URBIS

193 MACQUARIE STREET & 77-83 MOORE STREET LIVERPOOL

BUILT FORM STUDY

PREPARED FOR

ARCHER & BECKETT PTY LTD

18 JAN 2021
FINAL REPORT

INTRODUCTION

This document has been prepared on behalf of Archer & Beckett Pty Ltd to undertake a built form testing in response to the additional information request of a planning proposal of the proposed development at 193 Macquarie Street & 77 Moore Street.

This package is structured as follows:

CONTENTS

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ACKNOWLEDGEMENT OF COUNTRY

We acknowledge the Traditional Owners of the country on which we meet and recognise their continuing connection to land, waters and culture. We pay our respects to their Elders past, present and emerging.

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EXECUTIVE SUMMARY

Archer & Beckett Pty. Ltd is preparing a planning proposal of its property asset at 193 Macquarie Street & 77-83 Moore Street as an amalgamated site (The Site). The site is located at the south-western bookend of Macquarie Street Mall within Liverpool CBD.

Liverpool City Council has requested additional information in relation to the Planning Proposal to re-allocate the site from "Area 11" to "Area 8" on the Liverpool LEP 2008 FSR Map. This allows for an increased FSR to be accommodated on site which supports incentivised maximum building heights under the current planning controls.

The purpose of this study is to analyse the development potential under these two planning controls, being:

- Current Area 11 Controls (FSR 3:1, HOB 100m, 62.5% max. residential GFA); and
- Proposed Area 8 Controls (FSR 10:1, HOB - PANS-OPS - RL135.9m, 20% min. commercial GFA)

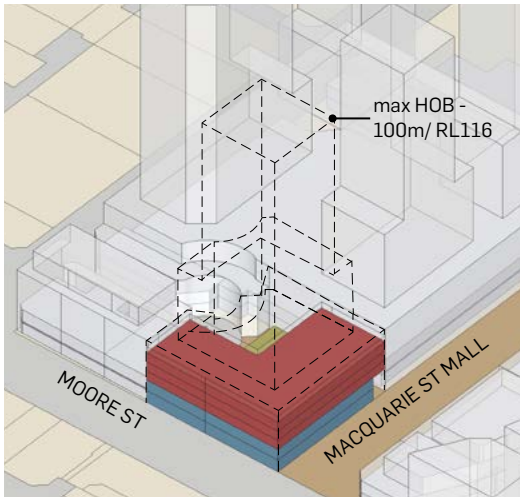
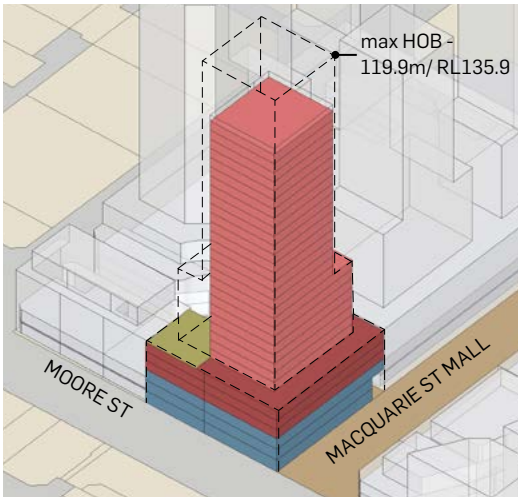
The following page summarises the development outcome for both schemes and concluding statements.

The detailed study of each scheme is explained in the following sections of this document.

CONCLUSION

1. **NET INCREASE IN COMMERCIAL GFA UNDER PROPOSED AREA 8 CONTROLS**
2. **THE BUILT FORM DOES NOT REFLECT THE FUTURE DESIRED CHARACTER WITHIN CURRENT AREA 11 CONTROLS**
3. **THE SITE HAS MORE CAPACITY TO ACCOMMODATE A TOWER FORM IN COMPARISON TO THE ADJOINING SITE**
4. **A TOWER BUILT FORM TO THE SOUTHERN BOOKEND OF MACQUARIE STREET MALL RESULTS IN LIMITED IMPACTS TO SOLAR ACCESS WITHIN THE PUBLIC DOMAIN**
5. **AN INTEGRATED DEVELOPMENT OPPORTUNITY WITH LIVERPOOL PLAZA**

Table 1 Built Form Testing Summary

	CURRENT AREA 11 CONTROLS	PROPOSED AREA 8 CONTROLS
Indicative 3D massing		

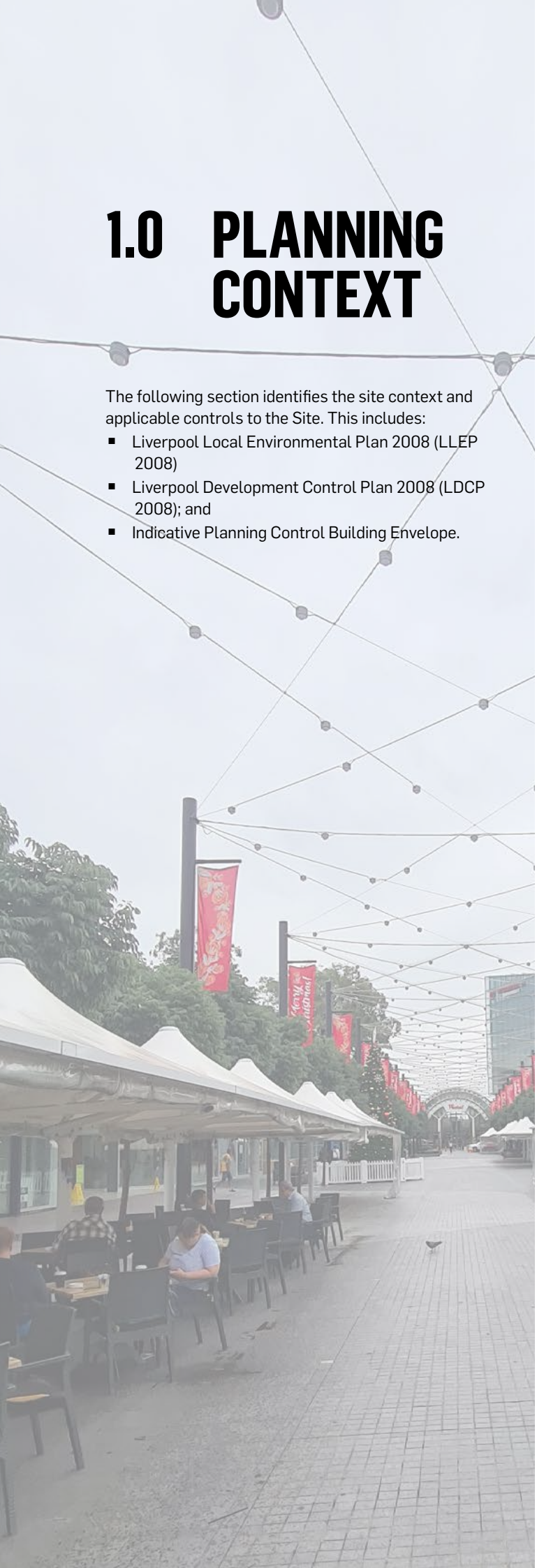
	CURRENT AREA 11 CONTROLS	AREA 11 OUTCOME	PROPOSED AREA 8 CONTROLS	AREA 8 OUTCOME
Total Site Area (sqm)		**1,931.0**		**1,931.0**
Max Permissible FSR (n:1)	**3.0**	**3.0**	**10.0**	**10.0**
Max Permissible GFA (sqm)	**5,793.0**	**5,726.9**	**19,310.0**	**19,307.4**
Commercial GFA	**2,172.4 sqm/ min. 37.5%**	**2,603.1 sqm/ 45.5%**	**3,862 sqm/ min. 20.0%**	**4,518.4 sqm/ 23.4%**
Residential GFA	3,620.6 sqm/ max. 62.5%	3,123.8 sqm/ 54.5%	15,448 sqm/ max. 80.0%	14,789.0 sqm/ 76.6%
Max height of building	**100.0m/ RL115.9**	**18.9m/ RL34.9/ 5 storeys**	**119.9m/ RL135.9**	**103.1m/ RL119.1/ 32 storeys**

PROS	• The proposed envelope provides street activation along Moore Street and Macquarie Street Mall. • 0m podium front setback provides streetwall continuation along Macquarie Street Mall and Moore St.	• The proposed envelope provides street activation along Moore Street and Macquarie Street Mall. • 0m podium front setback provides streetwall continuation along Macquarie Street Mall and Moore St. • Area 8 provides more commercial GFA than Area 11. • The proposed envelope reflects the surrounding future desired character of the precinct. • The tower form on the corner of Moore Street and Macquarie Mall emphasizes the importance of this junction and forms a visual anchor at the south-western bookend of the Mall.
CONS	• Current Area 11 Controls provides less commercial GFA than Area 8 Controls; • Current Area 11 Controls does not emphasize the importance of this junction as well as responding to the future built form character of the surrounding Area 8 controls; and • The proposed envelope is significantly lower than the permissible building height of 100m.	• The 14m upper level northern setback is greater than required by the ADG which results in a smaller floor plate of 530sqm. • Communal open space requirements to consider solar access in accordance with the ADG and future development of Liverpool Plaza.
FURTHER CONSIDERATIONS		• Potential to co-locate ground floor public domain with Liverpool Plaza and accommodate through site linkage to Davis Serviceway. • Potential to co-locate residential amenities being rooftop communal open space with Liverpool Plaza.

1.0 PLANNING CONTEXT

The following section identifies the site context and applicable controls to the Site. This includes:

- Liverpool Local Environmental Plan 2008 (LLEP 2008)
- Liverpool Development Control Plan 2008 (LDCP 2008); and
- Indicative Planning Control Building Envelope.



1.1 LIVERPOOL LOCAL ENVIRONMENTAL PLAN 2008 (LLEP 2008)

The following table and opposite plans identify the LEP planning controls applicable to the Site.

Table 2 Liverpool Local Environmental Plan 2008 (LLEP 2008)

Total Site Area (sqm)	**1,931**
Land Use Zone	B4 Mixed Use
CURRENT AREA 11 CONTROLS	
Area 11 FSR (n:1)	3.0
Total Allowable GFA - Area 11 (sqm)	**5,793**
Min. Commercial GFA - 37.5% (sqm)	**2,172**
Max. Residential GFA - 62.5% (sqm)	3,621
Max HOB (m)	100
PROPOSED AREA 8 CONTROLS	
Area 8 FSR (n:1)	10.0
Total Allowable GFA - Area 8 (sqm)	**19,310**
Min. Commercial GFA - 20% (sqm)	**3,862**
Max. Residential GFA - 80% (sqm)	15,448
Max HOB (m)	PANS-OPS (RL135.9m)
BUILDING SEPARATION	
Built form between 25m-45m height (m)	12.0
Built form between >45m height (m)	28.0

LAND ZONING

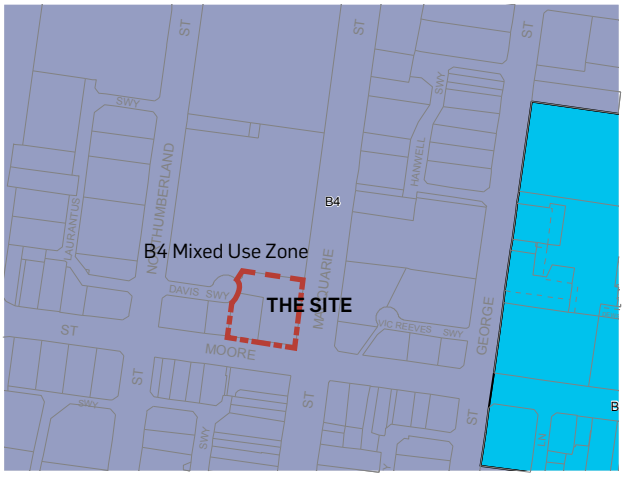


Figure 1 Land Zoning Plan

The Site is currently zoned B4 Mixed Use

FLOOR SPACE RATIO

Figure 2 Floor Space Ratio Plan

The Site is currently under Area 11 with maximum permissible FSR of 3:1

HEIGHT OF BUILDING

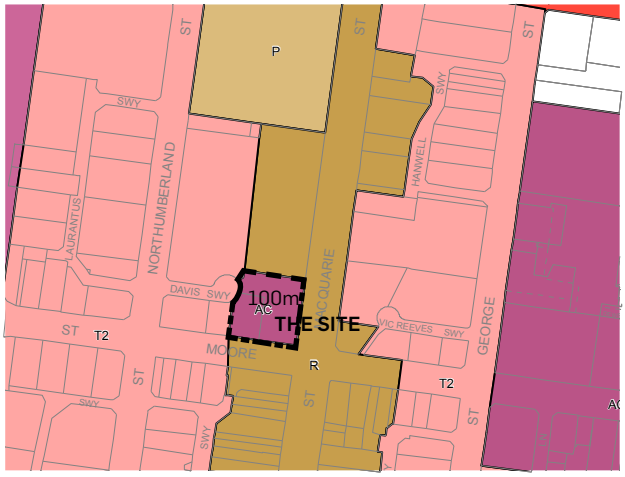


Figure 3 Height of Building Plan

The Site has a maximum permissible building height of 100m

HERITAGE

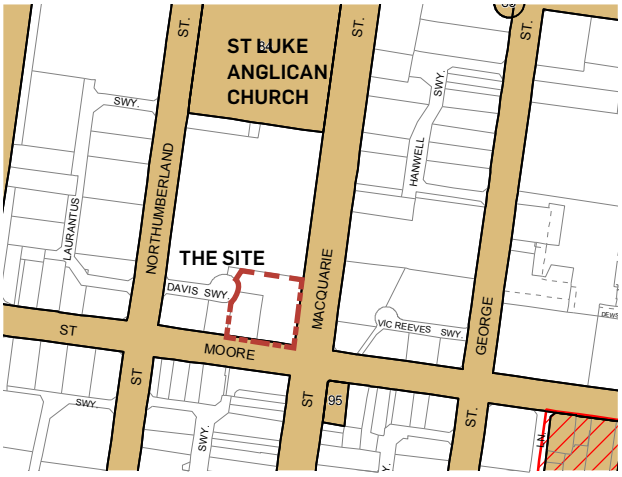


Figure 4 Heritage Plan

St Luke's Anglican Church and the road reserve within Liverpool CBD is listed as heritage items. This includes Macquarie Street and Moore Street that bounds the Site to the east and south.

1.2 LIVERPOOL DEVELOPMENT CONTROL PLAN 2008 (LDCP 2008)

The following table identify the DCP planning controls applicable to the Site.

Table 3 Liverpool Development Control Plan 2008 (LDCP 2008)

Max site coverage (Area 11)	75%
Max site coverage (Area 8)	100%
Max podium height (street frontage)	6 st
Max podium height (laneway frontage)	4 st
BUILDING SETBACKS	
Podium front setback	0m
Podium side setback (if adjoining development built to boundary)	0m
Mid Rise - Upper level front setback	3m
Tower on podium/ corner site- upper level front setback	6m
Tower on podium/corner site - upper level side setback	12m
Laneway setback - above 14m	6m
Stand alone building - side setbacks	refer to Apartment Design Guide (ADG) building separation below
Apartment Design Guide - building separation	
up to 12m/ ~4st	*min. 6m (between non-habitable rooms) - 12m (between habitable rooms)*
between 12-25m/ ~5-8st	*min. 9m (between non- habitable rooms) - 18m (between habitable rooms)*
more than 25m/ >8st.	*min. 12m (between non- habitable rooms) - 24m (between habitable rooms)*
BUILT FORM FLOOR PLATE	
Residential tower max elevation length	45m
Residential tower max GFA/ level	700 sqm
Commercial tower max elevation length	45m
Commercial tower max GFA/ level	1,000 sqm
MIN FLOOR TO FLOOR HEIGHT	
Min. floor to ceiling height (GF)	3.6m
Min. floor to ceiling height (commercial above ground level)	3.3m
Min. floor to ceiling height (residential above ground level)	2.7m
THROUGH SITE LINK	
Min through site links width (open to sky)	3.0m
Min through site links width (arcades)	5.0m, two storeys high

This built form study adopts LLEP 2008 building separation control to identify the indicative building envelope, noting its discrepancies with LDCP setback controls which refer to Apartment Design Guide (ADG).

The following diagram identifies the setback controls applicable to the Site.

LEGEND

- The Site
- Indicative Podium Envelope
- Indicative Tower Envelope
- GF Commercial/ Retail Activation
- Min. 5m Wide Through Site Link

SETBACK CONTROL

- 0m Streetwall Front Setback
- 3m Upper Podium Front Setback
- 6m Tower Front Setback
- 6m Tower Side Setback/ 12m Building Separation (25-45m height)
- 14m Tower Side Setback/ 28m Building Separation (>45m height)
- 0m Streetwall Side Setback
- 0m Streetwall Rear Setback (up to 14m height)
- 6m Upper Level Rear Setback (>14m)

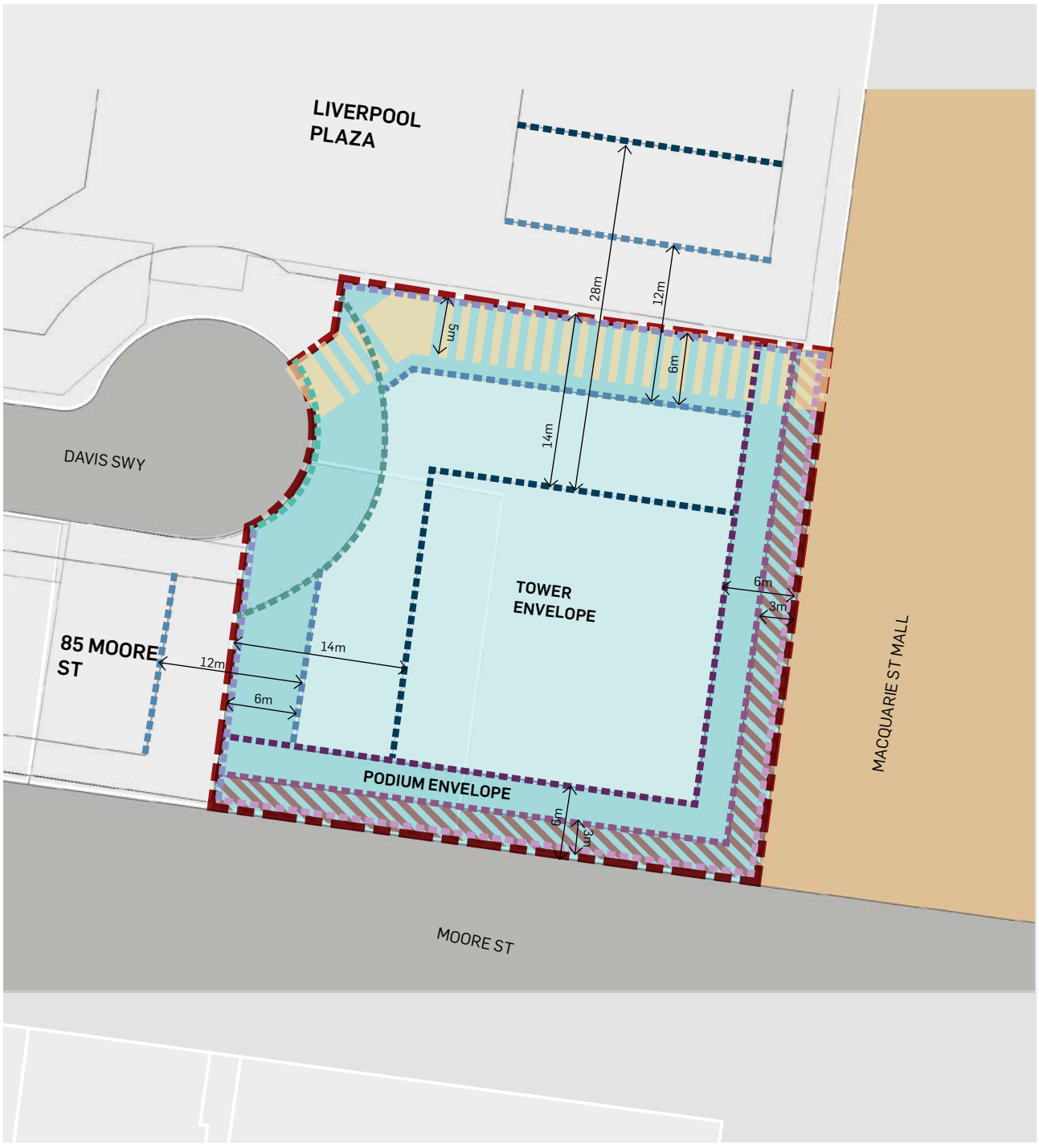


Figure 5 LLEP & LDCP Building Setbacks and Separation Controls

1.3 INDICATIVE PLANNING CONTROL BUILDING ENVELOPE

An indicative building envelope has been prepared for two different typologies based on the LLEP 2008 and LDCP 2008 controls. This includes:

- Podium & tower typology; and
- Mid rise typology.

This also illustrates the indicative maximum building heights under both Area 11 and Area 8 controls.

TOWER ON A PODIUM TYPOLOGY

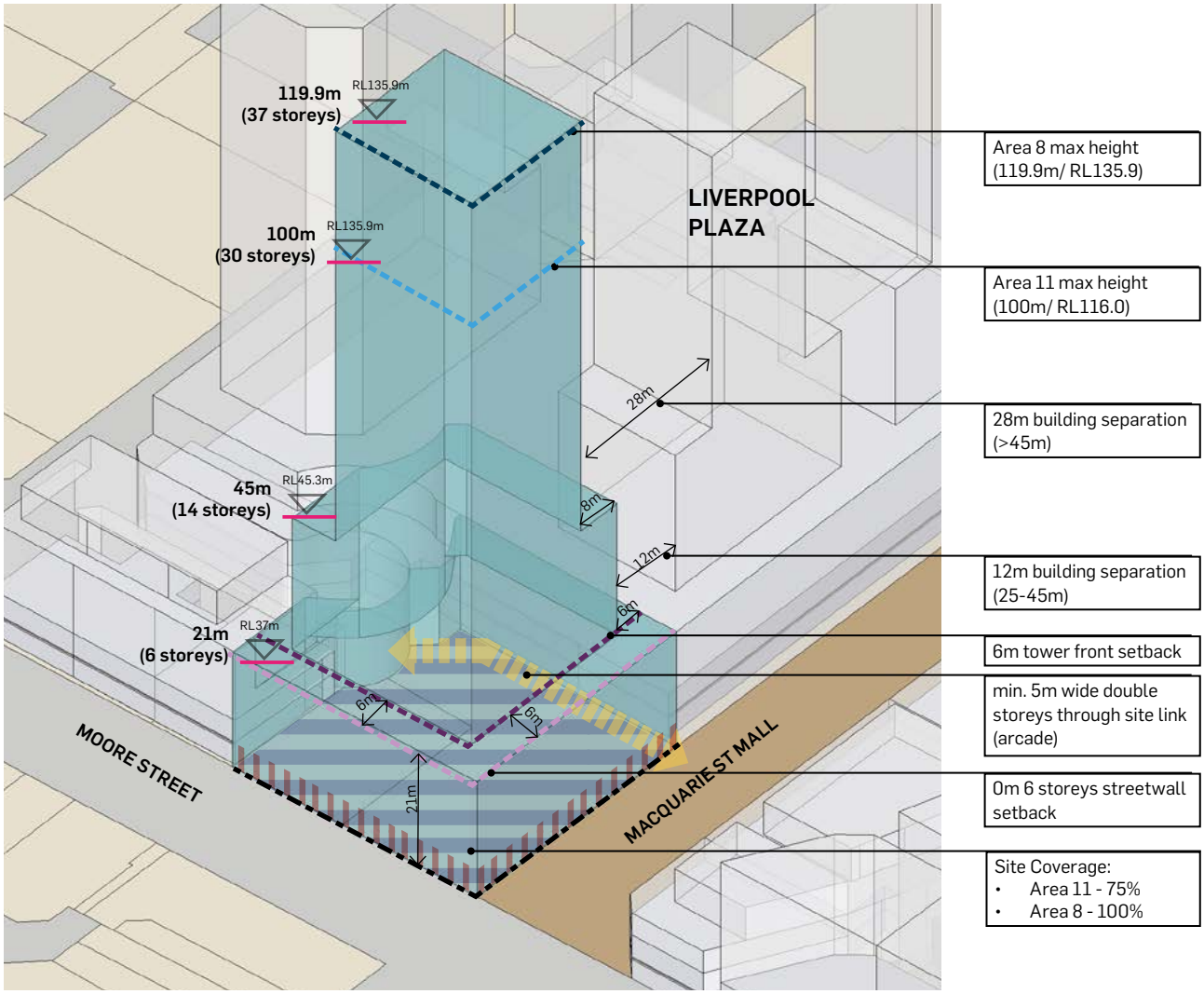


Figure 6 Indicative building envelope control - Tower on a Podium Typology

LEGEND

- Subject Site
- Indicative Building Envelope
- Site Coverage
- GF Commercial/ Retail Requirement
- Min. 5m Wide Through Site Link

SETBACK STRATEGY

- 0m Streetwall Front Setback
- 3m Upper Podium Front Setback
- 6m Tower Front Setback
- Area 11 Max Height (100m/ RL116.0)
- Area 8 Max Height (119.9m/ RL135.9)

MID-RISE TYPOLOGY

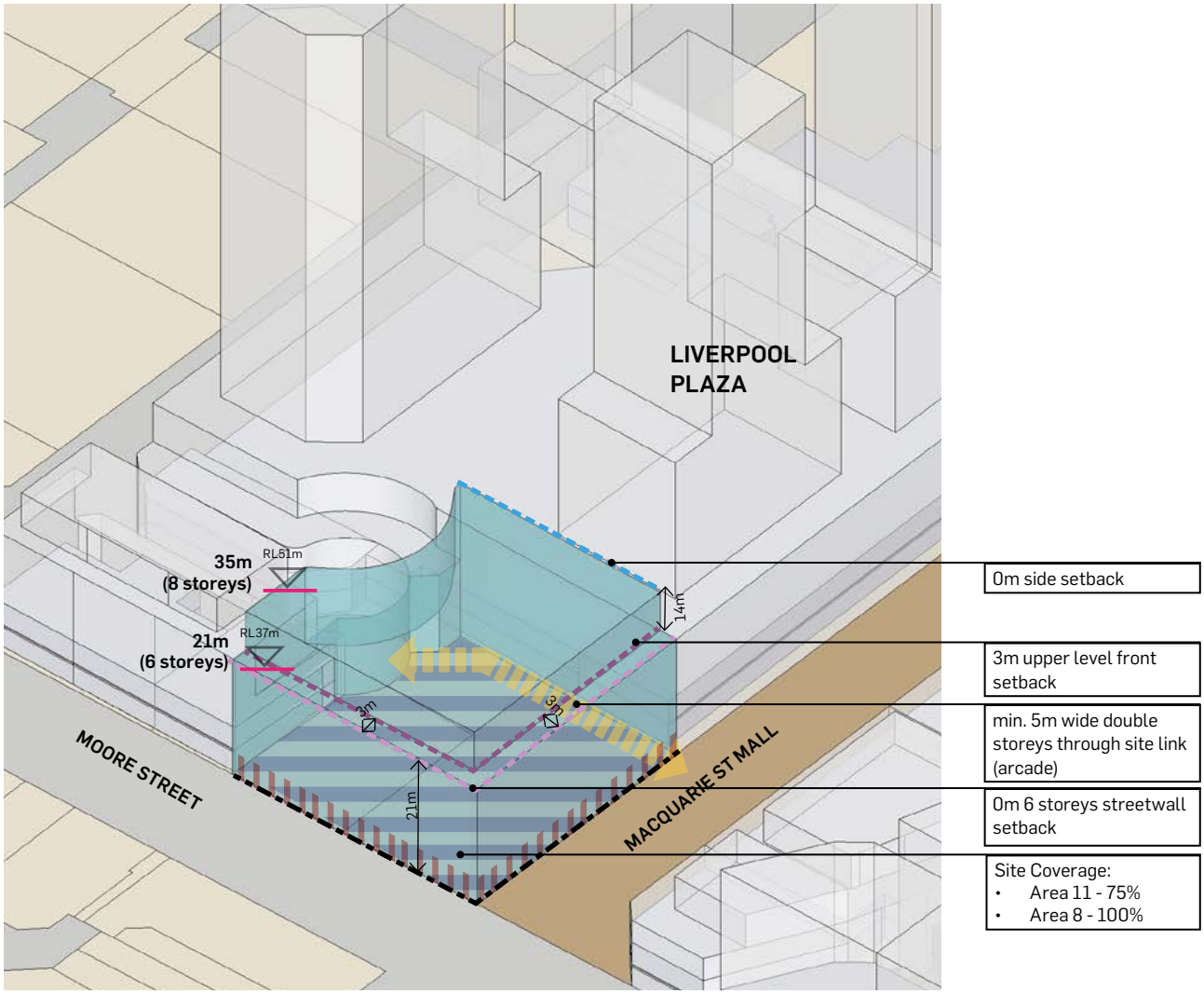


Figure 7 Indicative building envelope control - Mid Rise Typology

2.0 SITE CONTEXT

The following section identifies the site context and analysis as part of the consideration to undertake the built form testing. This includes:

- Site Description;
- Site Analysis; and
- Surrounding Context.

2.1 SITE DESCRIPTION

The Site comprises of two adjoining properties being 193 Macquarie Street and 77-83 Moore Street.

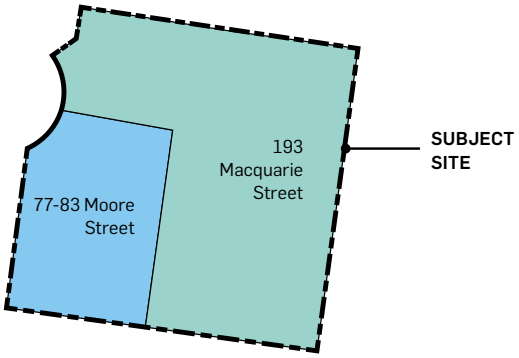


Figure 8 Subject site diagram

The Site is generally square in shape, with variations at the rear where it abuts Davis Serviceway. It has a dimension of approximately 45m x 45m and a total area of 1,931 sqm. There is an existing through site link to the northern boundary between Macquarie Street Mall and Davis Serviceway, however it is currently inaccessible.

The site is bounded by Moore Street to the south, Liverpool Plaza to the North, Macquarie Street Mall to the east and 85 Moore Street and Davis Serviceway to the west.

2.2 SITE ANALYSIS

The following table and diagrams identifies the analysis of the Site.

LEGEND

- The Site
- Existing surface car park to the rear
- Existing corner plaza - currently inaccessible

STREET FRONTAGE & BUILDING INTERFACE

- Macquarie Street Mall Interface - a highly trafficked pedestrian and public domain space
- Moore Street frontage - identified as part of future transport corridor
- Built to boundary between the Site, 85 Moore Street and Liverpool Plaza

ACCESS AND MOVEMENTS

- Potential vehicular and service access from Davis Serviceway
- Existing through site link - currently inaccessible

GROUND FLOOR BASE RL

- RL 16.00 - 193 Macquarie Street level

Figure 9 Site Analysis

1:500 @ A4

2.3 SURROUNDING CONTEXT

The Site is situated at the heart of Liverpool CBD anchoring the south-western bookend of Macquarie Street Mall. It is surrounded by major commercial and retail uses including Liverpool Plaza, Westfield Liverpool and Macquarie Street Mall

Liverpool Plaza is a one storey shopping mall situated immediately to the north of the site that is currently under the same ownership as the subject Site.

Macquarie Street Mall is the primary public domain of Liverpool CBD whereby any future development needs to consider the solar access impact to this public domain.

Moore Street is the east-west collector road connecting Hume Highway to the west and Liverpool Station to the east. It is planned to be part of the future Fifteenth Avenue Smart Transit (FAST) corridor - a main transit corridor connecting Liverpool and future Western Sydney Aerotropolis .

Westfield Liverpool is the primary retail centre anchoring the northern bookend of Macquarie Street Mall. An 8-storey WSU campus is situated to the north-eastern part of the mall and is currently one of the tallest built forms within the within the vicinity of Macquarie Street Mall.

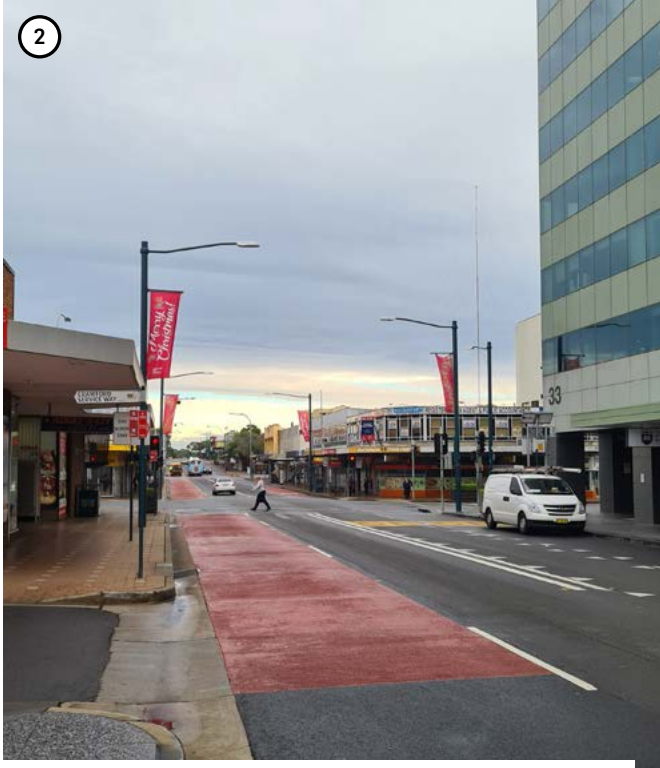
Macquarie Street Mall, Moore Street, 91 Moore Street and St Luke's Anglican Church to the north of Liverpool Plaza are listed as heritage items.

The diagram below and opposite page illustrates the site locality and the current condition of the surrounding context.

Figure 10 Site Context

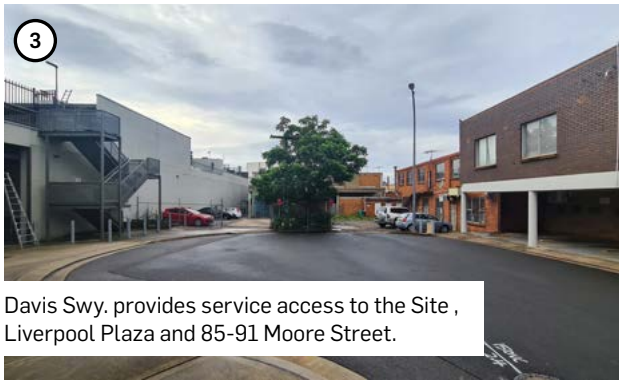
1

The south-western bookend of Macquarie Street Mall - The Site



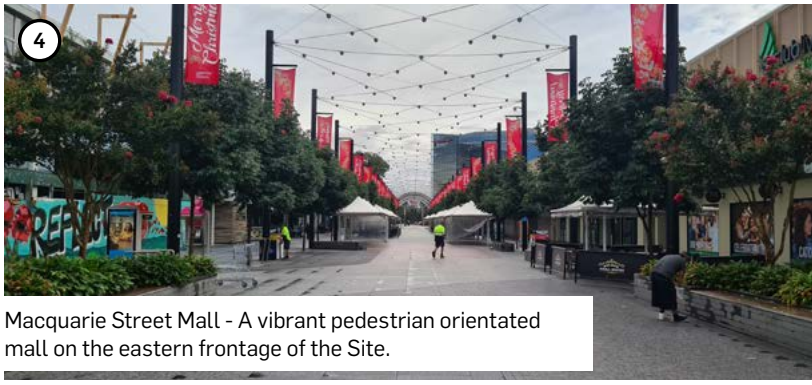
2

Moore Street is planned to be four lanes as part of the future transport corridor connecting Liverpool and Western Sydney Aerotropolis.



3

Davis Swy. provides service access to the Site , Liverpool Plaza and 85-91 Moore Street.



4

Macquarie Street Mall - A vibrant pedestrian orientated mall on the eastern frontage of the Site.

5

The Site existing condition - a prominent corner site

6

The 8-storey WSU campus is currently one of the tallest built forms within Macquarie Street Mall vicinity

7

Existing through site link along the northern boundary that is currently inaccessible

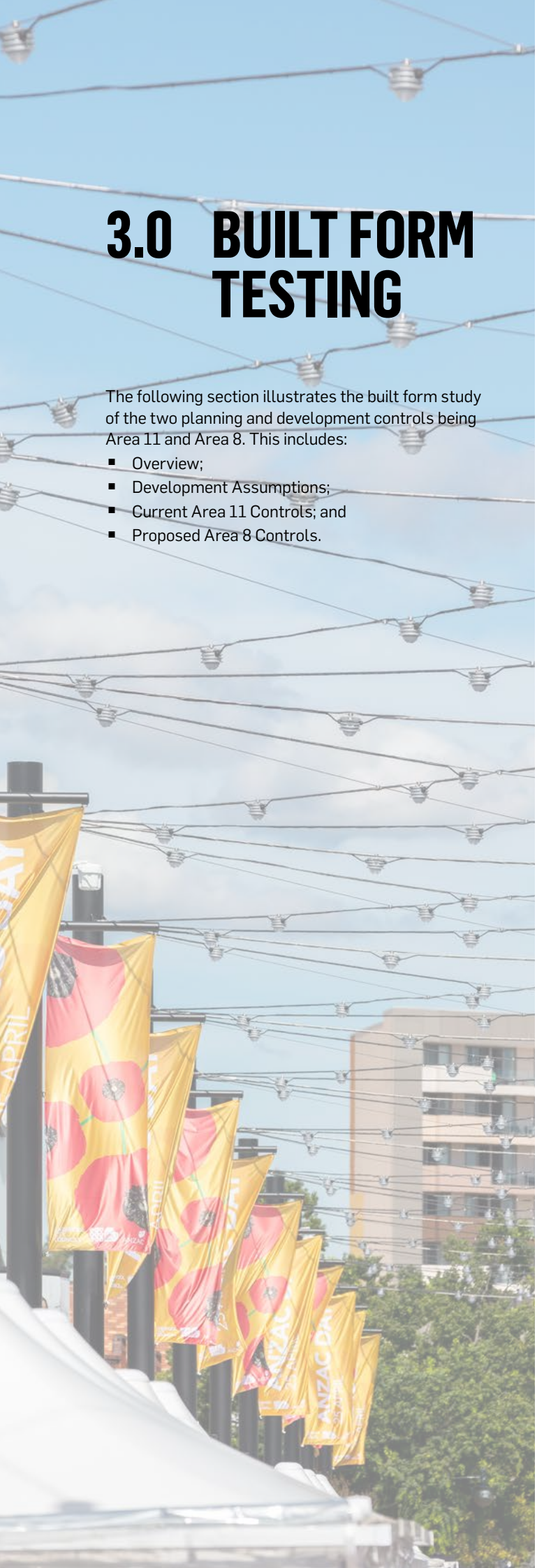
8

91 Moore Street - Existing heritage building to the west of the Site

3.0 BUILT FORM TESTING

The following section illustrates the built form study of the two planning and development controls being Area 11 and Area 8. This includes:

- Overview;
- Development Assumptions;
- Current Area 11 Controls; and
- Proposed Area 8 Controls.



3.1 OVERVIEW

Two built form testing schemes have been undertaken, being:

- Current Area 11 Controls (FSR 3:1, HOB 100m, 62.5% max. residential GFA); and
- Proposed Area 8 Controls (FSR 10:1, HOB - PANS-OPS - RL135.9m, 20% min. commercial GFA).

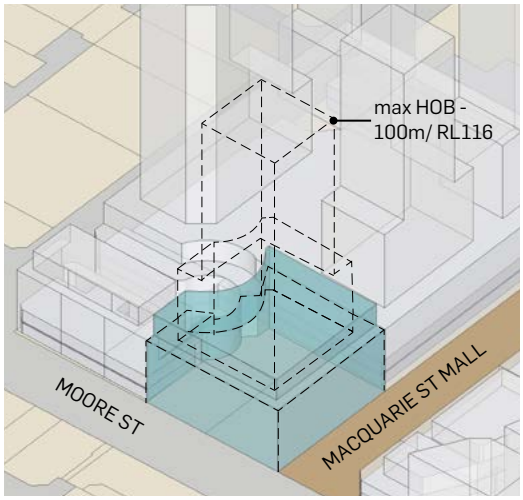
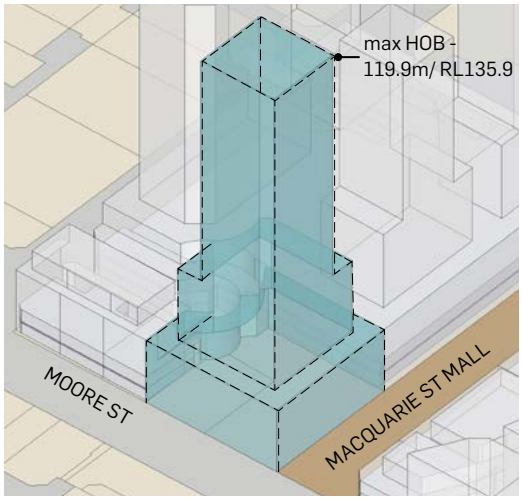
For each of the schemes, the following analysis was undertaken and illustrates the following outcomes:

- Development outcome summary;
- Indicative plan including applicable setbacks;
- Indicative 3D axonometric;
- Development breakdown;
- Indicative 3D context aerial view; and
- Solar access analysis to Macquarie Street Mall.

An indicative built form of the adjoining Liverpool Plaza and 85-91 Moore Street has been prepared in accordance with LLEP 2008 and LDCP 2008 controls. The Liverpool Plaza scheme illustrated herewith is high-level and does not consider calibrations such as solar access, amenity and other requirements for that site and surrounds.

The primary purpose of the 3d modelling of the adjacent site is to understand the future built form context in accordance with the current controls (FSR and HOB) and to consider the building separation implications for the subject site. The following table and opposite page identifies the planning control and development assumptions undertaken for the built form testing.

Table 4 Development Control Summary

	CURRENT AREA 11 CONTROLS	PROPOSED AREA 8 CONTROLS
Indicative 3D massing		

	CURRENT AREA 11 CONTROLS	PROPOSED AREA 8 CONTROLS
Total Site Area (sqm)	**1,931**	**1,931**
Max Permissible FSR (n:1)	**3.0:1**	**10.0:1**
Max Permissible GFA (sqm)	**5,793.0**	**19,310.0**
Commercial GFA	**2,172.4 sqm/ min. 37.5%**	**3,862 sqm/ min. 20.0%**
Residential GFA	3,620.6 sqm/ max. 62.5%	15,448 sqm/ max. 80.0%
Max height of building	**100.0m/ RL115.9**	**119.9m/ RL135.9**

3.2 DEVELOPMENT ASSUMPTIONS

The following assumptions are applied for the built form study:

BUILDING HEIGHT

4.0m	Commercial floor to floor height - Ground level
3.6m	Commercial floor to floor height - above ground level
3.1m	Residential floor to floor height -above ground level
2m	Lift Overrun
RL16.0	Base RL

BUILDING EFFICIENCY

85%	GBA to GFA-Commercial
75%	GBA to GFA-Residential
82	sqm/ residential unit

CURRENT AREA 11 CONTROLS
BUILT FORM TESTING

OVERVIEW

The potential envelope results in a 5-storey podium form with the maximum height of 18.9m. Whilst the building envelope achieves its maximum FSR of 3.0:1, it is significantly under its permissible height control of 100m.

The following diagrams and tables on the following pages illustrates the compliant building envelope study based on the Current Area 11 Controls.

KEY SUMMARY

- The result of the Current Area 11 Controls does not reflect the future desired character that will be predominant on Moore Street and Macquarie Street.

Table 5 Development Outcome - Current Area 11 Controls Scheme

	PLANNING CONTROL	DEVELOPMENT OUTCOME
Total Site Area (sqm)		**1,931**
Total FSR (n:1)	**3.0**	**3.0**
Total GFA (sqm)	**5,793**	**5,727**
Min. Commercial GFA (sqm)	**2,172**	**2,603**
Min. Commercial GFA (%)	**37.5%**	**45.5%**
Min. Residential GFA (sqm)	3,621	3,124
Min. Residential GFA (%)	62.5%	54.5%
Max building height (m)	**100.0**	**18.9**
Max building height (RL)	115.9	34.9
Max building height (storeys)		5.0
Communal Open Space Provision (sqm)	482.75	253.17
Communal Open Space Provision (%)	**25%**	**13%**

5,727 SQM.
TOTAL GROSS FLOOR AREA

45.5 %.
COMMERCIAL GFA

3.0:1
FLOOR SPACE RATIO

18.9M/ 5 ST.
BUILDING HEIGHT

Figure 11 Current Area 11 Controls Scheme

INDICATIVE BUILDING ENVELOPE

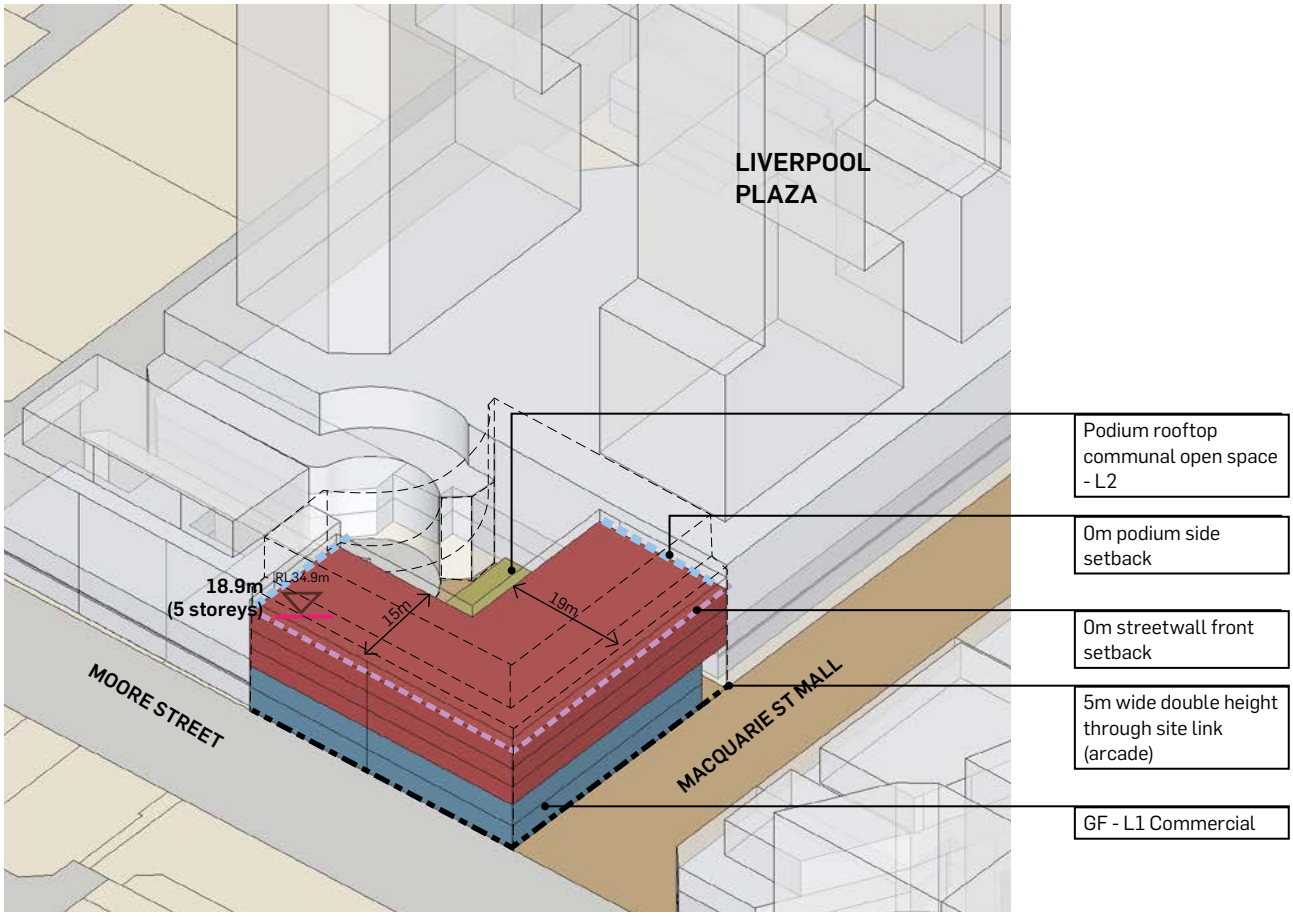


Figure 12 Current Area 11 Controls - Axonometric SE

LEGEND

- Subject Site
- Indicative Envelope - Mid Rise
- Streetwall Podium Envelope - Commercial
- Streetwall Podium Envelope - Residential
- Upper Podium Envelope - Residential
- Podium Rooftop Communal Open Space
- Ground :Level Open Space

SETBACK STRATEGY

- 0m Front Setback - Streetwall
- 0m Side Setback - Streetwall & Podium

Table 6 Development Breakdown - Current Area 11 Controls Scheme

LEVEL	USES	FP (SQM)	GBA (SQM)	GFA (SQM)	GFA (%)	FSR	NO. ST.	HEIGHT (M)	CUMULATIVE HEIGHT (M)	HEIGHT (RL)
G	P-Comm	1,531.2	1,531.2	1,301.5	22.7%		1	4.0	4.0	20.0
L1	P-Comm	1,531.2	1,531.2	1,301.5	22.7%		1	3.6	7.6	23.6
L2-5	P-Resi	1,388.4	2,776.7	2,082.5	36.4%		2	6.2	13.8	29.8
L6-7	T-Resi	1,388.4	1,388.4	1,041.3	5.4%		1	3.1	16.9	32.9
Lift Overrun								2.0	18.9	34.9
TOTAL			**7,227.6**	**5,726.9**	**100.0%**	**3.0**	**5.0**	**18.9**	**18.9**	**34.9**

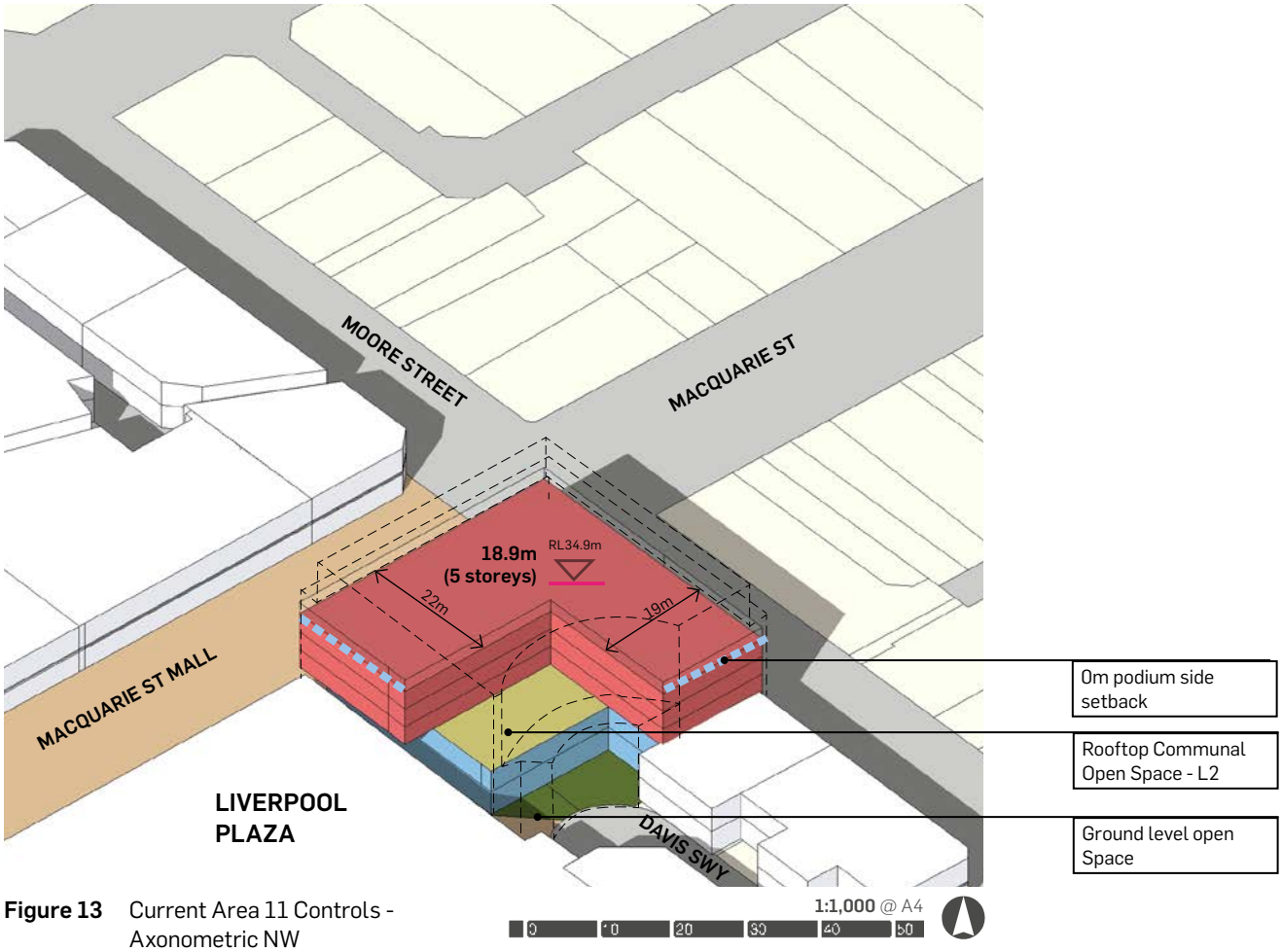


Figure 13 Current Area 11 Controls - Axonometric NW

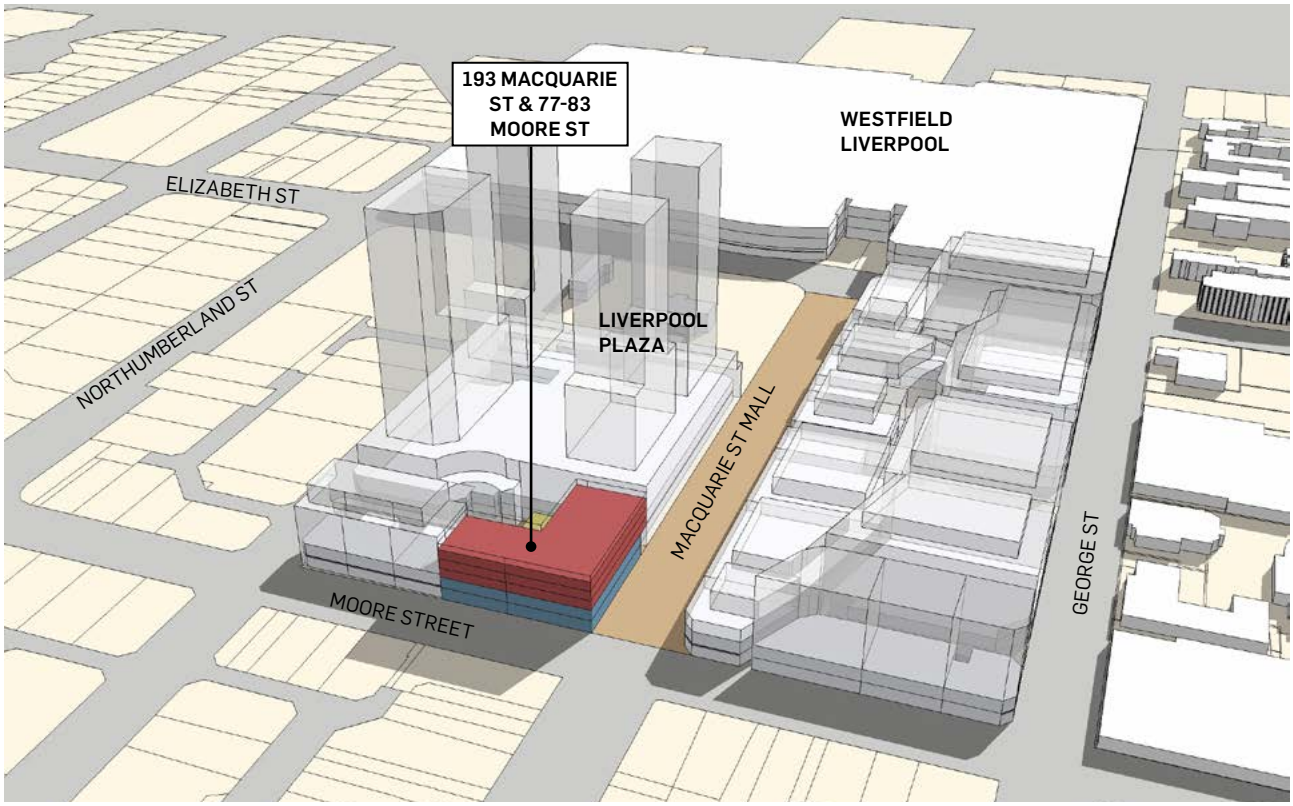


Figure 14 Current Area 11 Controls - Aerial South

SOLAR ACCESS ANALYSIS - AREA 11

The following diagrams identifies the solar access analysis of Current Area 11 Controls Scheme proposed envelope to understand the additional shadow impact to Macquarie Street Mall.

The shadow study has been undertaken between 9AM - 3PM in mid winter with key summary illustrated in the following page.

KEY SUMMARY

- The proposed envelope provides very limited additional impacts to the solar access within Macquarie Street Mall. The public domain still receives a min. 2 hour sunlight in mid winter.

LEGEND

- The Site
- Streetwall Podium Envelope - Residential
- Upper Podium/ Tower Envelope - Residential
- Podium Rooftop Communal Open Space
- Macquarie Street Mall
- Surrounding Built Forms
- Additional Shadow within Macquarie Street Mall from The Proposed Envelope

SOLAR ACCESS ANALYSIS

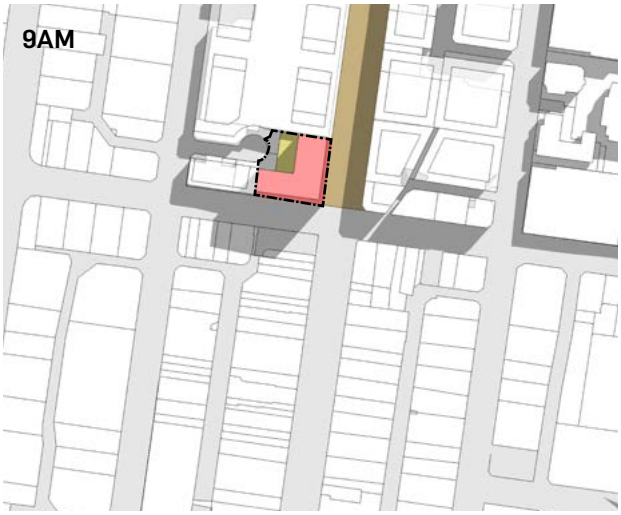
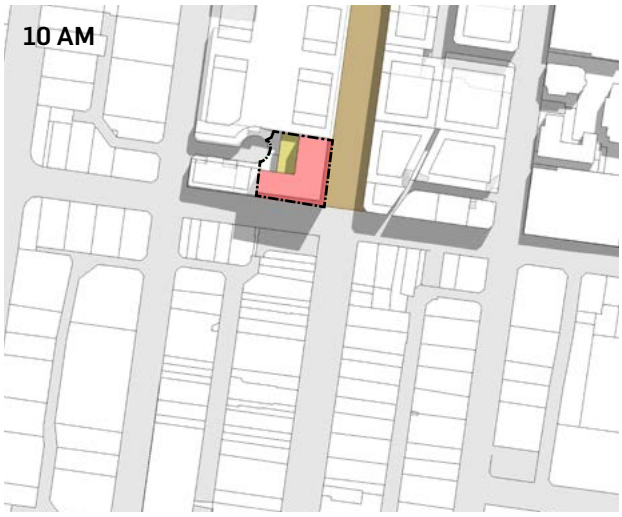
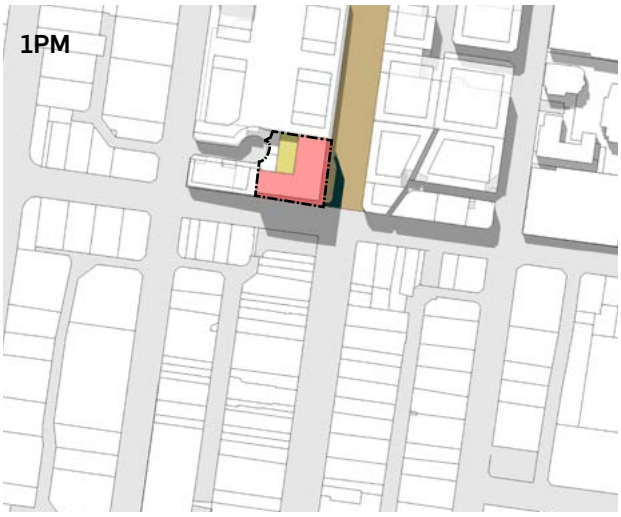
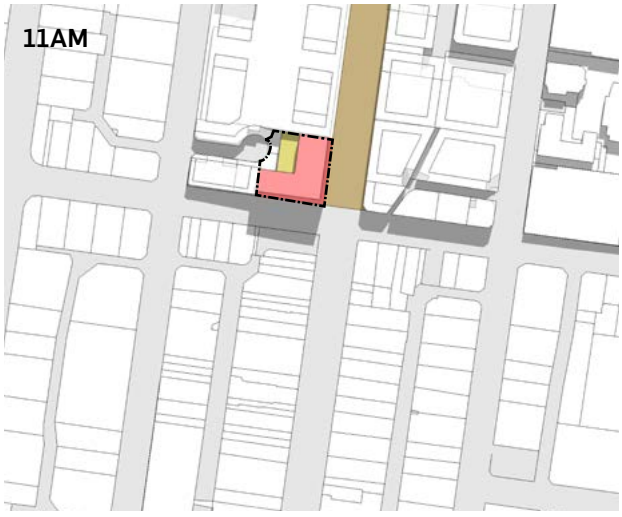
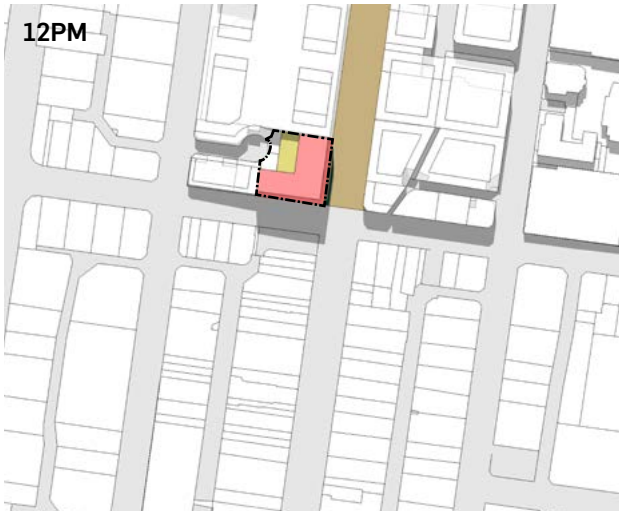


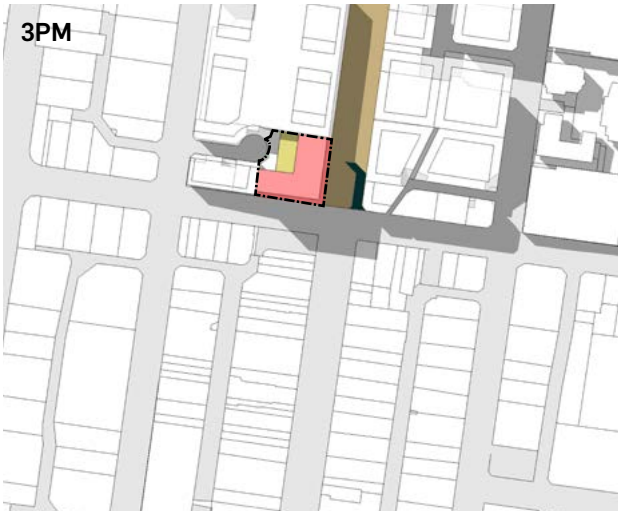
Figure 15 Solar Access Analysis - Area 11 Controls











PROPOSED AREA 8 CONTROLS
BUILT FORM TESTING

OVERVIEW

The potential envelope results in 6-storey podium and 26-storey residential tower form with the maximum height of 103.1m. This achieves the maximum allowable FSR 10:1 and still under the maximum height of RL139.5m.

The north-south orientated residential tower form maximises solar access to future residential units and provide a fast moving shadow that minimises overshadowing impact to the adjoining properties and public domain.

The following diagrams and tables on the following pages illustrates the compliant building envelope study based on the Proposed Area 8 Controls.

KEY SUMMARY:

- The corner podium and tower built form outcomes celebrates the importance of this corner site.

Table 7 Development Outcome - Proposed Area 8 Controls Scheme

	PLANNING CONTROL	DEVELOPMENT OUTCOME
Total Site Area (sqm)		**1,931**
Total FSR (n:1)	**10.0**	**10.0**
Total GFA (sqm)	**19,310**	**19,307**
Min. Commercial GFA (sqm)	**3,862**	**4,518**
Min. Commercial GFA (%)	**20.0%**	**23.4%**
Min. Residential GFA (sqm)	15,448	14,789
Min. Residential GFA (%)	80.0%	76.6%
Max building height (m)	**119.9**	**103.1**
Max building height (RL)	135.9	119.1
Max building height (storeys)		32.0
Communal Open Space Provision (sqm)	482.75	733.29
Communal Open Space Provision (%)	**25%**	**38%**

19,307 SQM.
TOTAL GROSS FLOOR AREA

23.4 %.
COMMERCIAL GFA

10.0:1
FLOOR SPACE RATIO

103.1M/ 32 ST.
BUILDING HEIGHT

Figure 16 Proposed Area 8 Controls Scheme

PROPOSED AREA 8 CONTROLS CONT'D
INDICATIVE BUILDING ENVELOPE

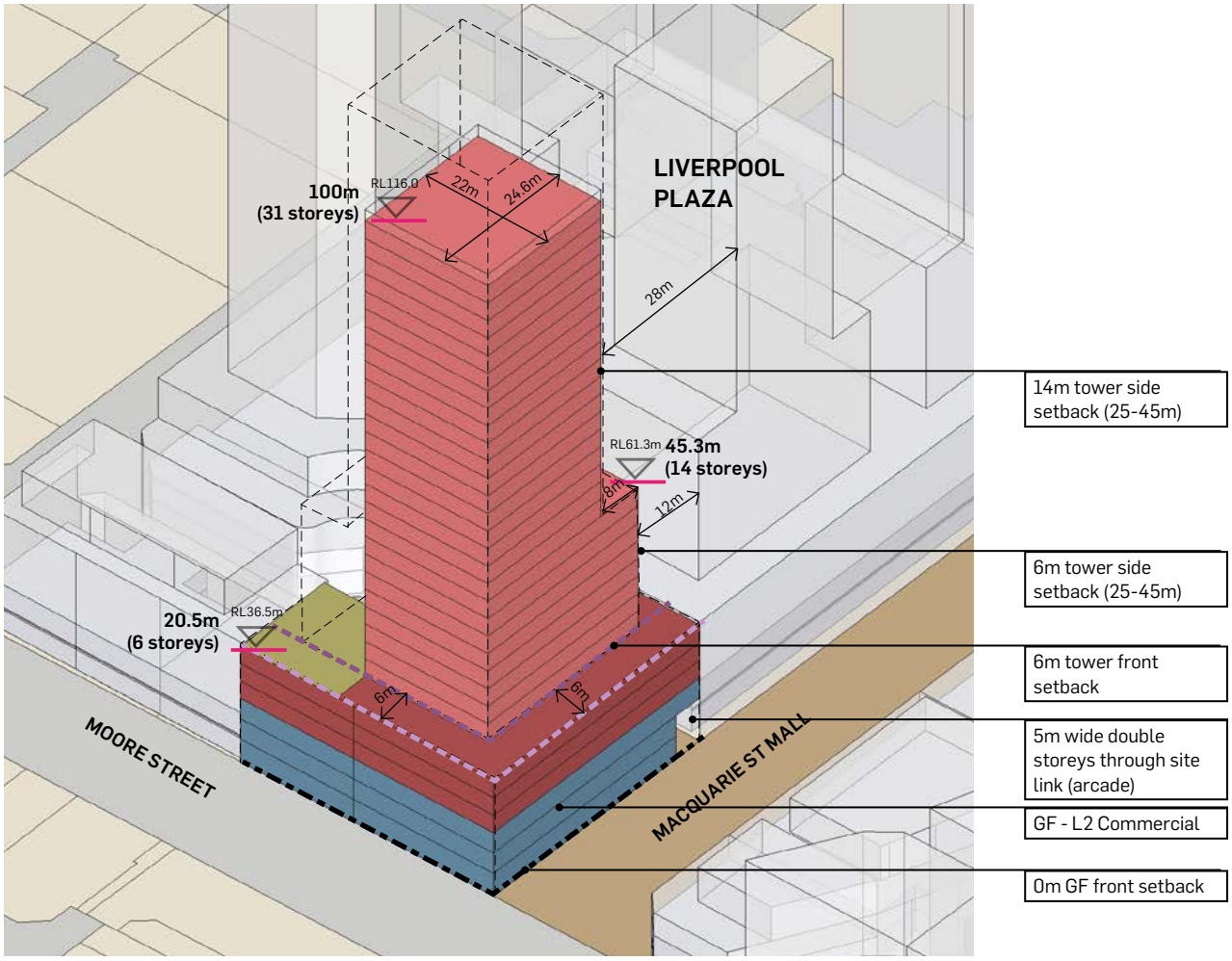


Figure 17 Proposed Area 8 Controls Scheme - Axonometric SE

LEGEND

- Subject Site
- Indicative Envelope - Tower + Podium
- Streetwall Podium Envelope - Commercial
- Streetwall Podium Envelope - Residential
- Upper Podium Envelope - Residential
- Podium Rooftop Communal Open Space
- Through Site Link

SETBACK STRATEGY

- 0m front setback - streetwall
- 6m Tower Front Setback
- 0m Podium Side Setback
- 6m Tower Side Setback (25-45m height)
- 14m Tower Side Setback (>45m height)

Table 8 Development Breakdown - Proposed Area 8 Controls Scheme

LEVEL	USES	FP (SQM)	GBA (SQM)	GFA (SQM)	GFA (%)	FSR	NO. ST.	HEIGHT (M)	CUMU-LATIVE HEIGHT (M)	HEIGHT (RL)
G	P-Comm	1,692.4	1,692.4	1,438.5	7.5%		1	4.0	4.0	20.0
L1	P-Comm	1,692.4	1,692.4	1,438.5	7.5%		1	3.6	7.6	23.6
L2	P-Comm	1,931.0	1,931.0	1,641.4	8.5%		1	3.6	11.2	27.2
L3-5	P-Resi	1,508.9	4,526.8	3,395.1	17.6%		3	9.3	20.5	36.5
L6-13	T-Resi	706.2	5,649.2	4,236.9	21.9%		8	24.8	45.3	61.3
L14-30	T-Resi	530.2	9,542.7	7,157.0	37.1%		18	55.8	101.1	117.1
Lift Over.								2.0	103.1	119.1
TOTAL			**25,034.4**	**19,307.4**	**100.0%**	**10.0**	**32.0**	**103.1**	**103.1**	**119.1**

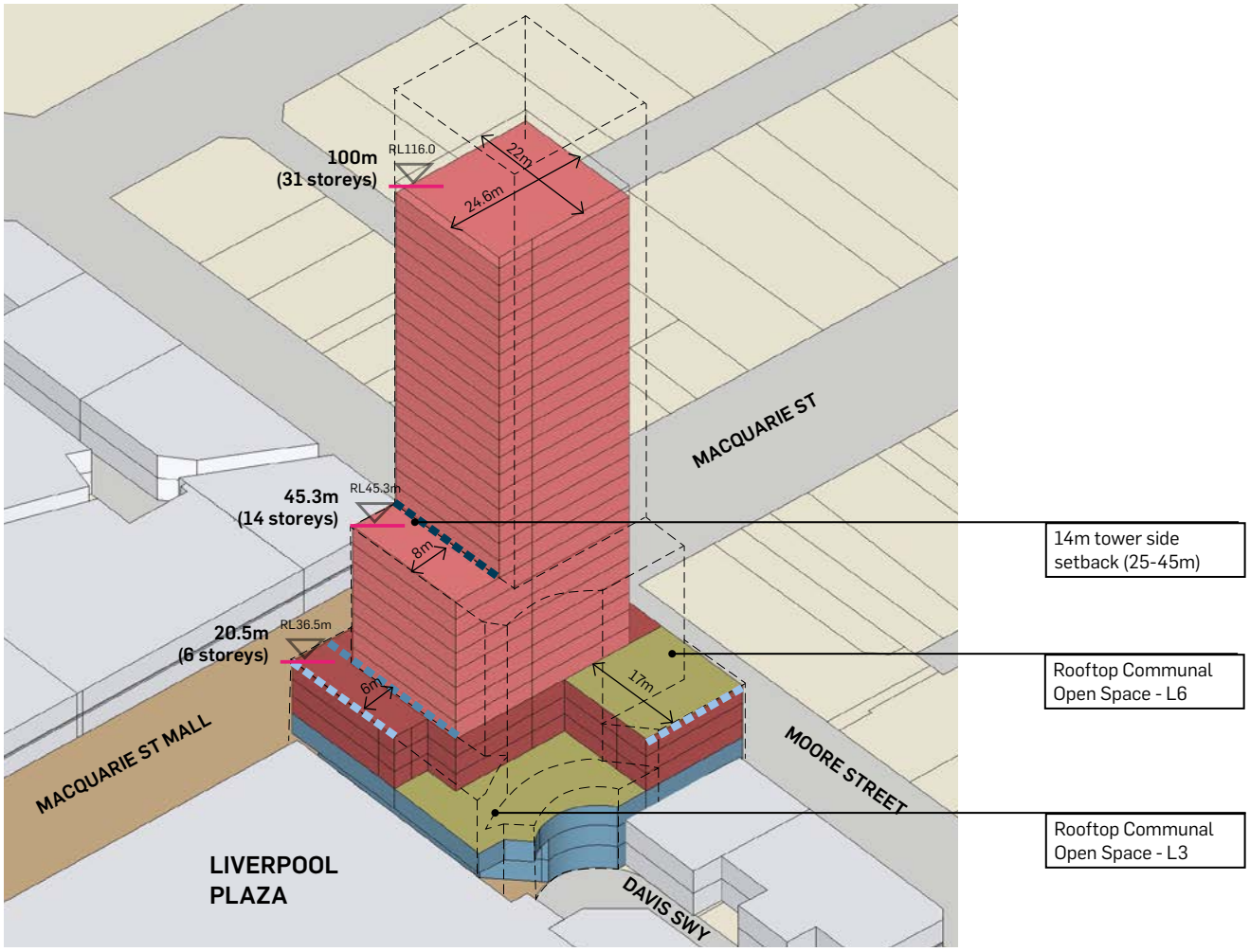


Figure 18 Proposed Area 8 Controls Scheme - Axonometric NW

1:1,000 @ A4

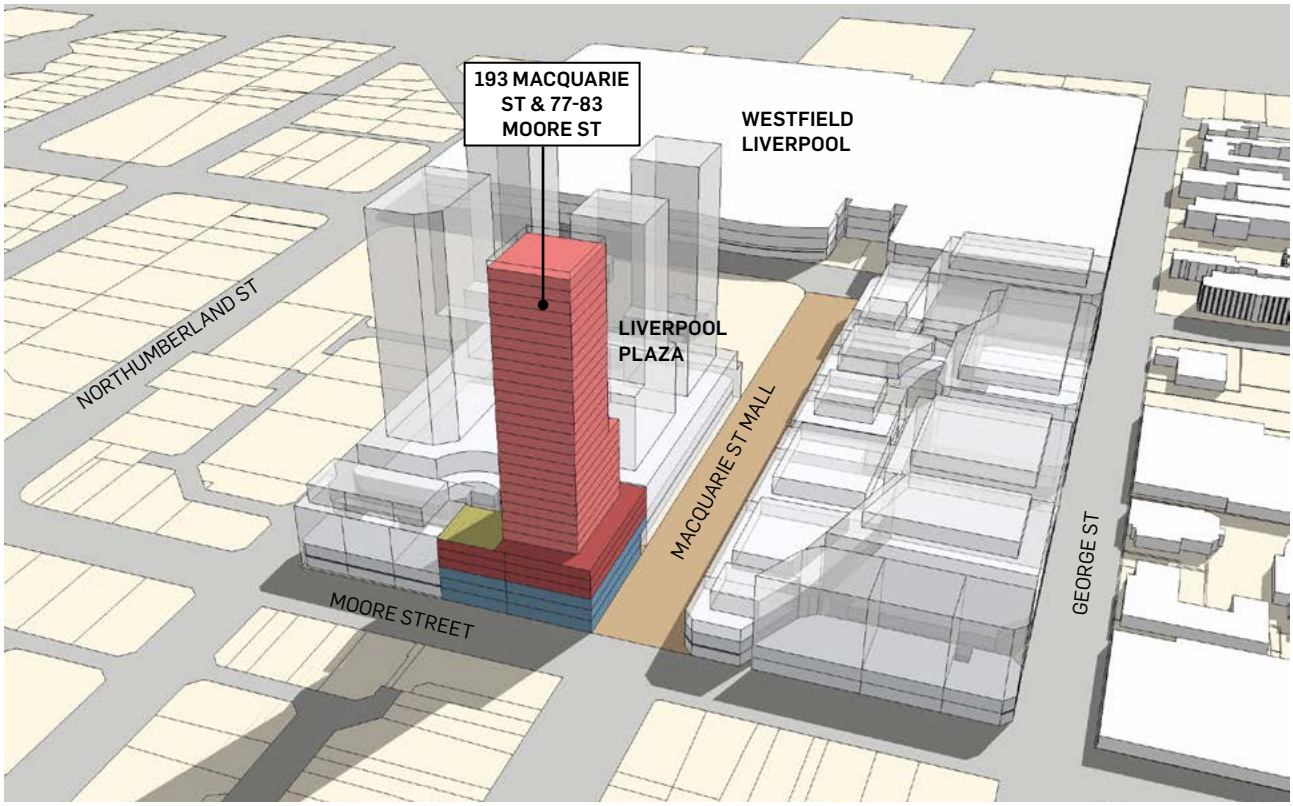


Figure 19 Proposed Area 8 Controls Scheme - Aerial South

SOLAR ACCESS ANALYSIS - AREA 8

The following diagrams identifies the solar access analysis of Area 8 proposed envelope to understand the additional shadow impact to Macquarie Street Mall.

The shadow study has been undertaken between 9AM - 3PM in mid winter with key summary illustrated in the following page.

KEY SUMMARY:

- The proposed envelope provides limited additional shadow impacts to the solar access within Macquarie Street Mall. The public domain still receives a min 2hr. sunlight in mid winter
- The proposed envelope starts impacting Macquarie Street Mall in the afternoon from 1PM - 3PM.

LEGEND

- The Site
- Streetwall Podium Envelope - Residential
- Upper Podium/ Tower Envelope - Residential
- Podium Rooftop Communal Open Space
- Macquarie Street Mall
- Surrounding Built Form
- Additional Shadow within Macquarie Street Mall from The Proposed Envelope

SOLAR ACCESS ANALYSIS

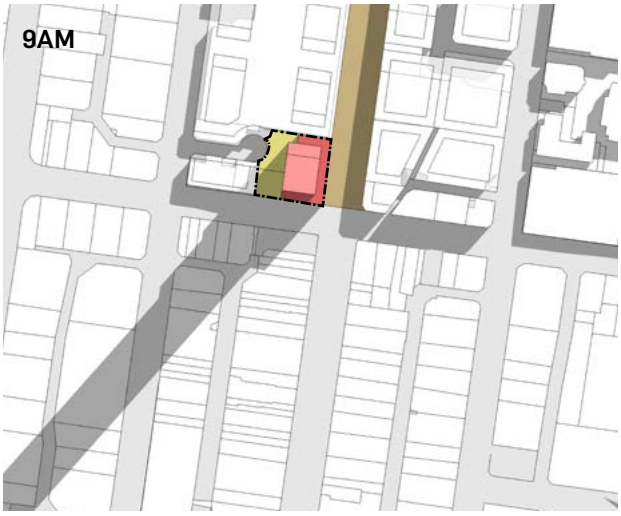
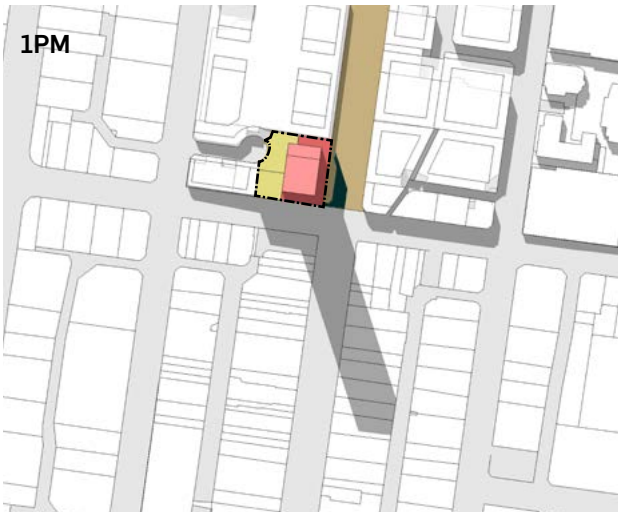
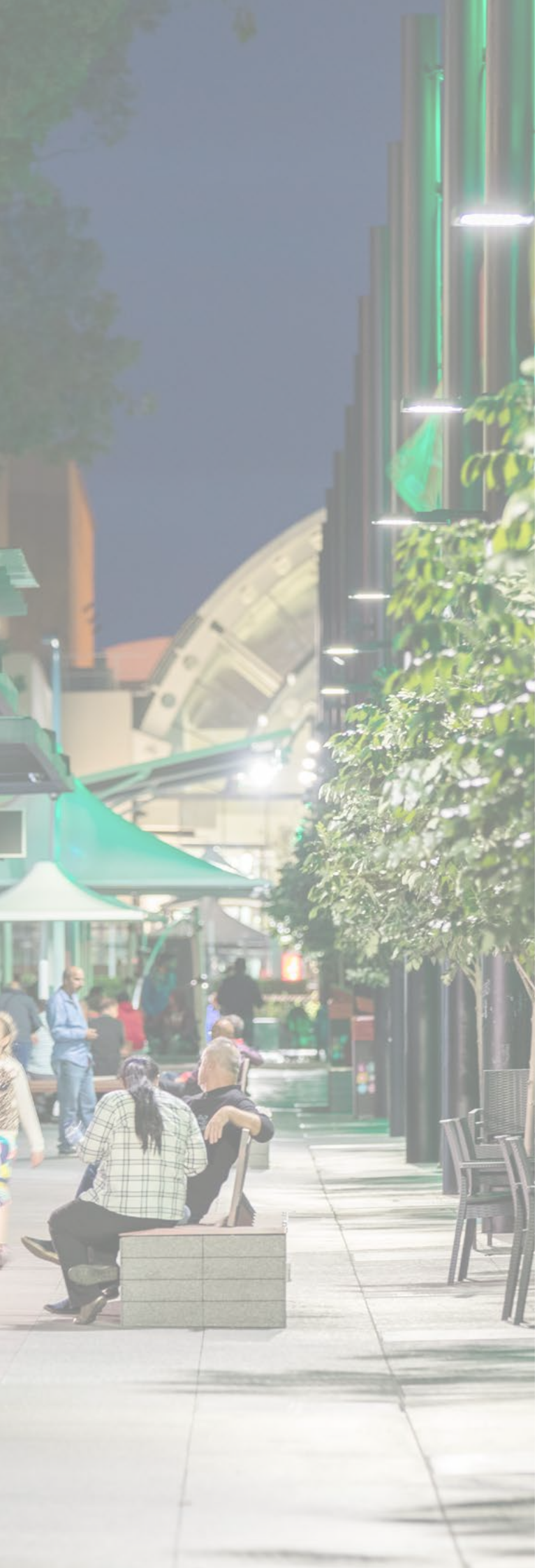


Figure 20 Solar Access Analysis - Proposed Area 8 Controls

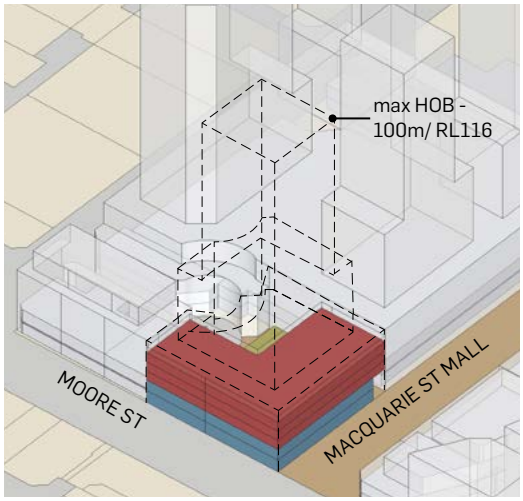
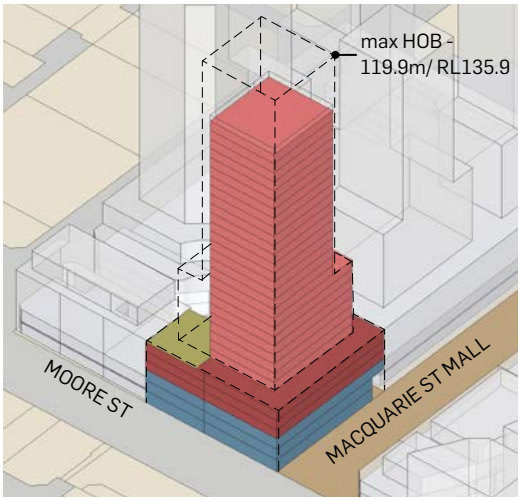




4.0 CONCLUSION

The following section provides the built form testing summary and key findings of this study identified in the following pages.

Table 9 Built Form Testing Summary

	CURRENT AREA 11 CONTROLS	PROPOSED AREA 8 CONTROLS
Indicative 3D massing		

	CURRENT AREA 11 CONTROLS	AREA 11 OUTCOME	PROPOSED AREA 8 CONTROLS	AREA 8 OUTCOME
Total Site Area (sqm)		**1,931.0**		**1,931.0**
Max Permissible FSR (n:1)	**3.0**	**3.0**	**10.0**	**10.0**
Max Permissible GFA (sqm)	**5,793.0**	**5,726.9**	**19,310.0**	**19,307.4**
Commercial GFA	**2,172.4 sqm/ min. 37.5%**	**2,603.1 sqm/ 45.5%**	**3,862 sqm/ min. 20.0%**	**4,518.4 sqm/ 23.4%**
Residential GFA	3,620.6 sqm/ max. 62.5%	3,123.8 sqm/ 54.5%	15,448 sqm/ max. 80.0%	14,789.0 sqm/ 76.6%
Max height of building	**100.0m/ RL115.9**	**18.9m/ RL34.9/ 5 storeys**	**119.9m/ RL135.9**	**103.1m/ RL119.1/ 32 storeys**

PROS	• The proposed envelope provides street activation along Moore Street and Macquarie Street Mall. • 0m podium front setback provides streetwall continuation along Macquarie Street Mall and Moore St.	• The proposed envelope provides street activation along Moore Street and Macquarie Street Mall. • 0m podium front setback provides streetwall continuation along Macquarie Street Mall and Moore St. • Area 8 provides more commercial GFA than Area 11. • The proposed envelope reflects the surrounding future desired character of the precinct. • The tower form on the corner of Moore Street and Macquarie Mall emphasizes the importance of this junction and forms a visual anchor at the south-western bookend of the Mall.
CONS	• Current Area 11 Controls provides less commercial GFA than Area 8 Controls; • Current Area 11 Controls does not emphasize the importance of this junction as well as responding to the future built form character of the surrounding Area 8 controls; and • The proposed envelope is significantly lower than the permissible building height of 100m.	• The 14m upper level northern setback is greater than required by the ADG which results in a smaller floor plate of 530sqm. • Communal open space requirements to consider solar access in accordance with the ADG and future development of Liverpool Plaza.
FURTHER CONSIDERATIONS		• Potential to co-locate ground floor public domain with Liverpool Plaza and accommodate through site linkage to Davis Serviceway. • Potential to co-locate residential amenities being rooftop communal open space with Liverpool Plaza.

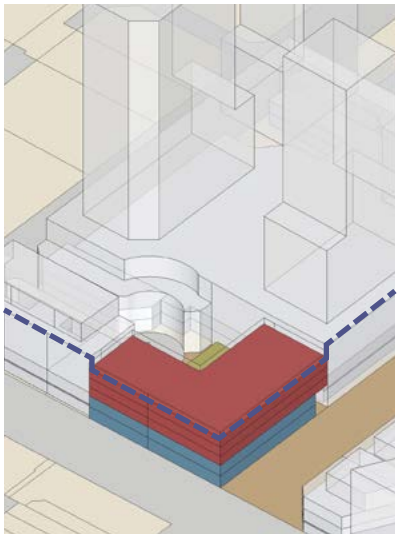
The study concludes the followings:

▲ 1,915 SQM.

INCREASED MIN. COMMERCIAL GFA

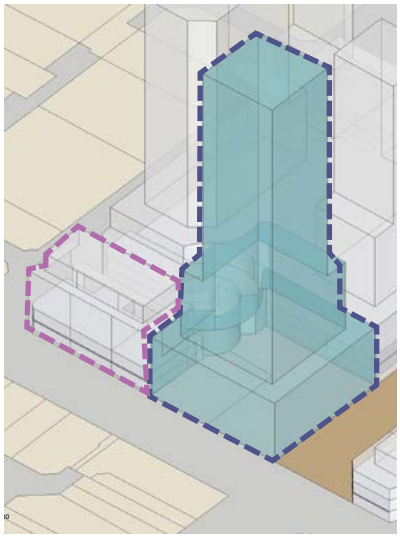
1 NET INCREASE IN COMMERCIAL GFA UNDER PROPOSED AREA 8 CONTROLS

- The Current Area 11 controls testing results in 2,603 sqm/ 45.5% commercial GFA.
- The Proposed Area 8 controls testing results in 4,518 sqm/ 23.4% commercial GFA.
- There is 1,915 sqm increased of commercial GFA between current Area 11 and proposed Area 8 controls. This results in an overall net increase in commercial GFA by relocating the Site from the current Area 11 controls to the proposed Area 8 controls.



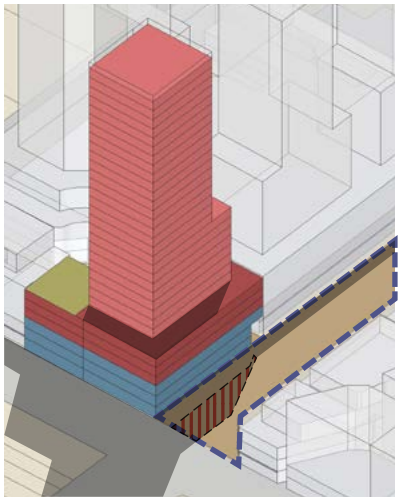
2 THE BUILT FORM DOES NOT REFLECT THE FUTURE DESIRED CHARACTER WITHIN CURRENT AREA 11 CONTROLS

- The subject site is located in the south-western corner of Macquarie Mall and Moore Street which is an important junction within the CBD. A low-rise building in this location will not reflect the future desired character of the area.
- When viewed in the context of surrounding Area 8 which has a significantly higher density control, the site does not reflect its location and opportunity on the corner of a key public domain axis within the city centre.
- The 5-storey streetwall outcome does not align with future six-storey streetwall surrounding built form outcome.



3 THE SITE HAS MORE CAPACITY TO ACCOMMODATE A TOWER FORM IN COMPARISON TO THE ADJOINING SITE

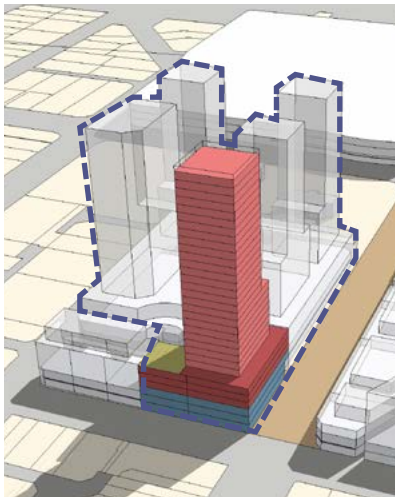
- When adopting Proposed Area 8 Controls, the Site will be able to accommodate a N-S orientated tall slim tower form better than its western neighbouring site.
- The Site has a dimension of approximately 45m x 45m (1,931 sqm). It has more capacity to accommodate a tower built form when compared to the adjoining 87 & 91 Moore Street which has a shorter site depth.
- The adjoining 87 & 91 Moore Street has 21m site depth and sits under Area 8 controls that allows a higher density envelope and a total area of 970 sqm. This site depth will result in a small and narrow floor plate envelope of 12m depth. The potential residential floor plate will have an east-west orientation, creating an additional overshadowing on Moore Street and a suboptimal building floor plate for amenity and efficiency.



4 A TOWER BUILT FORM TO THE SOUTH-WESTERN BOOKEND OF MACQUARIE STREET MALL RESULTS IN LIMITED IMPACTS TO SOLAR ACCESS WITHIN THE PUBLIC DOMAIN

Proposed Area 8 Controls built form testing results in a 6-storey podium with 26-storey residential tower with an optimum north-south lengthwise orientation.

- The proposed podium and tower form provides only a small amount of additional overshadows to the southern end of Macquarie Mall between 1PM to 3PM in mid winter.
- Noting its location within the southern bookend of Macquarie Street Mall, this provides a fast moving shadow that results in the public domain still receiving a min. 2 hr. sunlight in mid winter.



5 AN INTEGRATED DEVELOPMENT OPPORTUNITY WITH LIVERPOOL PLAZA

- The current ownership control of Liverpool Plaza provides an opportunity for an integrated development with the Site.
- Further considerations such as building separation, podium communal open spaces, through-site links and public domain provision will ensure an optimal outcome for all.

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