provision of new access ramps, internal modifications to approved apartments & common areas within Towers A and B & modifications to the façades of Towers A & B including straightening of walls & adjustment to balconies.

- Construction of a mixed use development comprising a 19 storey tower, Tower A & a 31 storey tower, Tower B, with 297 residential units & retail/commercial areas including a reception lounge & a child care centre of 355sq m.;
- Basement Carparking & Landscaping
- Site Area: 3,487m²
- Proposed Floor Area: 37,480 m²

(Source: Cordell)

Terminus Street approach, with 436-446 Macquarie Street to the left

10 Norfolk Street

Junction of Memorial Avenue and Bathurst Street looking south to the site and the 10 Norfolk Street under construction in the background

Junction of Norfold Street and Castlereagh Street south to 436-446 Macquarie Street in the background

Junction of Memorial Avenue and Bathurst Street looking south with 10 Norfolk Street under construction to the left

2.0 CONTEXTUAL SNAPSHOT

PLANNING CONTEXT

Greater Sydney Regional Plan 2018

- Liverpool is an established and connected centre within the Western Parkland City which is projected to grow to well over 1.5 million by 2056. As part of the metropolitan cluster, Liverpool is part of the Western City deal collaborating with Western Sydney Airport and Badgerys Creek Aerotropolis to deliver a 30-minute city.
- Liverpool is located along city-shaping transport corridor between Greater Parramatta and Campbelltown-Macarthur.
- Liverpool is identified as a critical location for commercial and retail businesses and health, education and other services as the city grows. It will be part of a of university precicnts same as Greater Penrith and Campbelltown-Macarthur in the long term.
- The NSW Government's Decentralisation Program and International Education Strategy will enhance the employment growth and housing demand in Liverpool.

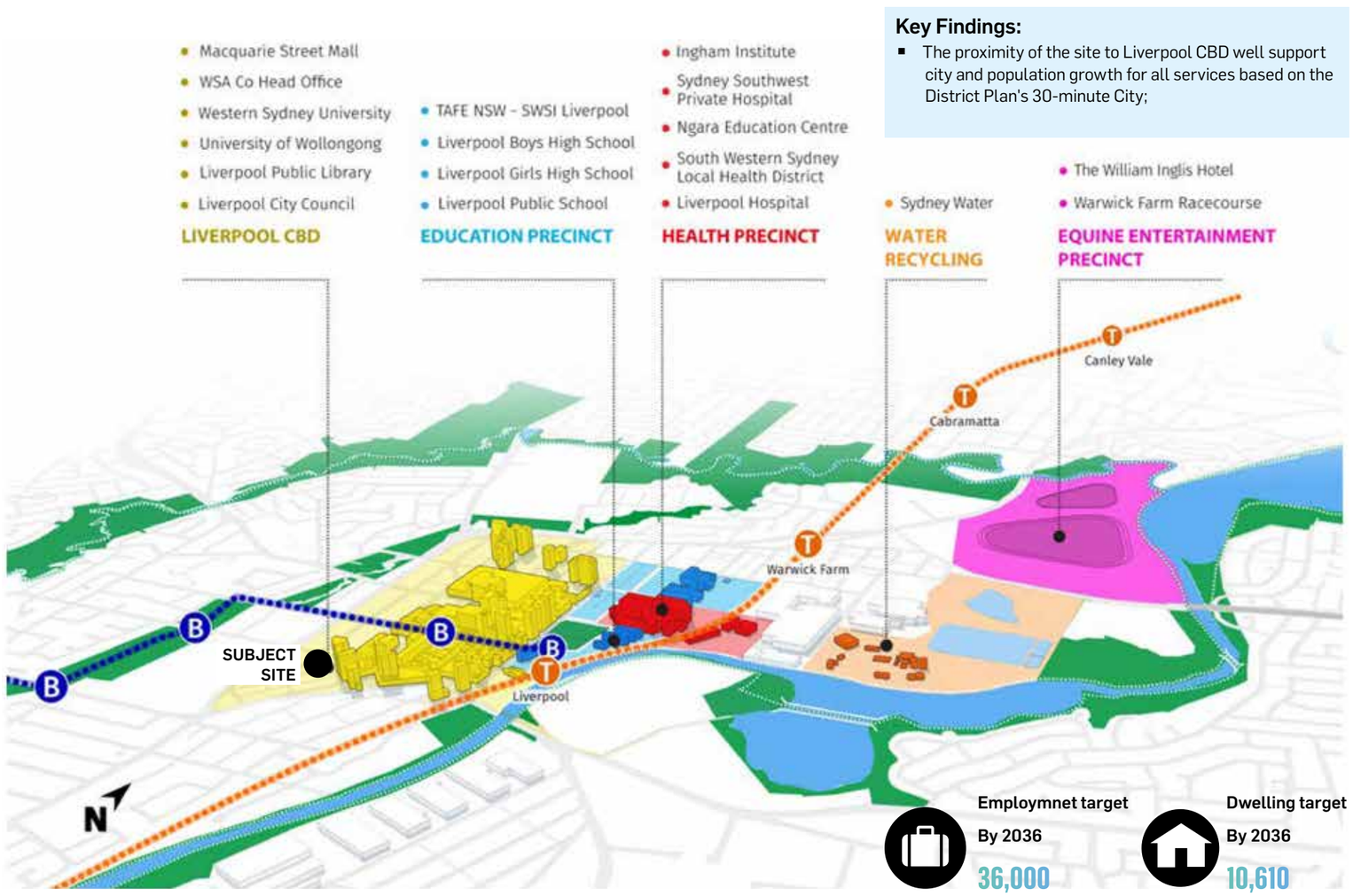
Western City District Plan

In the short to medium term, Liverpool council is investigating opportunities for new homes close to transport and services. To meet a District 20-year strategic housing target setup by Regional Plan, a five-year housing target for Liverpool is to reach 8,250 dwellings.

George River is the main feature within Western District and setting Liverpool as riverside city. A Draft Georges River Master Plan is under consideration which aims to extend the Liverpool City Centre to create better connections to and through the river and to make Liverpool into a true river city.

Future Transport 2056 identified key infrastructure investments in Liverpool are:

- Sydney Metro City & Southwest extension between Bankstown and Liverpool;
- M5 extension between Liverpool and the Outer Sydney Orbital;
- Rapid bus connections between Western Sydney Airport – Badgerys Creek Aerotropolis and Greater Penrith, Liverpool, Blacktown and Campbelltown-Macarthur including new bus links, or the implementation of bus priority on existing and new roads to enable efficient and reliable bus links between the identified centres;
- Proximity to the M7 and M5 motorways and infrastructure upgrades to support Western Sydney Airport



Key Findings:

- The proximity of the site to Liverpool CBD well support city and population growth for all services based on the District Plan's 30-minute City;

Figure 5 Local Context Analysis (*Source: Greater Sydney Region Plan 2018*)

THE SOUTH-WESTERN GATEWAY TO LIVERPOOL CBD

The Liverpool City Centre street layout is defined by the Hoddle Grid comprising of 1.61 km × 0.80 km walkable grid layout similar to the grid at the City of Melbourne. This street layout pattern, block size and hierarchy determines the ease of walking, redevelopment and renewal potential for the city.

The Liverpool City Centre is ringed by rail and key transport routes comprising of:

- A Ring Road along Bathurst Street, Campbell Street, Bigge Street and Pirie Street form the core of the city centre - the retail and commercial heart.
- The Hume Highway and Terminus Street are major arterial carrying the bulk of through-traffic leading to Greater Parramatta, Sydney CBD and the Campbelltown-Macathur region.
- The Hume Highway acts a key approach from Campbelltown and Sydney via the M5, bisected by to the south Hoxton Park Road and Terminus Street. The built form on this key approach is demarcated by tall urban towers, visually marking the entrance to Liverpool.
- The Hume Highway demarcates the north and western boundary of the City Centre
- The South Western Rail Corridor, the Georges River and the Hume Highway defines the physical boundary of the City Centre.
- The rail line consists of four train lines running through Liverpool Station:
  - T2 Inner West & Leppington Line - Between City and Macarthur via Granville;
  - T3 Bankstown Line - Between City and Liverpool via Lidcombe and Bankstown;
  - T5 Cumberland Line - Between Campbelltown and Schofields via Parramatta;
  - South West Rail Link connecting Liverpool and Leppington and potentially extend to Western Sydney Airport at Badgerys Creek

An extension of the Sydney Metro City and Southwest is currently planned connecting Bankstown to Liverpool.

The street layout also provides key pedestrian connections within the core and across the city centre. Memorial Avenue, Elizabeth Drive and Macquarie Street are considered as primary pedestrian routes to enhance the city's permeability.

Key Findings:

- The site is set within the historic and walkable Hoddle Grid
- Key pedestrian connection along Memorial Avenue and the inner city ring road along Bathurst Street.
- The site forms part of the south-western gateway to Liverpool City Centre, demarcated by tall urban towers.
- The site has direct access to the train station and Hume Highway.

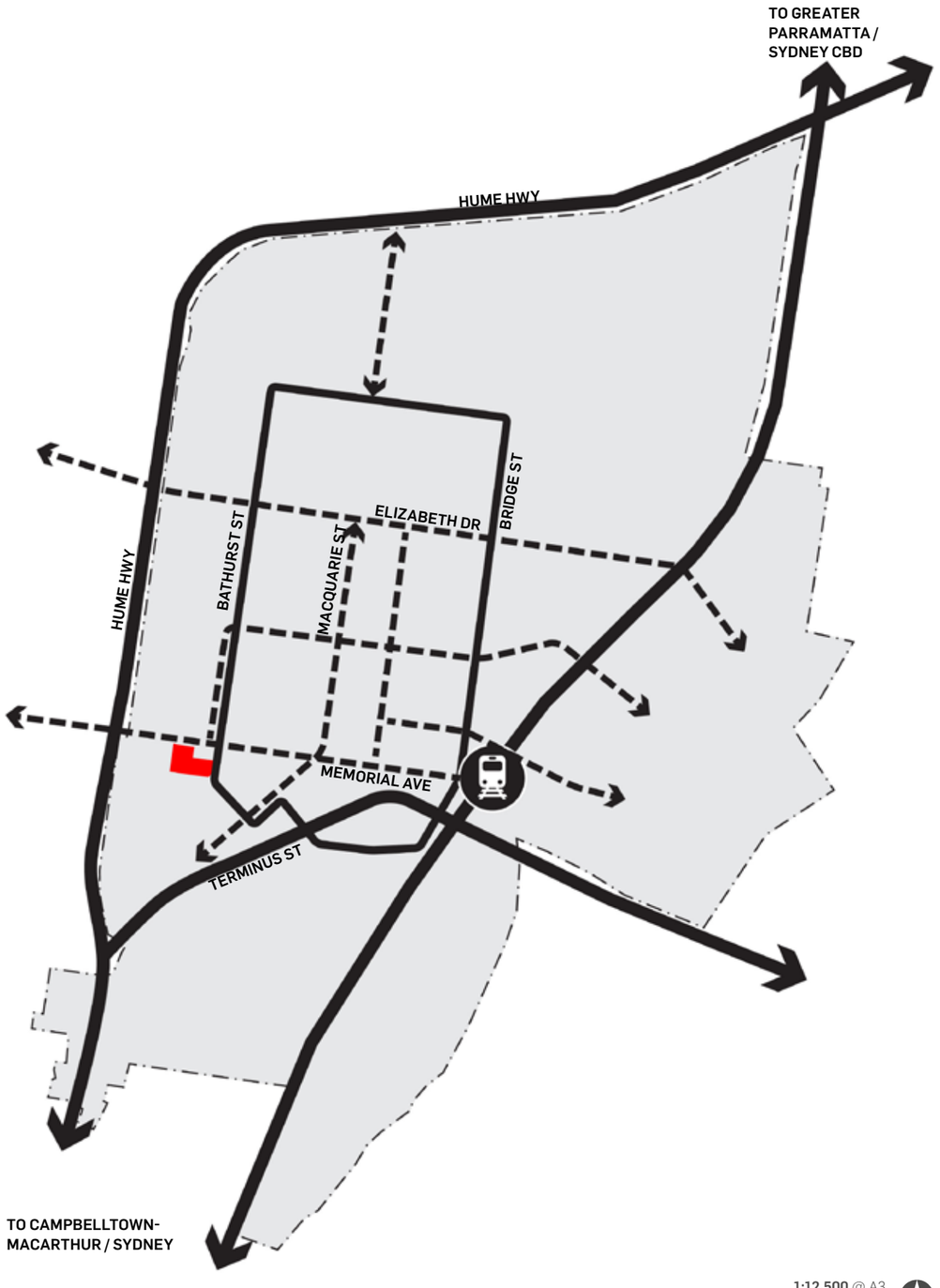


Figure 6 Connectivity analysis

EASY WALKING ACCESS TO NATURAL AMENITY

The site is located at the centre of a walkable catchment to key open spaces (Green Grid) and the Georges River (Blue Grid)

- A large linear parkland to the west of the city centre provides a clear opportunity for a continuous north-south green link.
  - Key open spaces within this green grid include Woodward Park, Hillier Oval, G&M Amalfi Memorial Park, Pearce Park, Barbara Long Park, Collimore Park and Apex Park.
  - Brickmakers Creek traverses along this green corridor.
  - WoodwardPark is identified as a regional recreation centre and is within 400m (5 minutes) walking catchment of the site.
- The Blue Grid of Liverpool is defined by Brickmakers creek to the west and the Georges River to theeast of the rail line and Liverpool City Centre
- The Georges River defines the natural eastern boundary of the City Centre
- East of the Georges River, The Eastbank Precinct (Pirelli Site) is currently used for small scale industry. It is identified as an opportunity to create a continuous urban parkland to Haigh Park / Lake Moore with pedestrian links to the city.
- The train station and river-front are located within walking distance from the site.
- Major pedestrian routes within the city centre are identified along Elizabeth Drive, Moore Street and Memorial Avenue.
  - The site is situated on Memorial Avenue and has direct walking access to Woodward Park (with a future pedestrian bridge over the Hume Highway) to the west and the Georges River and train station to the east.
  - The pedestrian route along Memorial Avenue lacks shade and pedestrian comfort. Between the park nodes on the Memorial Avenue Walk, there are no interstitial areas for landscape or shaded seating.

Key Findings:

- The site is within easy walking distance to regional open space amenities and waterways.
- There is minimal areas for pedestrians to rest or gather under a naturally shaded canopy of trees along Memorial Avenue.
- There is opportunity to provide a comfortable, canopied pedestrian experience along Memorial Avenue linking the Woodward Park, Brickmakers Creek to the Georges River east of the site

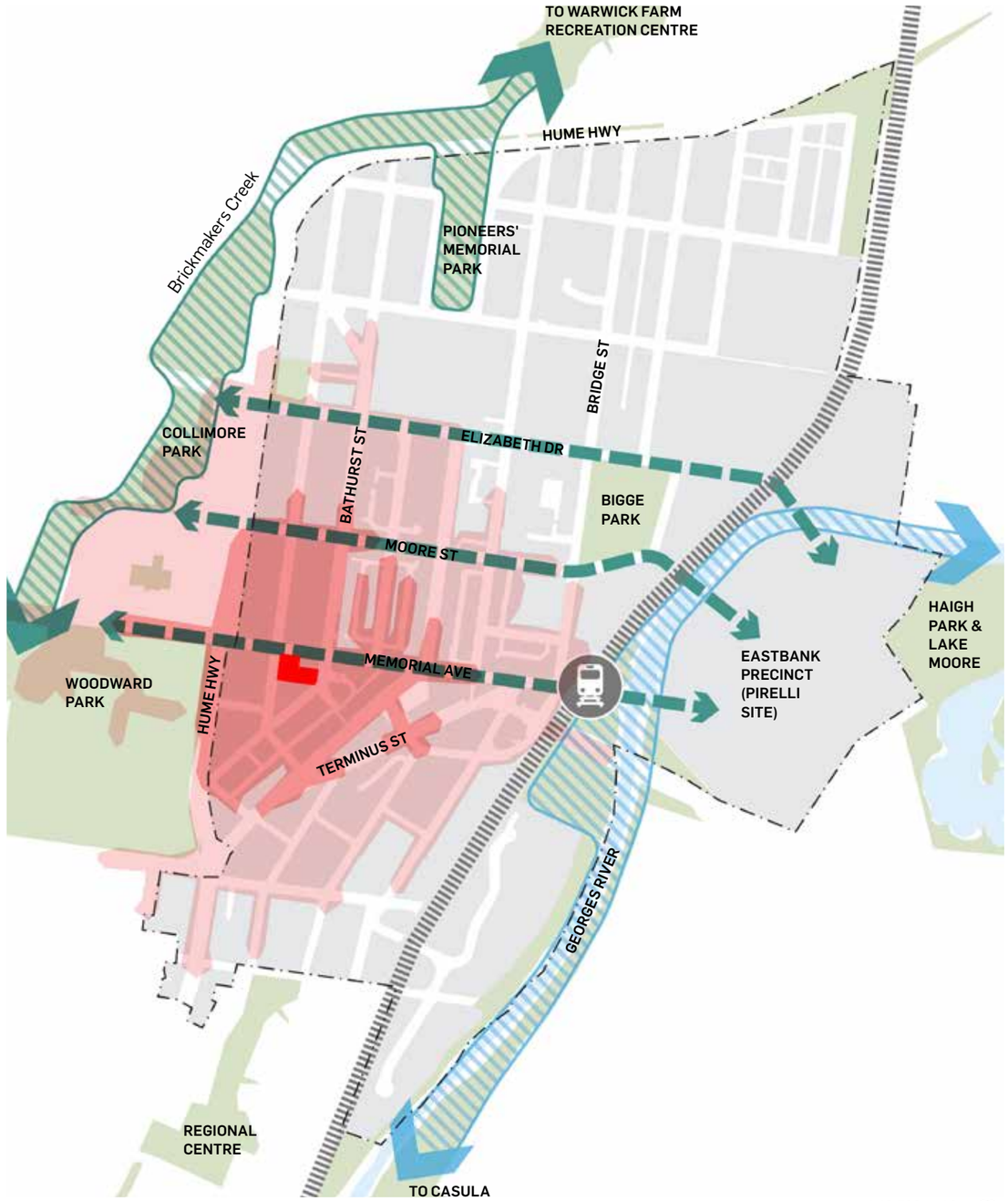


Figure 7 Local natural amenity analysis

AMPLIFY PROXIMITY TO SHOPS, SERVICES & TRANSPORT

Liverpool City Centre is emerging into a vibrant centre with immediate access to education & research hubs, community, retail, commercial, medical and health services.

- Presently access to services, retail, employment is concentrated north of the site, radiating from Westfields and the Health/Education Precinct to the north-east.
- An area between Elizabeth Drive, Bathurst Street and Terminus Street at city core forms a fine-grain services area for pedestrian. The area is mostly within 800m (10 minutes) walking catchment from the subject site.

The southern gateway to Liverpool provides limited access to services and shops whilst accommodating a growing residential catchment with new hig-rise developments already approved or under construction.

- The subject site could accommodate commercial and retail to service this growing residential population south of the City Centre.
- In parallel to this growing population, green infrastructure such as tree planting and an enhanced public domain response will allow for a more comfortable city to walk and live in.

Key Findings:

- The site has the potential for retail services uses to service a large residential catchment south of the main core demarcating the southern gateway redevelopment site.
- The site has potential to extend active street frontage along Memorial Avenue and Bathurst Street as primary and secondary retail frontage;
- Castlereagh Street frontage is a residential interface;
- There is opportunity to provide a comfortable, canopied pedestrian experience along Memorial Avenue linking the Woodward Park, Brickmakers Creek to the Georges River east of the site
- There is opportunity to provide an activated edge within the sites' block to Memorial Avenue and Bathurst Street to optimise the pedestrian experience, passive surveillance and legibility of the site

Figure 8 Local amenity analysis

BROADEN ACTIVE STREET EDGES

This street layout pattern, block size and hierarchy of the Hoddle Grid enables the ease of walking, redevelopment and renewal potential for the city.

- The site is surrounded by a growing residential cathment;
- The site has potential to extend an active street frontage along Memorial Avenue and Bathurst Street as primary and secondary retail frontage;
- Castlereagh Street frontage is identified as a residential interface;
- The DCP identified that Memorial Avenue is to have zero setback to the street, however the urban condition changes from Bathurst Street westwards to a varied setback. This can allow for natural shade provided by street trees in the future redevelopment of this area.
- There is opportunity to provide a comfortable, canopied pedestrian experience along Memorial Avenue linking the Woodward Park, Brickmakers Creek to the Georges River east of the site
- There is opportunity to provide an activated edge within the sites' block to Memorial Avenue and Bathurst Street to optimise the pedestrian experience, passive surveillance and legibility of the site.

Key Findings:

- There is opportunity to optimise the east-west pedestrian link on Memorial Avenue.
- There is opportunity to extend street activation to the western side of Bathurst Street and the southern side of Memorial Avenue

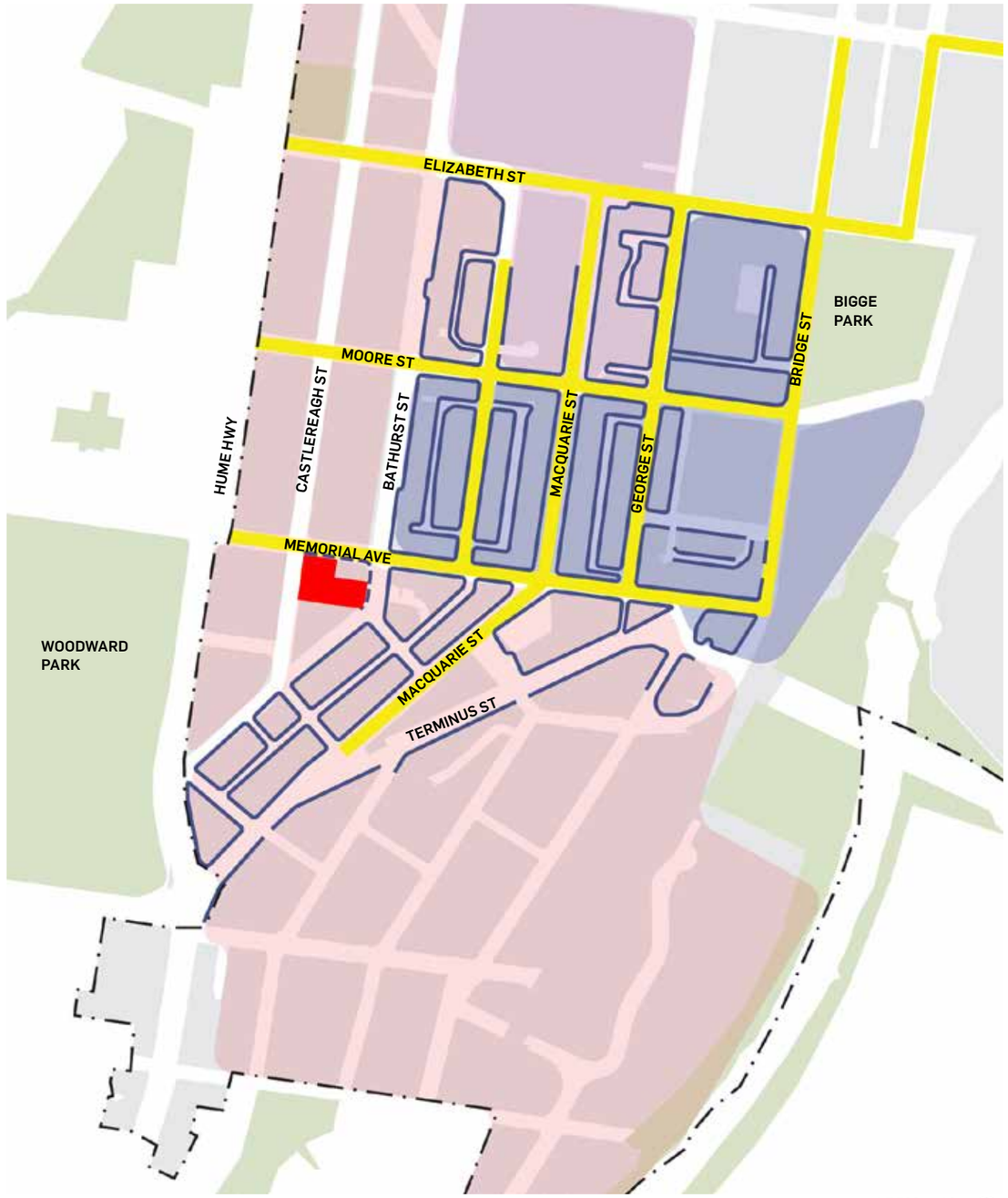


Figure 9 Street character

FUTURE DESIRED CHARACTER

Liverpool City Centre is growing city with many new residential developments occurring on the periphery of the centre, particularly towards the south-western gateway precinct. A number of key sites have been identified within the City Centre for specific attention.

Table 1 has summarised DAs that the council recently received and approved immediate surround the site.

A draft LEP has modified B3 Commercial Core to B4 Mixed Use to encourage multiple uses in the city centre.

	DEVELOPMENT SITES	ZONING	LLEP 2008 HOB (M)	APPROVED / PROPOSED HEIGHT (M)	ADDITIONAL HEIGHT (M)	LLEP 2008 FSR (N:1)	APPROVED / PROPOSED FSR
DA APPROVED							
1	420 Macquarie St	B4	80	100	**20**	6	6.645
2	21 Atkinson Street	R4	24	30.2	**6.2**	1-1.5	
3	7-13 Norfolk Street	B4	80	80	-	6	6.5
4	387 Macquarie Street	B4	80	79.8	-	5.74	5.74
5	25-33 Scott Street	B4	100	43.5	-	5.41	8.41
6	311 Hume Highway	B4	100	99		6	5.77
7	100 Castlereagh Street	B4	80	104.9	**24.9**	6	8.19
DA UNDER ASSESSMENT							
8	52 Scott Street	B4	100	104.4	**4.4**	10	10
9	203-209 Northumberland Street & 64 Bathurst Street	B4	100	87	-	8	6.8
10	149-151 Terminus Street	B4	80	96.4	**16.4**	6	9.89
11	1-5 Speed Street	B4	80	98.9	**18.9**	4.58	10
12	277 Bigge Street & 11-23 Scott Street	B4	100	97	-	10	9.94

Table 1 Recent development summary

Key Findings:

- Recent mixed-use developments on 7-13 Norfolk Street and 100 Castlereagh Street illustrates that a tower typology can be easily delivered on large sites under single ownership.
- Surrounding sites and adjacent neighbours are limited in the ability to redevelop or amalgamate given its ownership constraints (strata) and the size of these blocks such as:
- Sites on the western side of Castlereagh Street are predominantly strata-titled and older style residential buildings.
- Sites to the south are emerging taller tower developments
- The subject site is under single ownership with a large under-utilised parcel comprising 4,333m².

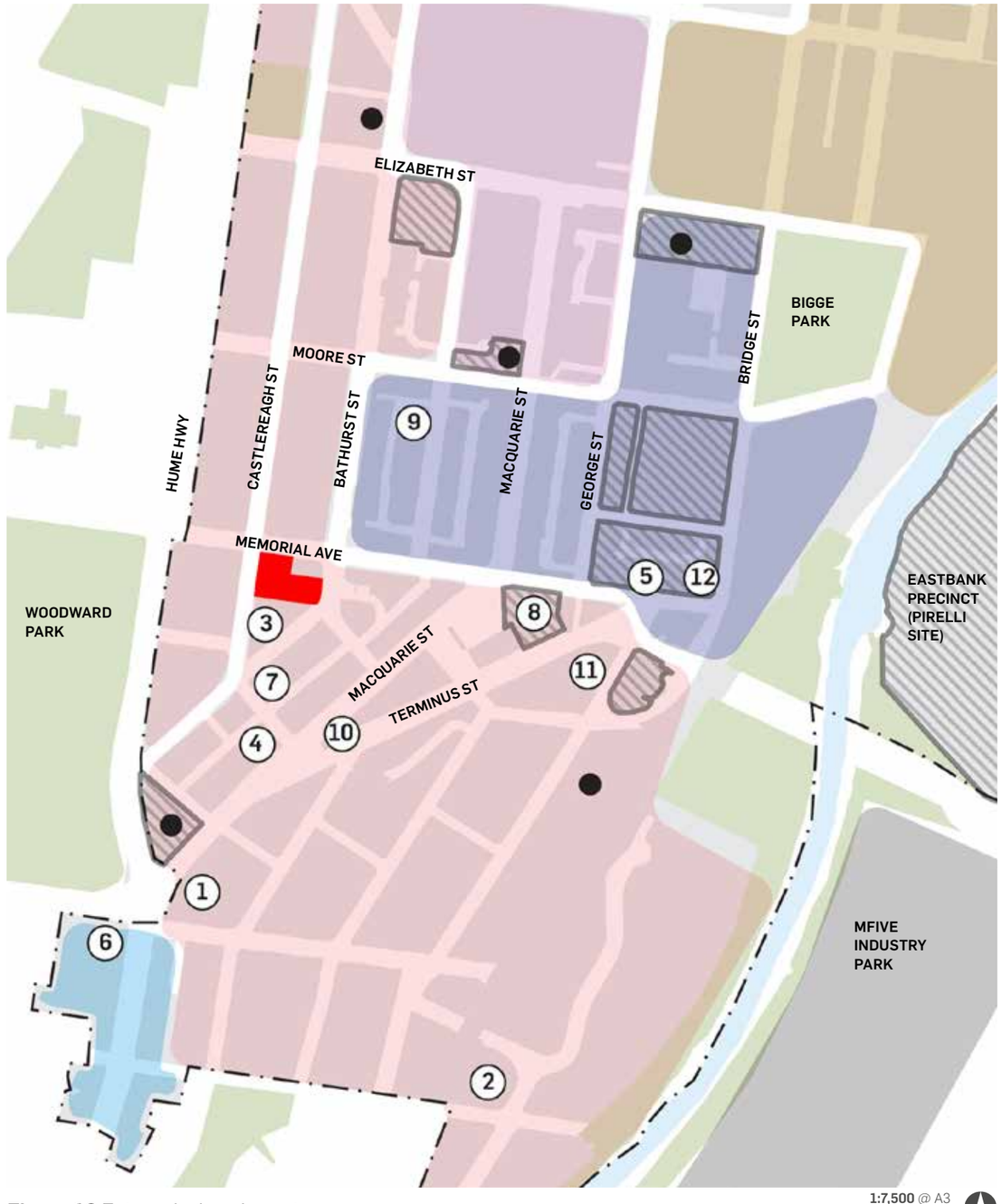


Figure 10 Future design character

MEMORIAL AVENUE REVIEW OF SETBACKS

The site has frontages to Castlereagh Street, Memorial Avenue and Bathurst Street. It is noted that in accordance with the DCP, Memorial Avenue is to have a zero setback from the boundary. Currently, the setbacks along Memorial Avenue is varies such as on 13 Memorial Avenue and from the intersection of Bathurst Street westwards - where it varies from 2-12 meter setbacks.

Memorial Avenue is identified as a pedestrian priority route which connects pedestrians from significant 'green and blue grid' amenities of the Georges River to the east of the site to Woodward Park and Brickmakers Creek to the west. Between these nodes, there is little infrastructure to provide pedestrians natural shade, amenity or seating.

A retained setback of 10m on the frontage of Memorial Avenue maximises the opportunity to revitalise this edge from a car-oriented threshold (servicing the existing petrol station and small shopfronts) to a vibrant public domain plaza with shaded trees and seating areas. This establishes a change in the condition of Memorial Avenue (at the intersection of Bathurst Street) from a city/commercial street block to a green boulevard that leads to Woodward Park and Brickmakers Creek.

Key Findings:

- Memorial Avenue has two street conditions:
  - West of Bathurst Street has various setbacks ranging from 3-12m, which create opportunities for public domain enhancements to provide pedestrian comfort along this important east-west spine.
  - East of Bathurst Street has a single 0m setback, which create a consistent street demarcating retail street frontage;
- A 10m setback on Memorial Avenue reflects the current condition of the site and could provide improved landscape and public domain outcomes.

Figure 11 Memorial Avenue street setback pattern

1 **13 Memorial Ave**

Commercial strata building with various setbacks

2 **60-76 Memorial Avenue**

Commercial strata building with 12m setback

3 **61B - 65 Memorial Ave**

Residential strata building with 6m setback

4 **69 Memorial Ave**

Residential strata building with 3m setback

5 **13 Memorial Ave**

Residential strata building with 4m setback

6 **13 Memorial Ave**

Residential strata building with 10m setback

3.0 DEVELOPMENT CONTROLS

EXISTING BUILT FORM CONTROLS

LIVERPOOL LEP 2008

The site is zoned as B4 Mixed uses with an 80m maximum height of building limit and an FSR of 2.5:1

- Under LEP map Clause 4.4, the maximum FSR for the site is 6:1 because the site:
  - is within the Liverpool City Centre;
  - is zoned B4l
  - has a maximum height with limit of 80m (Column 3); and
  - is large amalgamated site greater than 2500m² in area.

LIVERPOOL DCP 2008

To encourage high quality design for new development, Liverpool DCP has outlined built form controls in the city centre for a desirable setting.

A maximised future built form according to the DCP control has been identified in Figure 17. Development assumptions and built form controls for a maximum built form are:

Street alignment

- 0m setback fronting Memorial Avenue and Bathurst Street;
- 2.5m setback fronting Castlereagh Street;
- Street Frontage Height (SFH) of 16m-26m (4-6 storeys);
- 6m streets setback for upper levels above SFH;

Building uses

- Podium levels (SFH) - Commercial / mixed uses;
- Upper levels (above SFH) - Residential (regarless habitable facade and ADG separation)

Built form control

- Maximum residential floorplate size - 700m² GFA
- Maximum building depth - 24m;
- GFA efficiency of floorplate per level is equal to 70%;

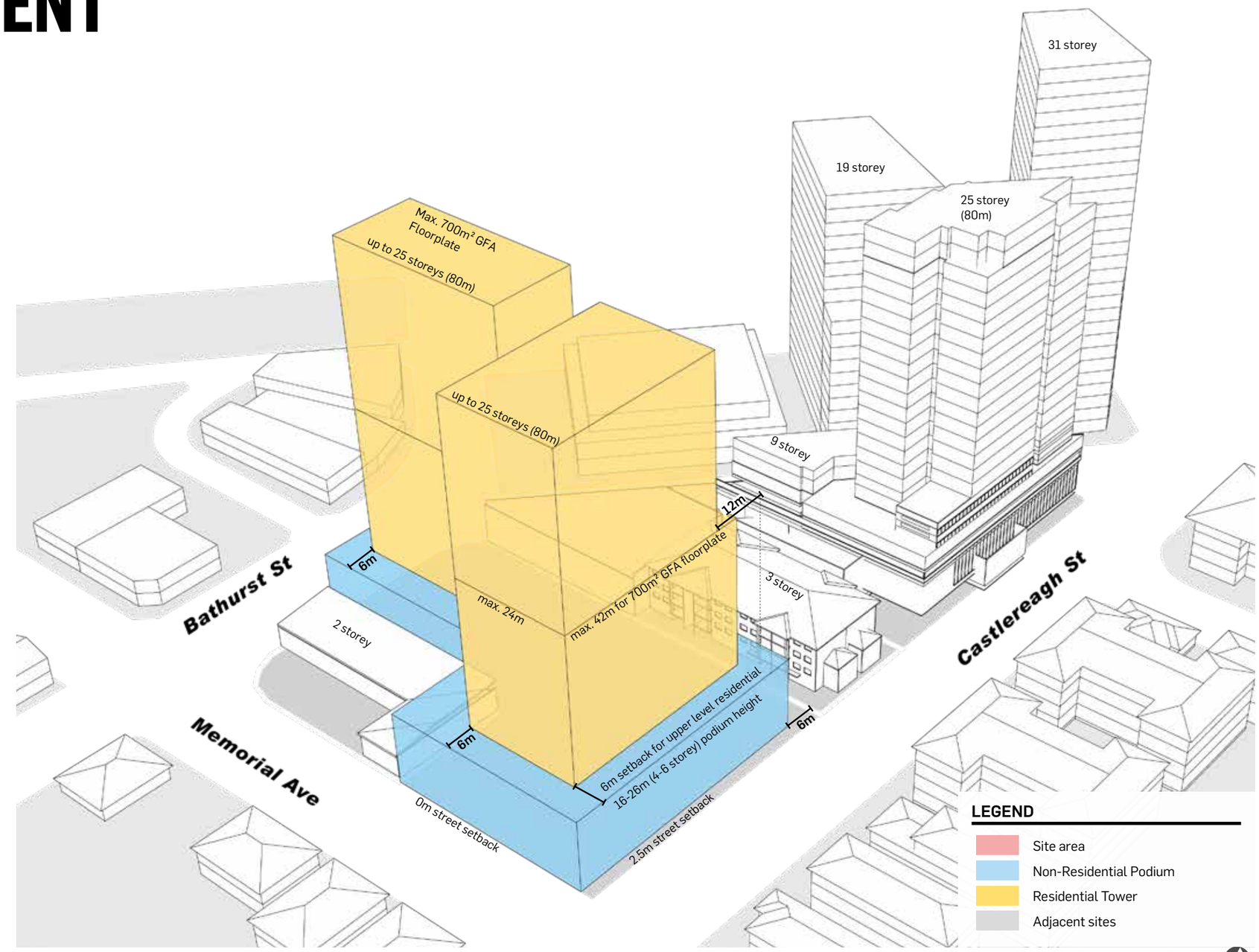


Figure 12 DCP built form control analysis

DEVELOPMENT ON ADJACENT SITES

There are two adjacent sites identified with future development potential and they are:

- 60-76 Memorial Avenue
- 3-5 Norfolk Street

The two sites are zoned as B4 Mixed Uses within Liverpool City Centre with 80m height limit. Maximum FSR is calculated in accordance with LEP map and Clause 4.4.

A maximised potential development built form scenario on these two sites has been investigated and summarised as **Table 2**. Development assumptions and built form controls for a maximum built form has been identified in **Figure 18**.

Table 2 Development potential on adjacent sites

ADDRESS	SITE AREA	MAX. FSR	POTENTIAL FLOORPLATE	MAX. HEIGHT OF BUILDING
60-76 Memorial Avenue	1,047m²	2.61	*785m²	4-storeys^
3-5 Norfolk Street	680m²	2.50	*510m²	4 storeys^

Assumptions

- Non-residential development to maximise potential building floorplate;
- 0m front and side setbacks consistent with the setback controls identified in DCP;
- Assumes basement car parking - which may require access from subject site;
- 6m rear setback for potential built form at 3-5 Norfolk Street;and
- *GFA efficiency of a floor plate per level is equal to 75%.
- ^5-storeys to allow for lift-overun or any rooftop articulation

Key Findings:

- Adjacent sites are limited in the ability to apply for FSR bonuses, given their minimal land size;
- Adjacent sites are additionally constrained due to its strata title involving multiple owners.
- Maximum development on adjacent sites based on the allowable FSR is already achieved at 3 storeys based on 100% site footprint and DCP controls. Therefore the development of the subject site does not preclude future development of the adjacent sites.
- The adjacent sites' size, depth and FSR limits a tower form that can accomodate a feasible floor plate in addition to anybuilding separation requirements.
- The FSR for the adjacent sites (on its own) do not allow for tower form development
- Given the adjacent sites maximum development capability at 3-4 storeys, a podium form incorporating this can be accommodated within the super-block that comprises a 4-5 storey podium height datum.

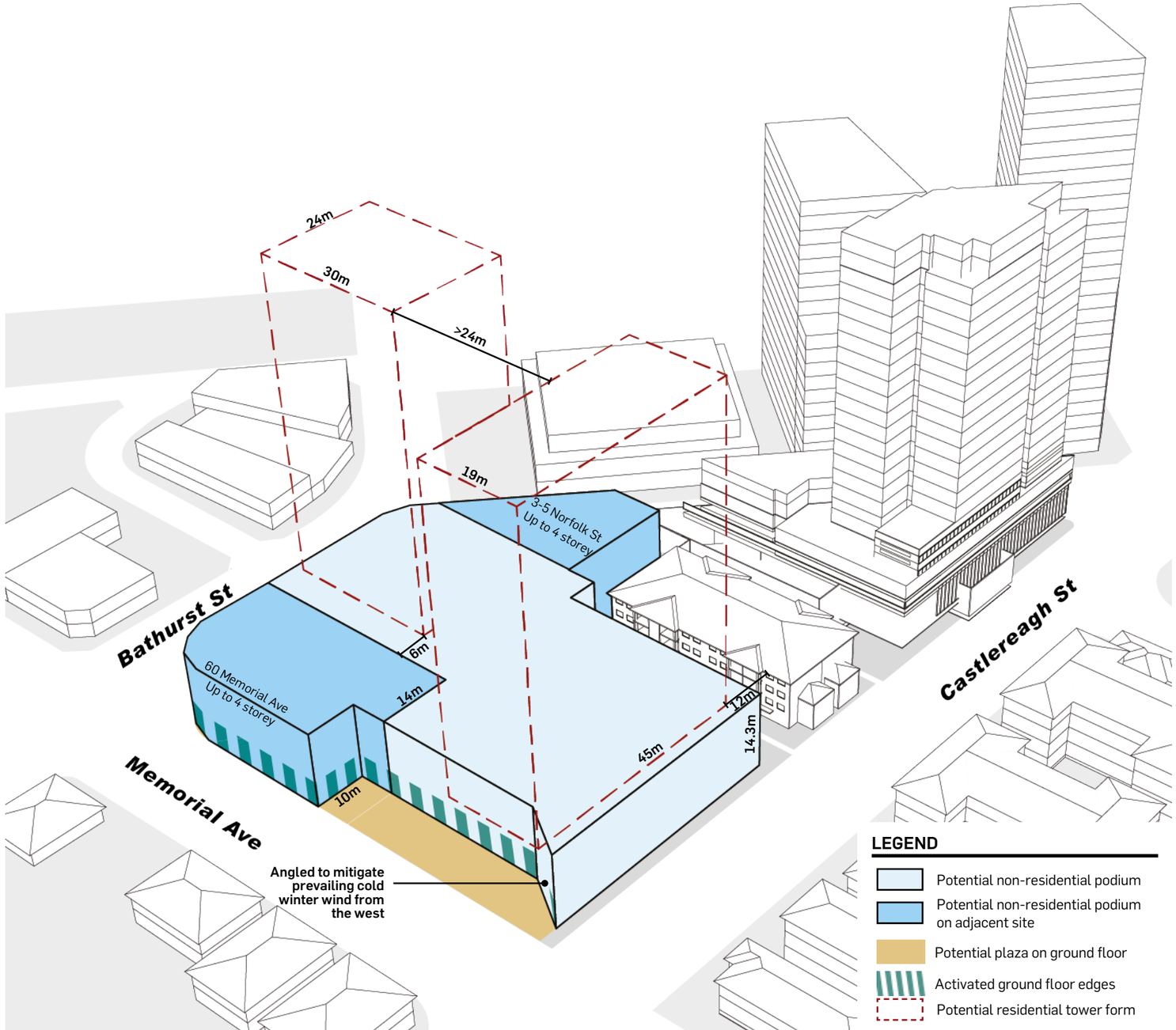
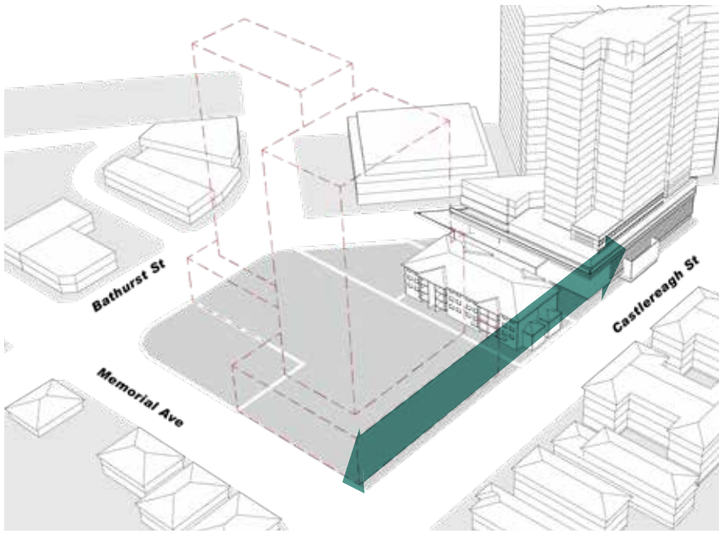


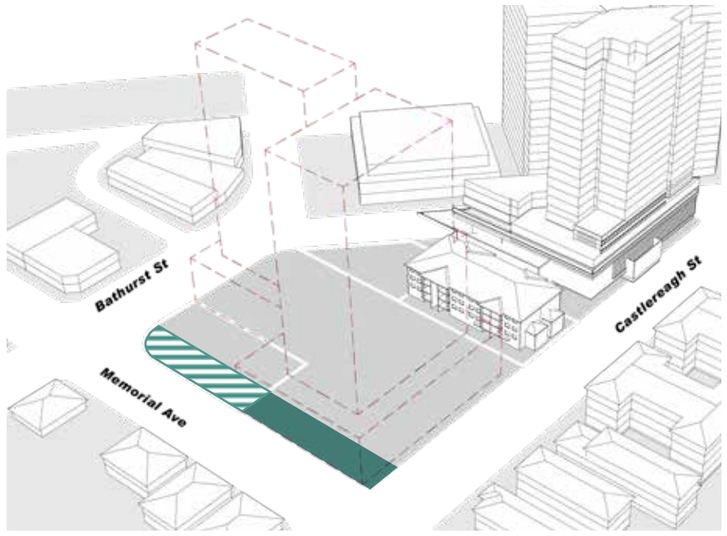
Figure 13 Consideration of development potential for adjacent sites

4.0 THE PROPOSAL

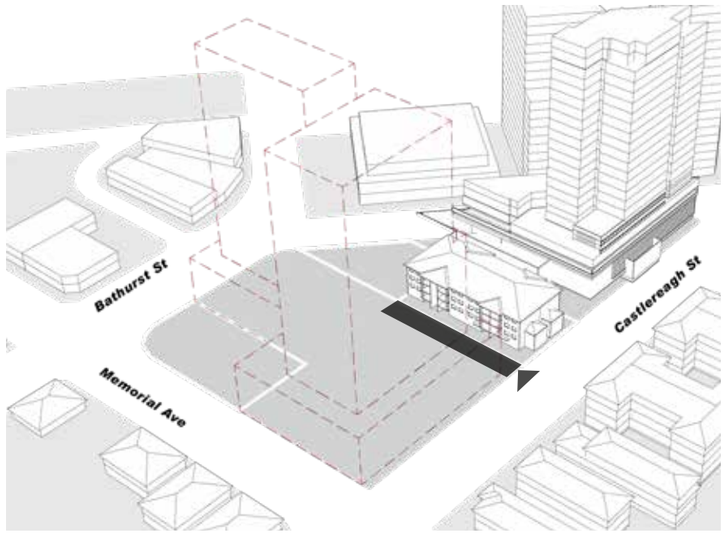
DESIGN PRINCIPLES



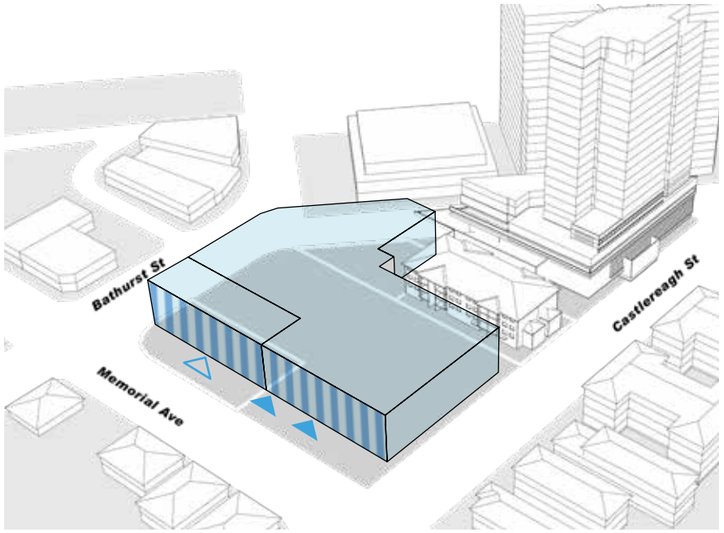
ENSURE A CONSISTENT STREET ALIGNMENT TO CASTLEREAGH STREET



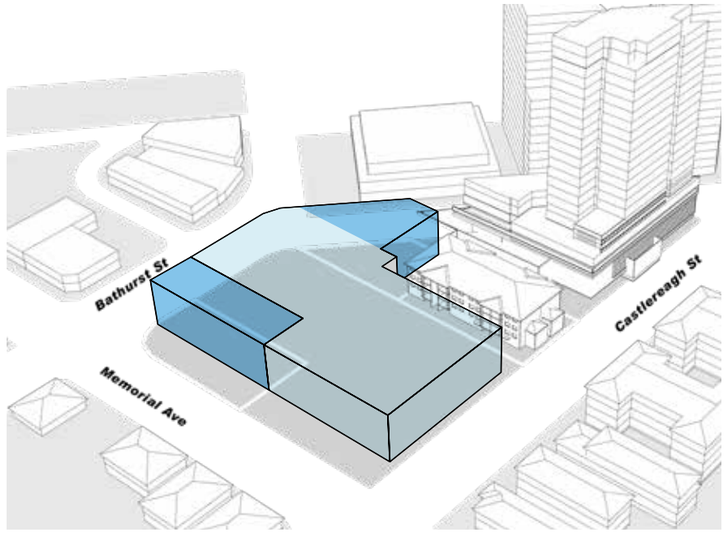
MAXIMISE AMENITY TO THE NORTH



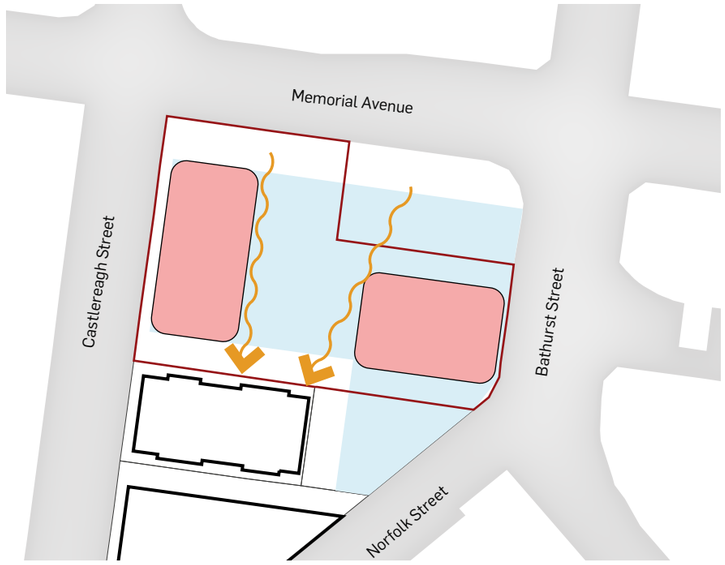
ENSURE ADEQUATE SETBACK TO THE SOUTH-WESTERN BOUNDARY



PROVIDE A CONSISTENT PODIUM HEIGHT AND EDGE INTERFACE TO BATHURST STREET AND MEMORIAL AVENUE



ENSURE MAXIMUM DEVELOPMENT POTENTIAL TO ADJACENT SITES IS READILY ACHIEVED WITHIN THE PODIUM DATUM



MINIMISE IMPACTS TO SOUTHERN NEIGHBOURHOODS

THE PROPOSAL

The key built form elements for the site comprise

- A defined podium height datum of 4 storeys with:
  - 0m street wall along Bathurst Street consistent with the DCP and the vehicular function of Bathurst Street.
  - A podium setback of 10m on Memorial Avenue to optimise solar access to the street level plaza.
  - A setback of 2.5m on Castlereagh Street consistent with the DCP and street character.
  - Articulation on the corner of Castlereagh Street and Memorial Avenue to provide protection from cold westerly winds.
  - Vehicular access and servicing is located on Castlereagh Street along the southern boundary on the ground floor with landscape planting above to provide amenity and separation from 96-98 Castlereagh Street.
  - A setback of 12m above the ground floor to the southern boundary to minimise amenity impacts to the residential apartment at 96-98 Castlereigh Street.
  - Three basement levels comprising one level of retail parking on B1 and two levels of residential - visitors parking on B2-3
- A west tower 23 storeys to the maximum 80m HOB:
  - An overhang at the corner of Castlereagh and Memorial Avenue to mark the corner and provide visual interest.
  - A setback at podium level from the line of the podium edge to provide articulation and a shadow-line
- An east tower 17 storeys:
  - 0m setback from Bathurst Street
  - 6.4m setback from the northern boundary and 6.1m setback from the southern boundary given the likely 4-6 storey future height on adjacent sites.
  - A 2.5m setback for residential storey 5-8 setback from Bathurst Street to define the streetscape edge
  - A stepped-edge tower for upper levels to provide additional setbacks, a landscape terrace and visually dynamic skyline that maximises solar access to southern neighbours.

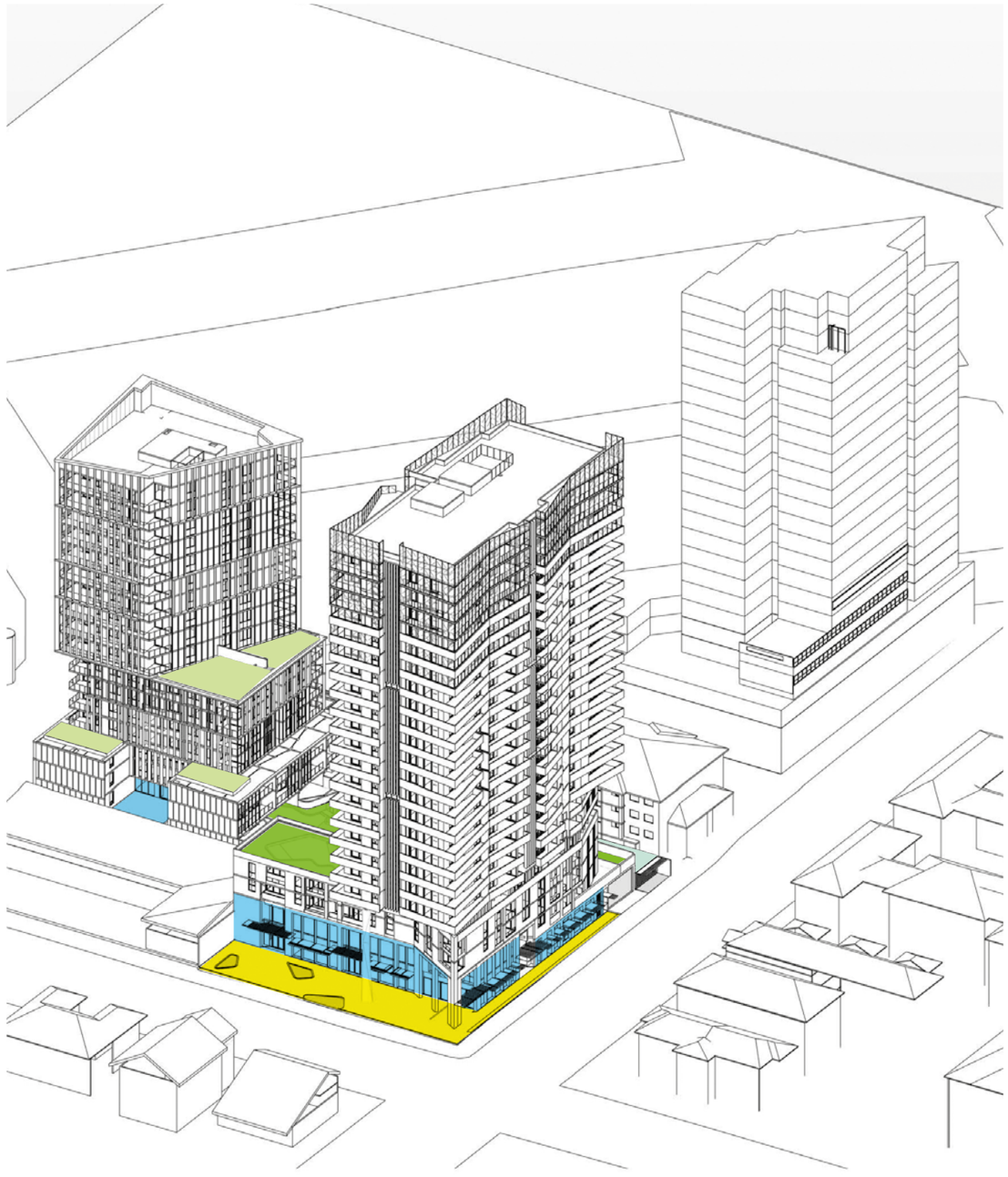


Figure 14 Proposed built form & uses *(Source of base image: AJC)*

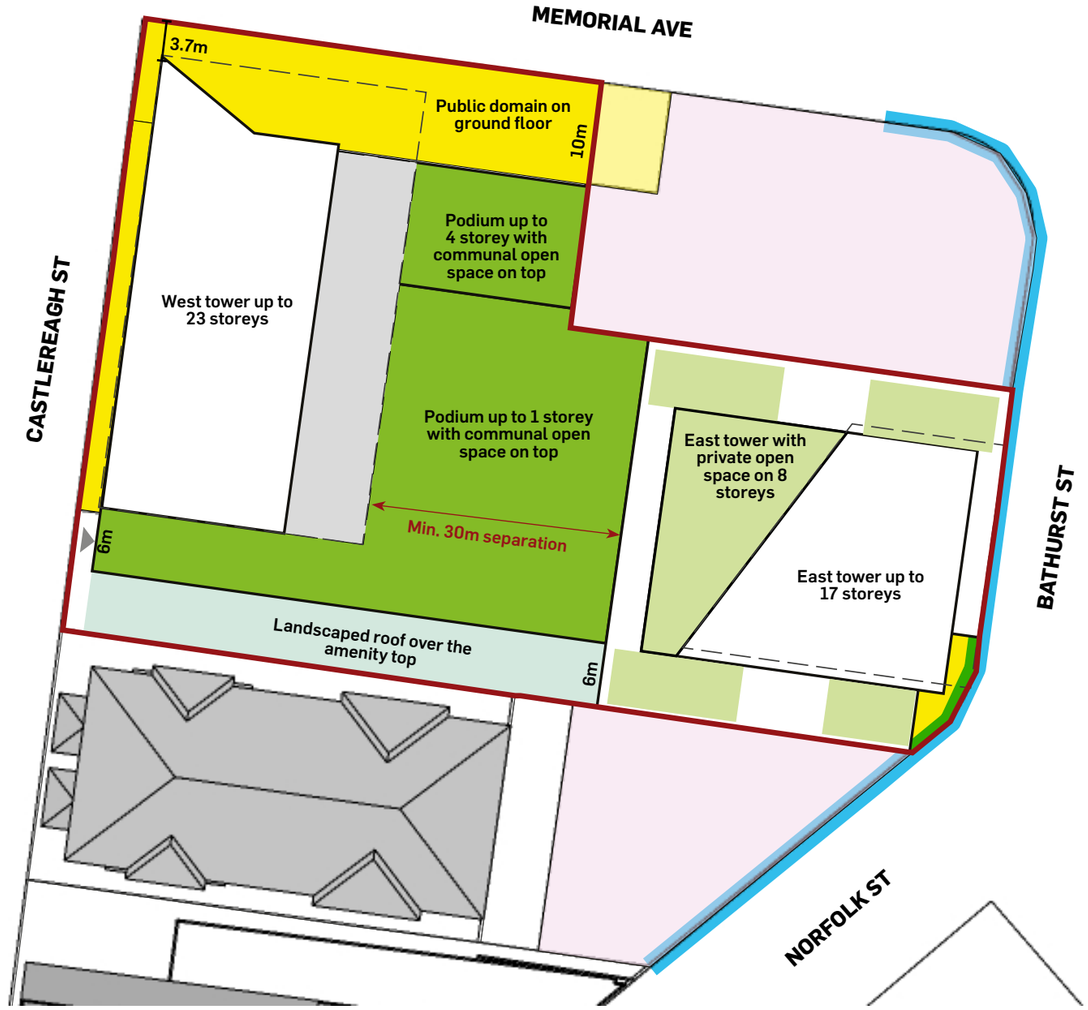


Figure 15 Proposed built form massing and indicative site plan

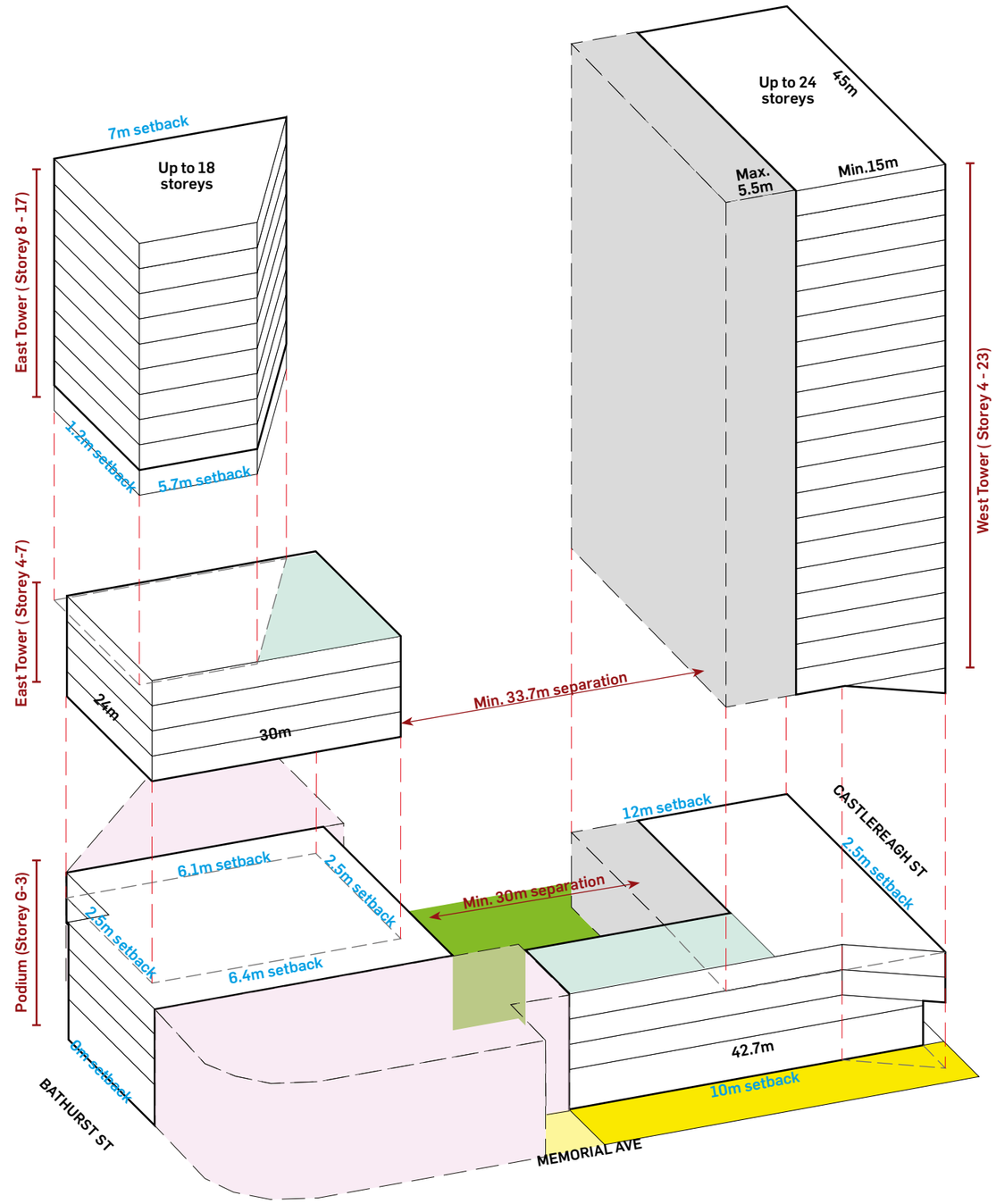


Figure 16 Proposed built form 3D axo diagram

LANDSCAPE & COMMUNAL OPEN SPACE

- Landscape and Public Domain comprising
  - A street level plaza to optimise solar access, building address, access and ground floor activation.
  - Podium level landscape to provide amenity to residents the childcare centre, visitors and workers.
  - Multi-level landscape elements optimising residential amenity and building design.

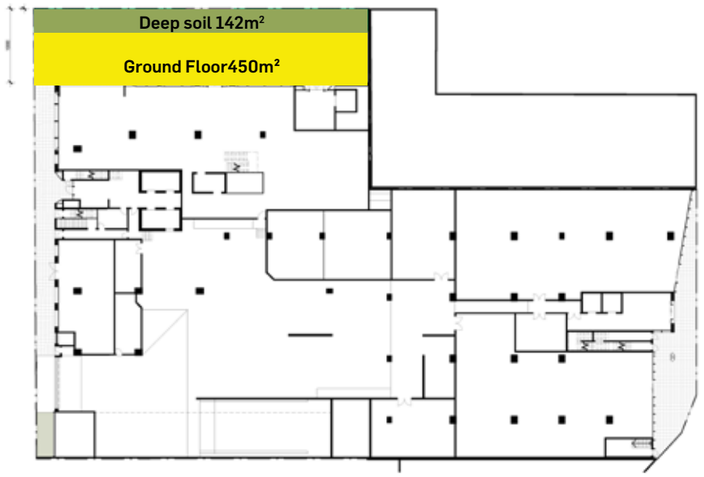


Figure 17 Ground level landscape plan

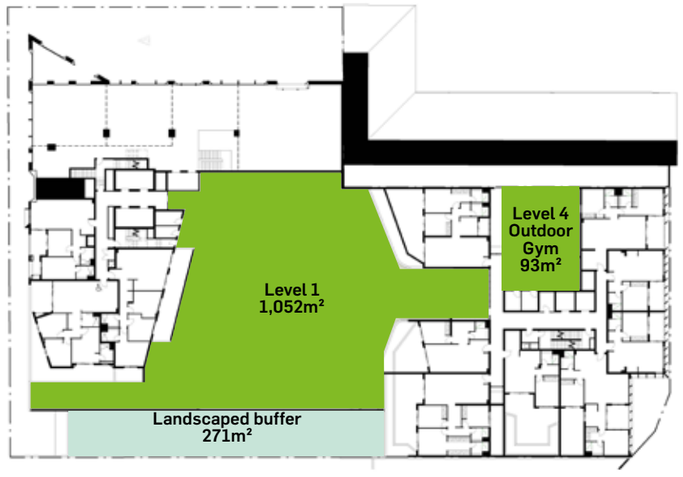


Figure 18 Level 1 landscape analysis

Figure 19 Level 4 landscape analysis

450M²/ 10%
PUBLIC OPEN SPACE

1,355M²/ 33%
COMMUNAL OPEN SPACE

142M²/ 3%
DEEP SOIL PLANTING

271M²/ 6%
LANDSCAPE BUFFER

LEGEND

- Deep soil planting
- Public open space
- Communal open space
- Landscaped roof
- Private open space

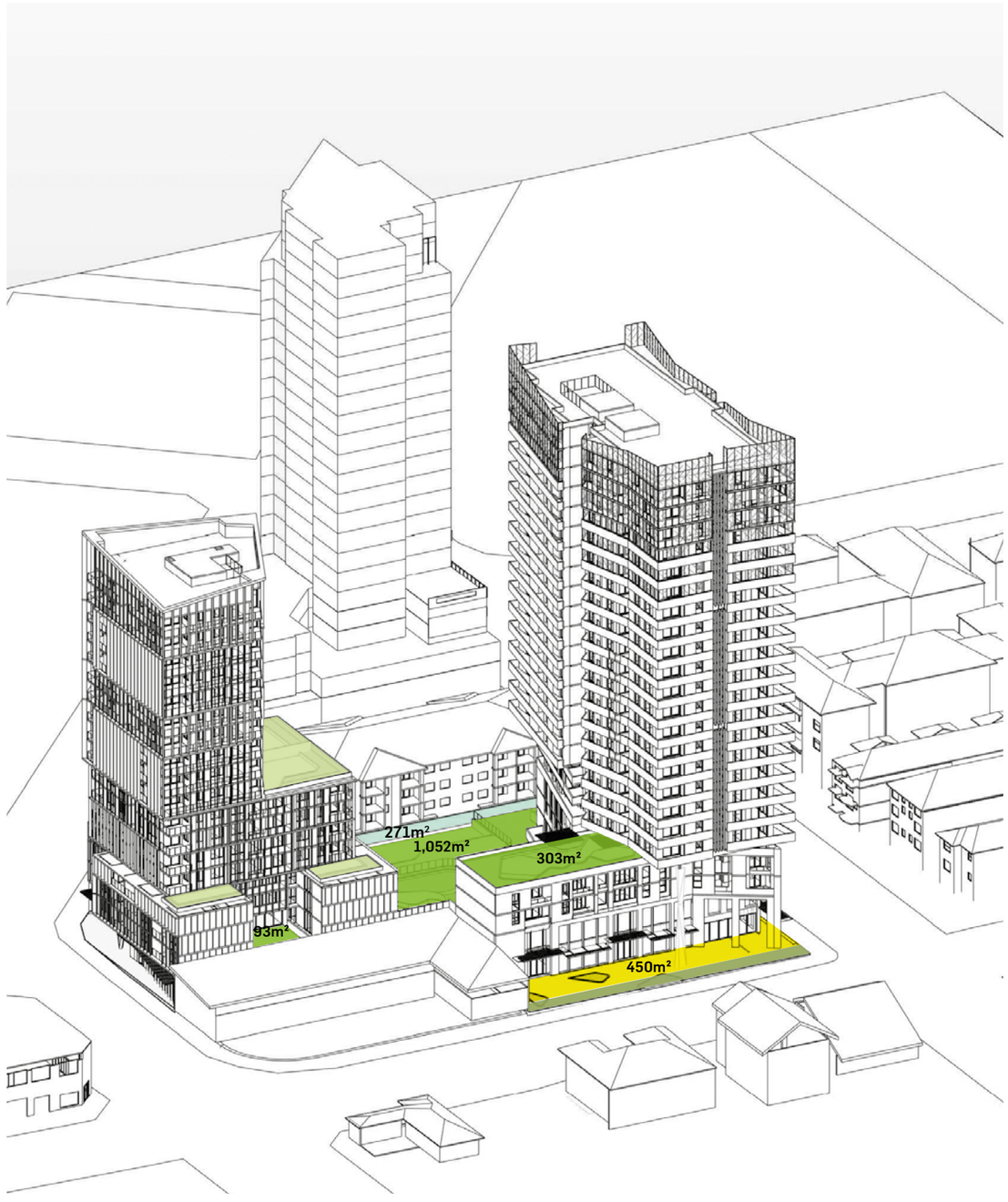


Figure 20 Proposed landscape on different levels

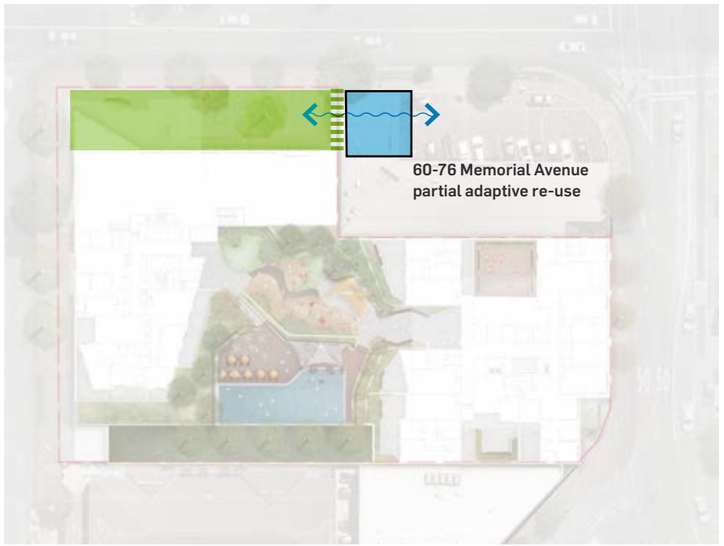
LANDSCAPE ILLUSTRATIVE PLAN

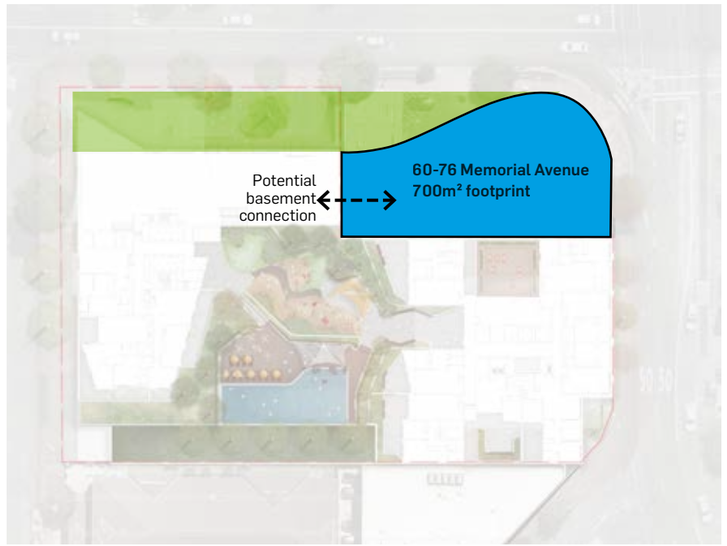
OCULUS

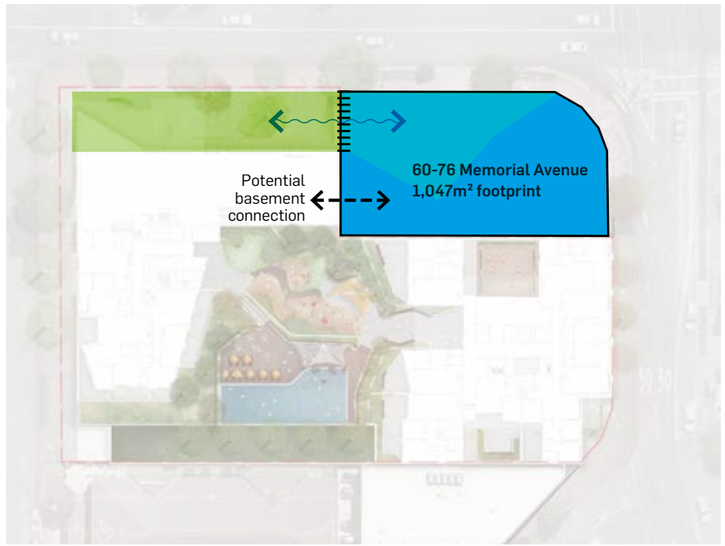
1:400 @ A3

0 5 10 15 20

PLAZA INTERFACE AND CONSIDERATIONS FOR 60-76 MEMORIAL AVENUE







The proposal offers ample flexibility (subject to negotiating with owners) to enable a number of scenarios for the future development of the adjacent building at 60-76 Memorial Avenue.

SCENARIO A: REMAINS 'AS IS'

In a scenario where 60-76 Memorial Avenue was to remain undeveloped, a number of ideas with public benefit for this interface have been explored. Key ideas include:

1. A **green wall** to the eastern boundary between the the new ground-floor plaza and the existing single-storey shop building. Currently this interface consists of a blank brick wall. A live, green wall would provide good amenity as well as a visually complimentary response to the urban plaza. Refer to page 28 for examples.
2. A **public art mural** would provide a compelling response to the urban plaza. A number of examples where this has been successful is illustrated on page 29.
3. The partial **adaptive reuse** of the adjacent shop (L-return) on 60-76 Memorial Avenue which can be opened up and revitalised at the interface to the plaza with active uses such as a cafe, retail, pop-up community uses, etc. Examples are included on page 29.

SCENARIO B: COMPLIMENTARY REDEVELOPMENT

In this scenario 60-76 Memorial Avenue is redeveloped where the design compliments the plaza and mixed-use urban block. The following principles are applied:

- A minimum 16% of the site is for the plaza to extend and curve up to the corner of Memorial Avenue and Bathurst Street.
- A zero setback to Bathurst Street and an emphasis of the corner.
- The building has a maximum height datum to match the proposed podium streetwall height (level 4 on AJC sections and elevations).

In this scenario, the allowable GFA is maximised at four levels given:

- 1,047m² site area.
- 2.48:1 FSR control which equates to a total GFA of 2,597m².
- The building envelope is 875m² with an assumed 80% efficiency for a commercial use and basement car parking which accessed via the larger site (requires an agreement between parties). For basement car-parking, refer to AJC drawing, page 13 of 47 architectural package "*Basement 1 Future Parking Connectivity*".
- Therefore at 700m² gross floor area, the total GFA equals to 2,597m² at 4 storeys.
- In this scenario the development is maximised at 2.48 : 1 FSR which is minimally above the current permissible FSR - which could be acceptable given the public benefit of the extended plaza at ground level.

SCENARIO C: PERIMETER BLOCK REDEVELOPMENT

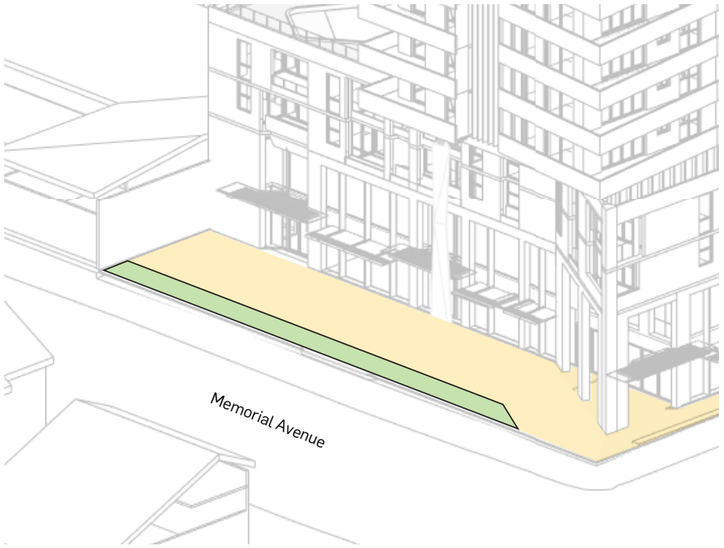
In this scenario 60-76 Memorial Avenue is redeveloped where the design consists of a perimeter block and adheres to the setback requirements in the DCP. The following principles are applied:

- A perimeter block with 0% attribution of the site for public domain or communal open space.
- Connection and outlook to the plaza at the adjoining mid-block boundary. Furthermore, this could be addressed in a numbers of ways - similar to the architectural treatments identified in Scenario A.
- A zero setback to Memorial Avenue and Bathurst Street.
- The building has a maximum height datum to match the proposed podium streetwall height (level 4 on AJC sections and elevations).

In this scenario, the allowable GFA is maximised at four levels given:

- 1,047m² site area.
- 2.61:1 FSR control which equates to a total GFA of 2,733m².
- The building envelope is 1,047m² with an assumed 80% efficiency for a commercial use and basement car parking which accessed via the larger site (requires an agreement between parties). For basement car-parking, refer to AJC drawing, page 13 of 47 architectural package "*Basement 1 Future Parking Connectivity*"
- Therefore at 838m² gross floor area, the total GFA equals to 3,350m² at 4-storeys.
- In this scenario the development is maximised at 3.20 : 1 FSR which is substantially over and above the permissible FSR and limited public benefit.

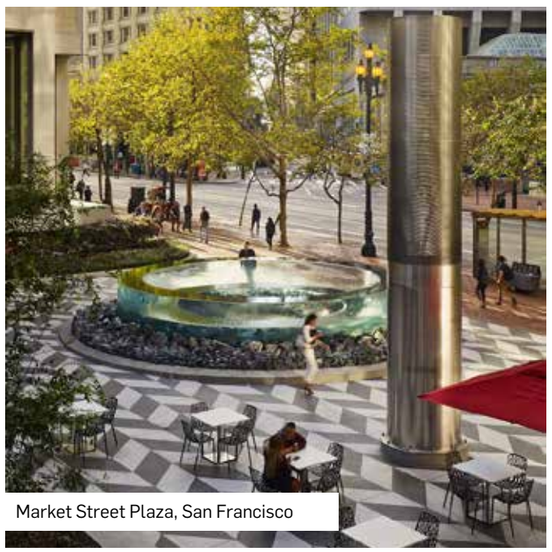
PROPOSED GROUND FLOOR PLAZA



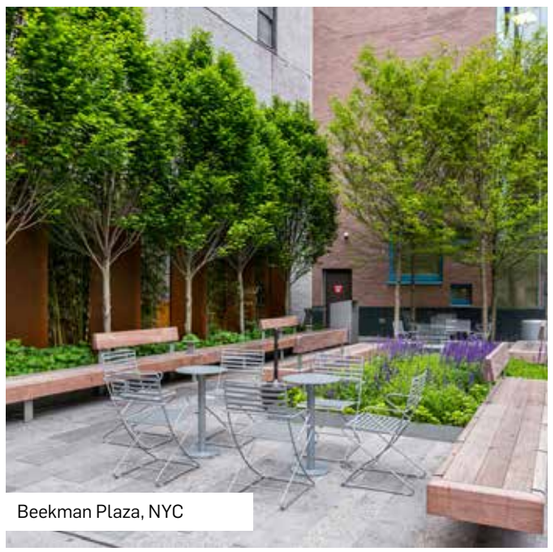
Beekman Plaza, NYC

PROPOSED GROUND FLOOR PLAZA

A public plaza is proposed fronting Memorial Avenue. This interface optimises solar access and the ability to accommodate some deep soil planting for medium sized trees providing shade and amenity for visitors, residents and passing pedestrians. The location of a plaza in this location ensures an interstitial public space betweeen the two regionally significant green nodes of Woodward Park to the west and the Georges River to the east.

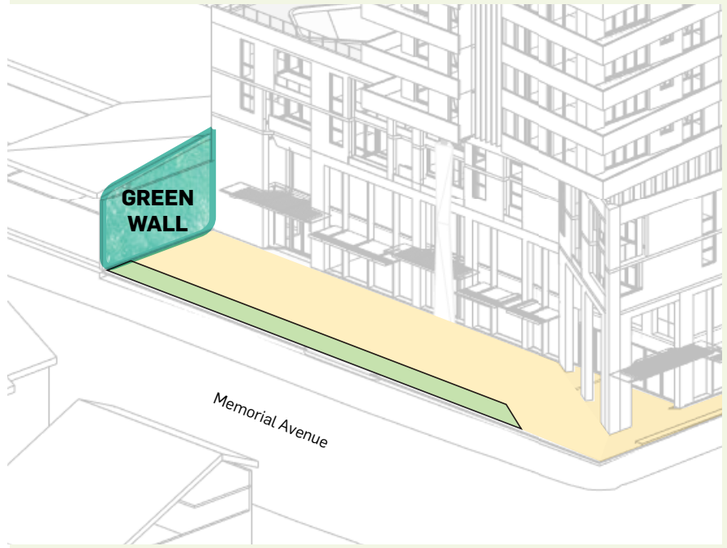


Market Street Plaza, San Francisco



Beekman Plaza, NYC

INTERFACE IDEAS INTEGRATING 60-76 MEMORIAL AVENUE



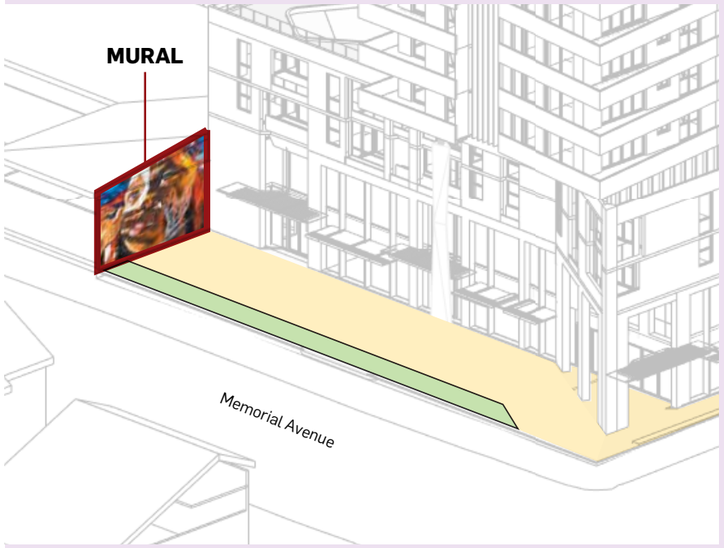
London, UK

OPTION 1: GREEN WALL TO ADJACENT BOUNDARY

A 'green wall' on the existing blank interface on the western boundary of 60-76 Memorial Avenue would provide visual interest and amenity that could integrate into the public plaza if the adjacent site were to remain undeveloped in the future.

St Leonards, NSW

Sydney, NSW



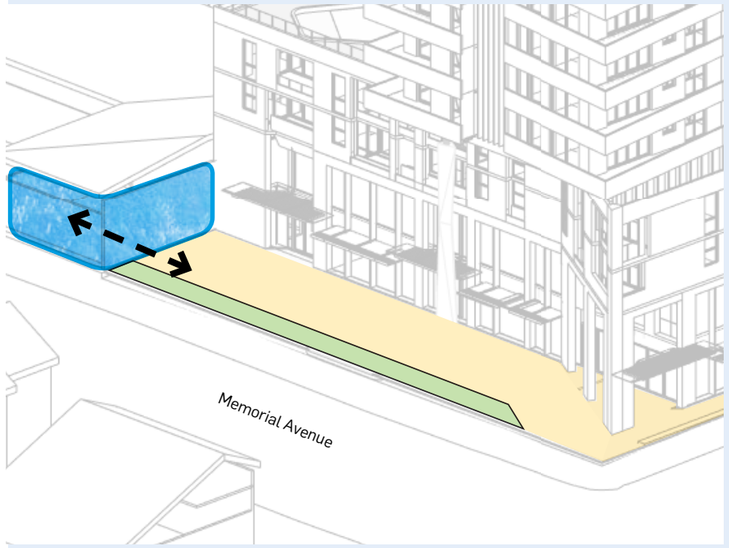
OPTION 2: PUBLIC ART - MURAL

Similar to the examples below, a more urban response which would require minimal maintenance would also be an appropriate interface to the plaza and the older building.


Glasgow, Scotland


Toowoomba, QLD


Fitzroy, VIC



OPTION 3: PARTIAL ADAPTIVE RE-USE OF ADJACENT SHOP BUILDING

The adaptive re-use or retrofit of a portion of 60-76 Memorial Avenue can ensure added interest, vibrancy and activation to the plaza similar to the examples provided.


Spritzenhaus33 - Brooklyn, New York


Olio Restaurant - St Louis, USA

Antique Garage - SoHo, New York

SOLAR ANALYSIS

This series shows the 'views from the sun' in order to identify the additional shadows cast by proposed built form on existing and approved residential developments at winter solstice in 1-hour intervals.

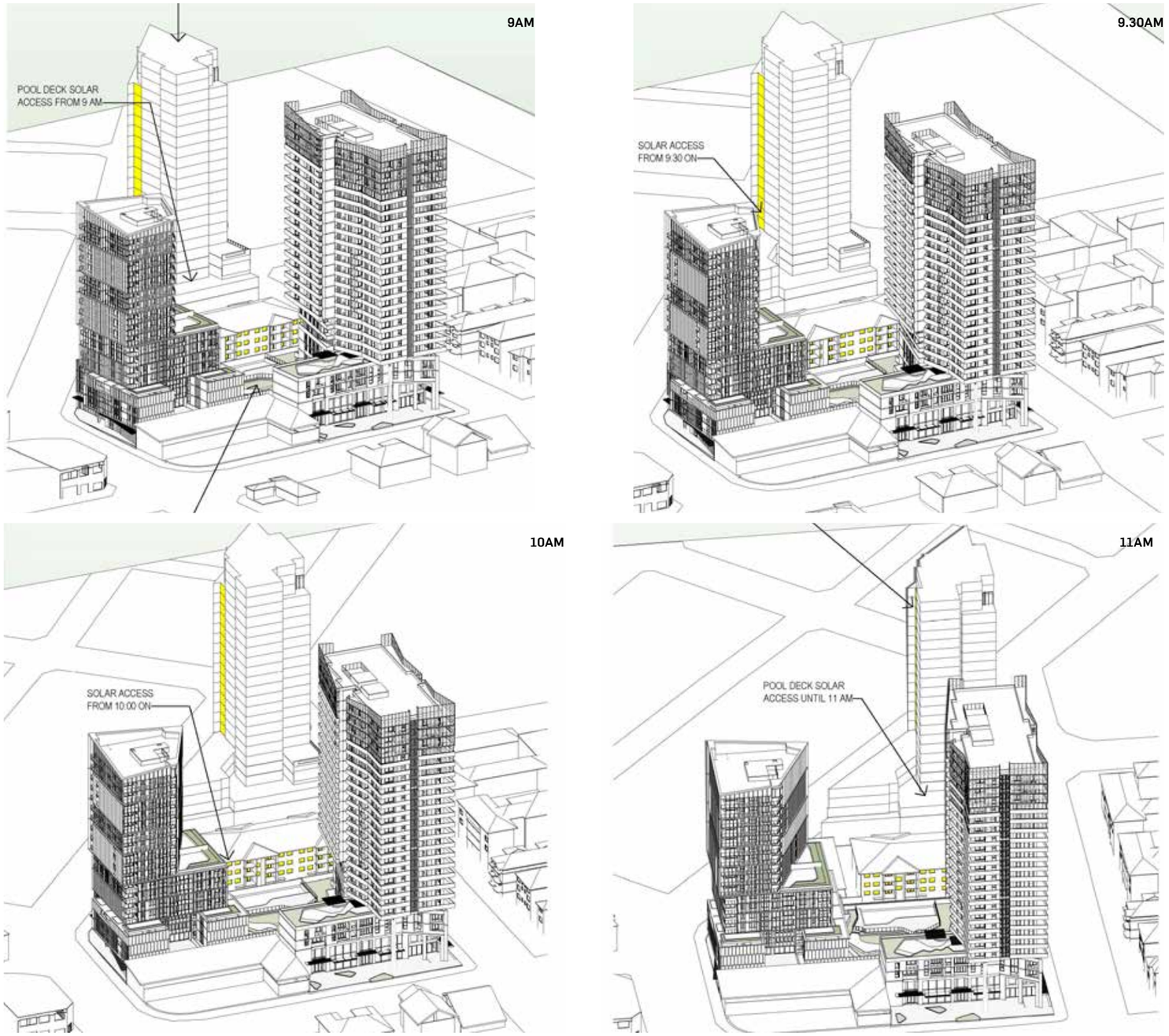
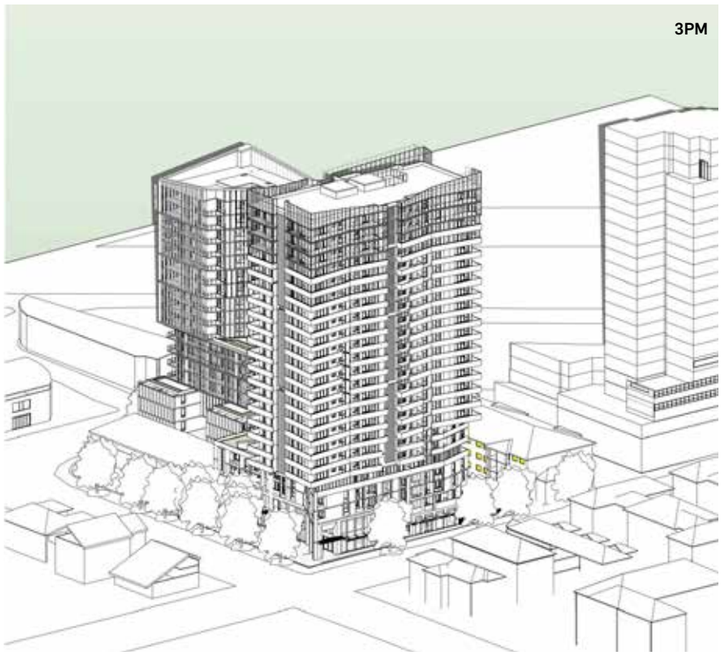


Figure 21 Solar Analysis*(Source of base image: AJC)*



Key Findings:

- Proposed built form has been shaped to minimise shadow impact to the southern existing residential development.
- All units of existing residential on the south facing north will receive at least 2 hours solar access in mid winter.
- The eastern façade of 7-13 Norfolk Street development will receive solar access from 9:30am to 11am.
- The proposed development does not decrease the existing solar access for more than 20%.

SHADOW IMPACT

Within urban settings, increased density and building height will generally result in additional shadow impacts. However, new buildings can be shaped and orientated to minimise overshadowing impacts.

The proposal is compliant with the built form controls for the site and mitigates, in as much as possible, the potential impacts to its neighbouring context - in particular the existing residential building to its immediate south.

Potential shadows of the proposed building envelopes are shown in the following diagrams.

Access to sunlight within apartments and private open spaces is measured at midwinter (21 June) from 9 am to 3 pm, as this is when the sun is lowest in the sky. This represents the 'worst case' scenario for solar access.

Key Findings:

- As opposed to short squat perimeter blocks, additional shadow cast in by slender forms minimise the development impact to existing context.
- More than 50% of communal open space receives at least 2 hours solar access during mid-winter.

LEGEND

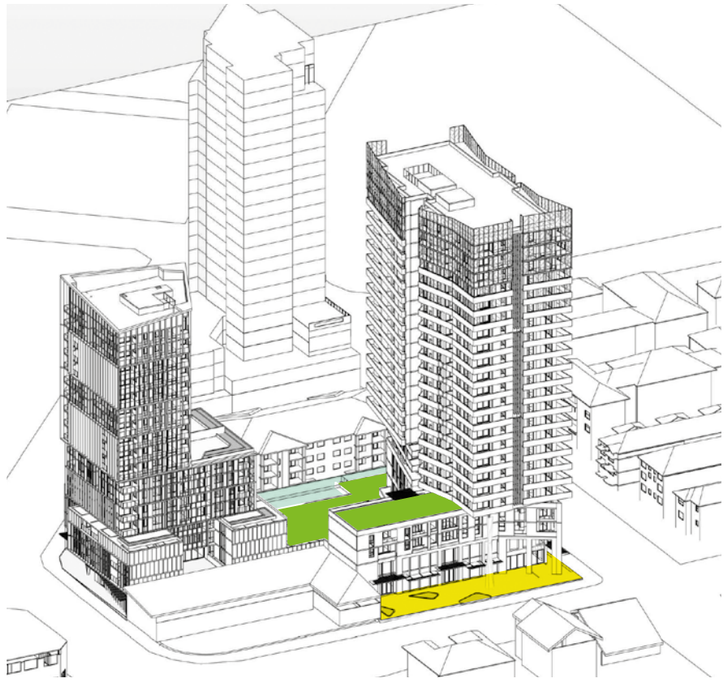
- Subject site area
- Existing shadow
- Additional shadow cast by proposed built form
- Shadow overlay from proposed and existing


12PM
1PM
2PM
3PM

5.0 KEY BENEFITS

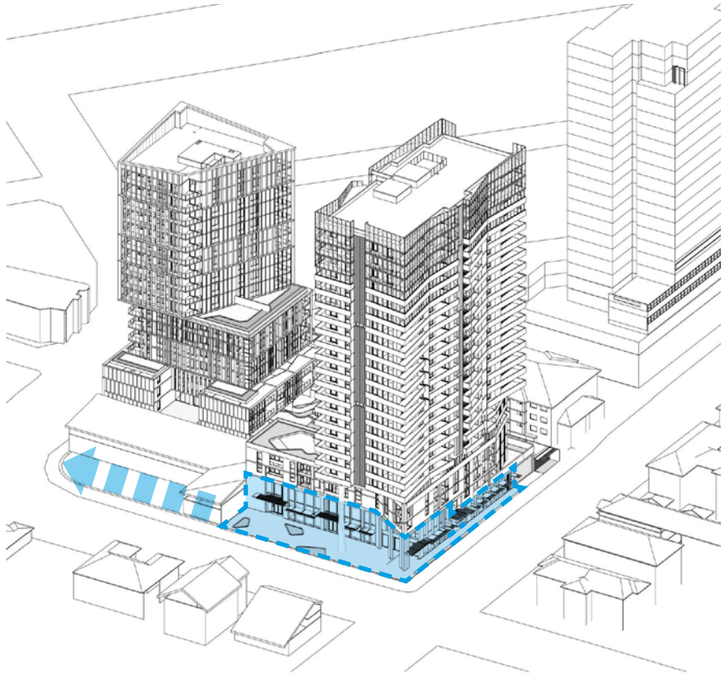
ENHANCED PUBLIC DOMAIN

A generous setback from Memorial Avenue establishes a public domain outcome along this important spine to provide a shaded corridor of trees, seating, gathering and meeting space that contributes to the life of the city.



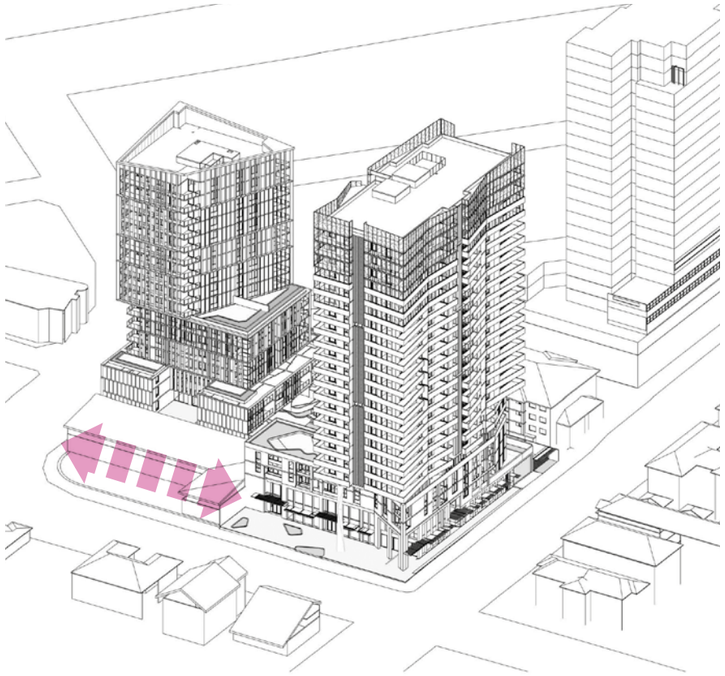
OPTIMISED COMMUNAL INTERACTIONS

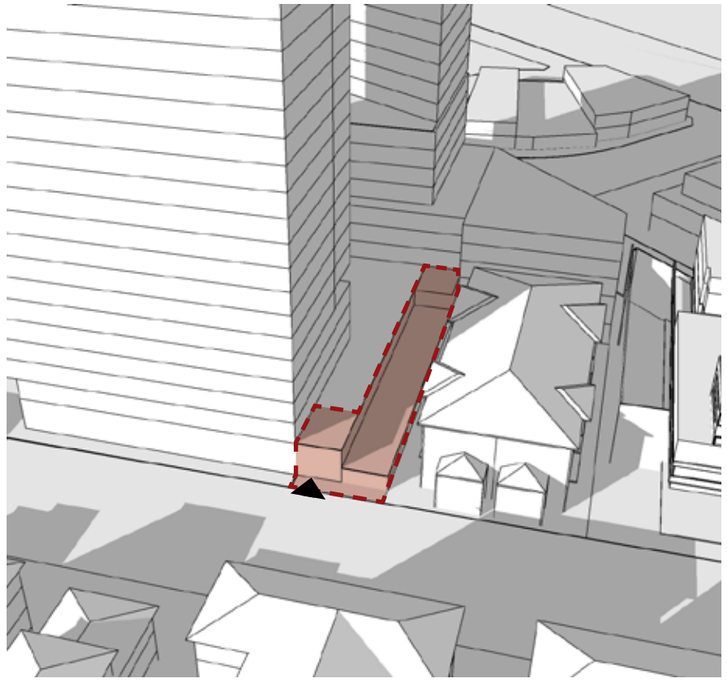
A variety of generous communal open spaces with good solar access is located on different levels to maximise opportunities for communal interaction, a sense of belonging and residential amenity.

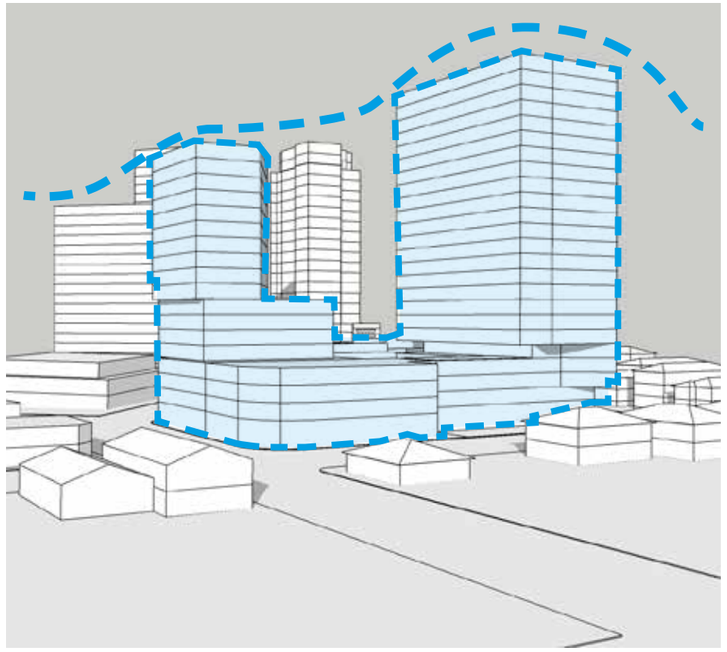


ACTIVATED GROUND PLANE

The ground floor along Memorial Avenue is activated with retail food and beverage to allow for casual surveillance, activity and vibranc







FLEXIBILITY FOR CORNER DEVELOPMENT

The design ensures flexibility for the adjoining site at 60-76 Memorial Avenue to develop or remain as it is in future scenarios.

DISCREET SERVICING & ACCESS

All vehicular access and servicing is discreetly located on Castlereagh Street to maintain the future desired character and quality of Memorial Avenue. Bathurst Street is too constrained to accommodate vehicular access and the proposed location minimises the number of conflicts between pedestrian and vehicles.

A VISUALLY DYNAMIC SKYLINE

The emerging built-form at Liverpool's southern gateway is characterised by newly constructed mixed-use and high-density residential apartments in a podium-tower typology. The taller building heights contribute to the future image of the city which establishes a visually dymanimc skyline from the southern approach to Liverpool CBD from the M5, Hume Highway, Hoxton Park Road and the Cumberland Railway Line.

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