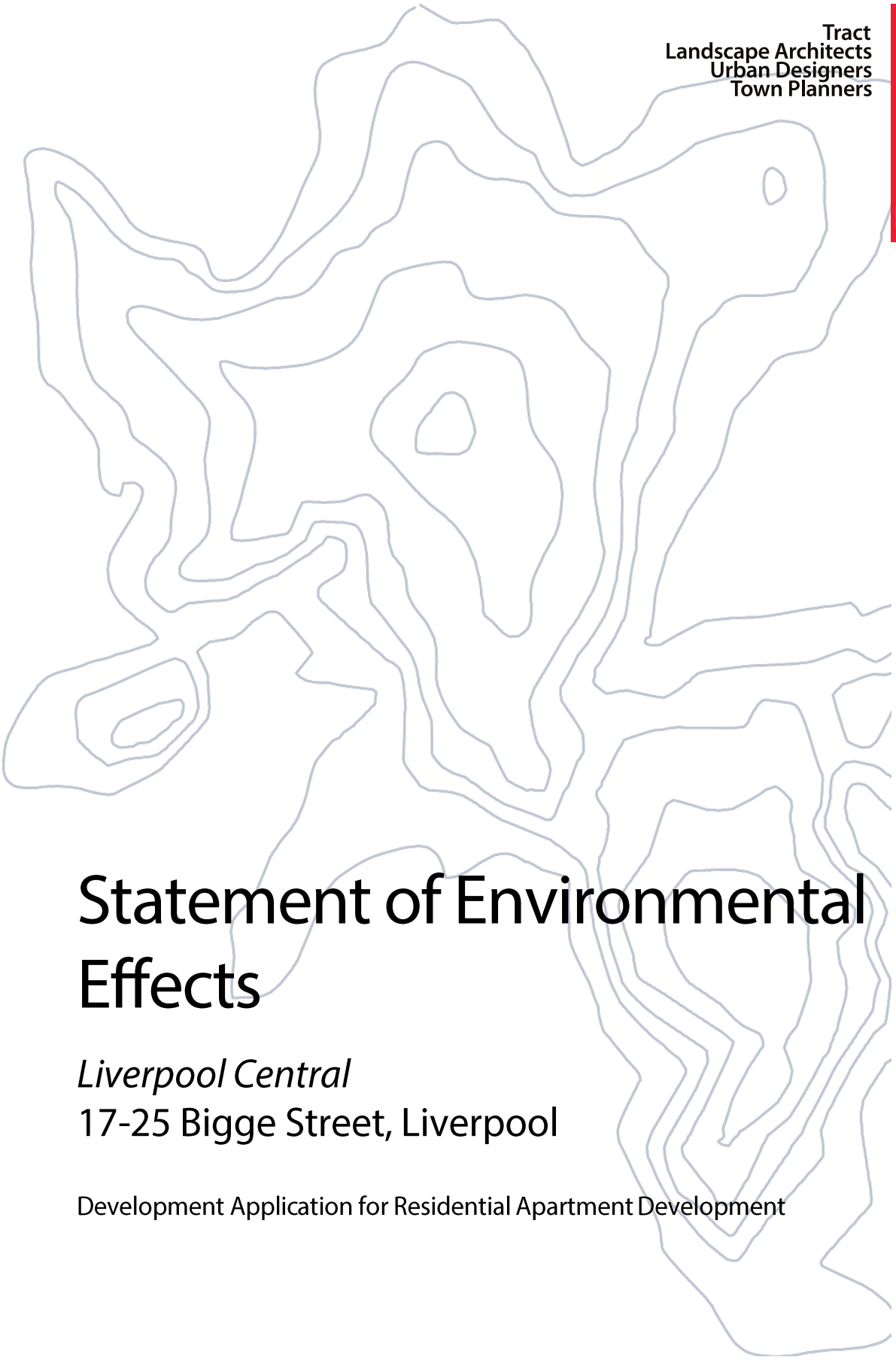
Tract
Landscape Architects
Urban Designers
Town Planners

Tract



Statement of Environmental Effects

Liverpool Central
17-25 Bigge Street, Liverpool

Development Application for Residential Apartment Development

Prepared by Tract Consultants
for CV McNally

31 August 2016

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Executive Summary

Background

Owners	
Address	17-25 Bigge Street, Liverpool
Lot Description	Lot 4 DP 13930 Lot A, B, C & D DP 345161

Relevant Planning Controls

State Planning Policy Framework	State Environmental Planning Policy No. 65 – Design Quality of Residential Apartment Development
Local Planning Policy Framework	Liverpool Local Environmental Plan 2008 Liverpool Development Control Plan 2008
Zone	R4 – High Density Residential

Quality Assurance - Report Record

Project Name	Statement of Environmental Effects
Document Number	
Revision (see below)	B
Prepared By	JF
Reviewed By	GS
Approved By	GS
Date of Issue	31 August 2016

Contents

1 INTRODUCTION

This document has been prepared in order to provide information and a planning assessment in relation to a development application at 17-25 Bigge Street, Liverpool.

The proposal provides for a residential apartment development, pursuant to the provisions of Liverpool Local Environmental Plan 2008 and State Environmental Planning Policy No. 65 – Design Quality of Residential Apartment Development (SEPP 65).

The proposal involves consolidation of five existing lots, demolition of existing structures and construction of two residential flat buildings, comprising a total of two hundred and thirty three (233) dwellings. The development provides a unit mix of 33 x 1 bedroom apartments, 152 x 2 bedroom apartments and 36 x 3 bedroom apartments. The proposal also provides three levels of basement parking with two hundred and sixty five (265) spaces and associated driveway and landscaping.

17-23 Bigge Street is currently developed with single storey dwellings, associated parking, landscaping and vegetation, while 25 Bigge Street comprises an existing villa development, with four single storey dwellings and associated parking.

The site provides a total site area of 5,715.8m^2.

In preparation of this submission, consideration has been given to the following planning documents:

- *The Environmental Planning and Assessment Act, 1979;*
- *The Environmental Planning and Assessment Regulation;*
- *State Environmental Planning Policy No 65 – Design Quality of Residential Apartment Development;*
- *Liverpool Local Environmental Plan 2008; and*
- *Liverpool Development Control Plan 2008.*

The proposal is permissible with consent, pursuant to the provisions of Liverpool Local Environmental Plan 2008 and complies with the requirements of State Environmental Planning Policy No. 65 – Design Quality of Residential Apartment Development, as well as demonstrating compliance with the design quality principles of the Apartment Design Guide.

The proposal succeeds when assessed against the heads of consideration pursuant to s79C of the *Environmental Planning and Assessment Act, 1979* and is appropriate for the granting of consent.

The following reports have been prepared in support of this development application and are attached as annexures:

Annexure 1: Survey Plan

Annexure 2: Architecture Plans and Design Reports prepared by Rothelowman dated 25 February

Annexure 3: 4.6 Variation prepared by Tract Consultants dated 25 February 2016

Annexure 4: Arborist Assessment prepared by NSW Tree Services dated 25 February 2016

Annexure 5: Traffic and Parking Assessment prepared by TEF Consulting dated 25 February 2016

Annexure 6: Acoustic Report prepared by Koikas Acoustics dated 17 February 2016

Annexure 7: Waste Management Plan prepared by Bigfoot Elephant Consulting dated X

Annexure 8: Wind Report prepared by Windtech Consultants dated 25 February 2016

Annexure 9: Stage 1 Environmental Site Assessment prepared by EIS dated 5 February 2016

Annexure 10: Heritage Impact Statement prepared by Colin Brady dated February 2016

Annexure 11: BCA Assessment Report prepared by Blackett Maguire and Goldsmith dated February 2016

Annexure 12: OSD and Erosion Sediment Control Plan prepared by Erbas dated 25 February 2016

Annexure 13: Geotechnical Report prepared by JK Geotechnics dated 26 January 2016

Annexure 14: Access Report prepared by Accessible Building Solutions dated 12 February 2016

Annexure 15: Landscaping Plan prepared by Site Design Studios dated 23 February 2016

2 SITE ANALYSIS

2.1 The Site

The subject site comprises five separate allotments, identified as Lot 4 DP 13930 and Lots A, B, C and D in DP 345161 with a total area of 5,715.8m^2. The site is an irregular shaped allotment with boundary dimensions of 75.59 metres at the eastern boundary, 75.355 at the western boundary, 84.66 metres fragmented at the northern boundary and 82.31 metres at the southern boundary. A survey plan is provided and marked **Annexure 1.**

The site is located on the western side of Bigge Street, between Lachlan Street to the north and Campbell Street to the south. A location plan is provided and marked **Figure 1**.

The site is currently developed with eight (8) dwellings and each lot comprises the following:

- 17 Bigge Street, Lot 4 DP 13930 – Single storey fibro dwelling with a corrugated iron roof, and an associated driveway;
- 19 Bigge Street, Lot A DP 345161 – Single fibro dwelling with tiled roof, fibro shed, iron shed, associated driveway and path and a single tree located in the front setback;
- 21 Bigge Street, Lot B DP 345161 – Single fibro dwelling with tiled roof, fibro shed with tiled roof, iron she, associated driveway and path and a single tree in the front setback and 1 in the rear;
- 23 Bigge Street, Lot C DP 345161 – Single brick dwelling with tiled roof, two brick sheds, iron shed, associated driveway and pathways, a single tree located in the front setback and 5 to the rear; and
- 25 Bigge Street, Lot D DP 345161 – Four brick villas with tiled roofs, associated hardstand and landscaping.

The site benefits from a street frontage of 75.59metres to Bigge Street at the east and provides a reasonable level parcel of land, with a fall of around 1.42 metres from north to south.

The site is currently adjoined by a six storey residential apartment development at its southern boundary, as well as townhouse development, with street access from Tindall Avenue in the south. The rear of the site is adjoined by several developments, which are accessed via George Street, to the west, and comprise a 6- 8 storey residential apartment building, as well as an undeveloped site featuring an older style 2 storey residential apartment building, as well as a single storey dwelling.

On the northern boundary, the site is adjoined by a 7 storey residential apartment building to the rear, with a further development approved for a 14 storey and a 9 storey residential apartment development on the corner of Bigge and Lachlan Street, comprising 13-15 Bigge Street and 4-6 Lachlan Street respectively.

Sydney Southwest Private Hospital and South Western Surgical Centre are directly opposite the site to the east.

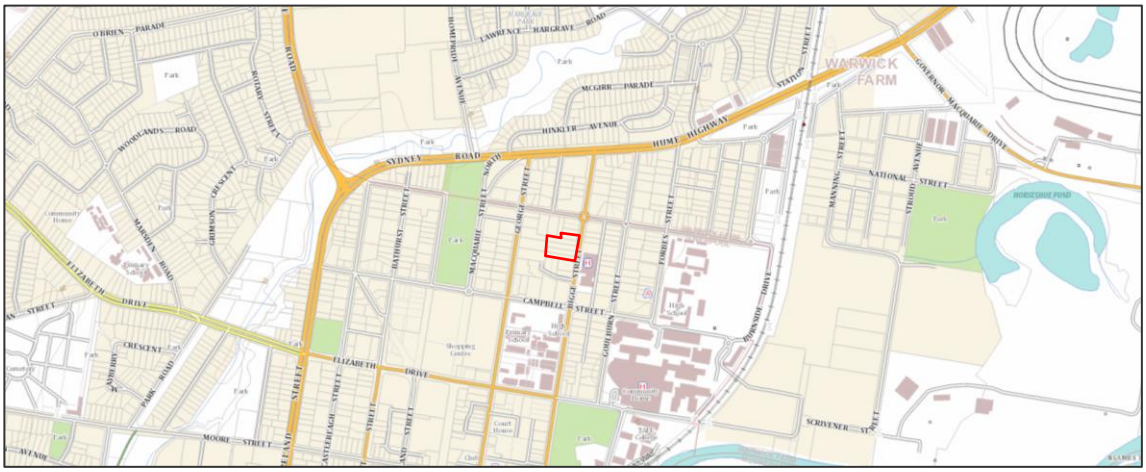


Figure 1: Location Plan (Source: SIX Maps)

Various utility services are present at the sites eastern boundary including; a substation, telegraph poles and wiring, street trees and landscaping works as depicted in **Figure 2.**

Figure 2: Aerial Photograph (Source: SIX Maps)

2.2 The Locality

The site is located in Liverpool City Centre, in an area of land zoned for mixed use, high density residential and commercial core purposes. Liverpool Town Centre is located immediately to the south of the site comprising a range of uses including office towers, schools, hospitals, shopping and retail malls and commercial premises.

Land to the east comprises Sydney Southwest Private Hospital, Liverpool Girls High School and Liverpool Hospital. Further east on the eastern side of the railway line, comprises large scale industrial premises.

Land generally located to the west comprises a mix of residential and commercial land, while development to the north is primary being redeveloped for high rise residential apartment development.

The site is located within Liverpool Town Centre approximately 700 metres to the north of Liverpool Station, 260 metres to the south of the Hume Highway and 250 metres to the east of

Liverpool Pioneer Memorial Park. The site is well catered for by a range of commercial, educational and recreational services.

The locality demonstrates a combination of built forms, with buildings ranging from single storey dwellings to 16 storey apartment buildings built to the street alignment that comprises two and four lane roads. The built form is largely characterised by large scale modern commercial and residential developments.

The site provides excellent access to local services with Westfield located only 325 metres walking distance to the south east of the site. In addition, the site provides pedestrian access to Liverpool and Warwick Farm Stations and several bus stops located within 100 metres of the site.

The Hume Highway is located to the north and South Western Motorway to the south.

The subject site is located approximately 3.1 kilometres to the west of Chipping Norton, 2.6 kilometres to the south of Cabramatta and approximately 1.5 kilometres to the north of Moorebank Industrial Precinct.

A series of photographs depicting the site and locality are provided and marked **Figures 3 - 11**.

Figure 3: View of existing development at 17 and 19 Bigge Street, looking west from Bigge Street

Figure 4: View of existing development at 21 and 23 Bigge Street, looing west from Bigge Street

Figure 5: View of existing development at 25 Bigge Street and depicting adjoining development at 27-29 Bigge Street

Figure 6: View of Sydney Southwest Private Hospital, located opposite subject on eastern side of Bigge Street

Figure 7: View of existing development, located on the northern side of Lachlan Street

Figure 8: View of development adjoining to the north of the subject site and located on the southern side of Lachlan Street

Figure 9: View of exiting development to the south of the subject site and located north of Tindall Avenue

Figure 10: View of existing development to the north of the subject site, located on the western side of Bigge Street and viewed from Hume Highway

Figure 11: View of development adjoining the subject site to the rear, with frontage to George Street

3 HISTORY

There have been three meetings held prior to the submission of this Development Application. These meetings were identified as:

1. **Pre-DA Meeting** – 15 June 2015 with CV McNally, Tract Consultants, Rothelowman and Liverpool City Council Staff
2. **Pre-DA Meeting** – 11 November 2015 with CV McNally, Tract Consultants, Rothelowman, Site Design Studios, TEF Consulting, Erbas and Liverpool City Council Staff
3. **Design Excellence Review Panel**– 10 December 2015 with CV McNally, Rothelowman and Liverpool City Council Staff

Additionally, there have been three (3) meetings held with Council post DA lodgement:

1. **Post DA Lodgement Meetings with Assessing Officer (x3)** – CV McNally, Rothelowman, Tract Consultants and Liverpool City Council Development Assessment Officer.

3.1 Pre-DA Meeting – 15 June 2015

The first formal Pre-DA meeting was held with Council on 15 June 2015 with the intention to seek comment from Council's planning and design team. The following issues were raised:

a) *Any additional height should be shifted to Tower A towards Bigge Street. This is to minimise apparent density by creating a clear skyline along the street and reinforce the importance of the street as the main public domain.*

Comment: The design has been amended to shift the original building height from Tower B to Tower A, which results in a non-compliant height on the subject site of approximately 6.7 metres. The preferred massing is on the Bigge Street frontage, which has the least impact on overshadowing in relation to developments to the south and west.

The height has also been designed to relate to the width of the frontage and reinforces the prominence of the buildings relationship to the street frontage and public domain.

b) *Advised to remove turning circle as it detracts from open space and the shape*

Comment: The vehicle turning circle has been removed and all vehicular access to the site is made available via the driveway entrance to the basement car parking, located on the southern boundary.

c) *Bin holding room near dwellings not ideal, would prefer pickup from within basement levels*

Comment: The bin holding room and waste collection area near the dwellings on the southern boundary of Tower A have been relocated to the basement parking levels. The result has left a large portion of the ground floor of Building A as a void. The design has been altered to provides for the inclusion of additional GFA in this space, so that the building frontage remains strong across the length of the Bigge Street boundary.

Consequently there is now a non-compliance with FSR controls to an amount of 7.8%. Although the relocation of the bin holding area has been relocated to the basement, and the move has

resulted in additional floor area, which has created a non-compliance, the result is positive for the street, the residents and the movement of garbage trucks to and from the site.

All garbage collection will now occur in the basement and the substation has been relocate away from the ground floor and the outcome is a better result than a complying development with garbage storage at the ground level.

3.2 Pre-DA Meeting – 11 November 2015

The second Pre-DA meeting was carried out with Council on 11 November 2015, which addressed the developed design, further to action of Council's feedback from the first pre-DA. The meeting addressed a number of issues relating to the design including:

a) *A set back of 6 metres from the north side is essential as the 8 Storey Land and Environment Court approved building to the north is only 3.5 metres from the boundary and has habitable rooms and balconies facing the southern boundary.*

Comment: A set back of 5.99 metres has been introduced at Tower A on the northern boundary to minimise the impact of the Land an Environment Court approved building at 4-6 Lachlan Street. This ensures set backs are adequately introduced on an already constrained site.

3.3 Design Excellent Review Panel – 10 December 2015

The Design Excellence Advisory Panel made the following comments in relation to the proposed development:

a) The applicant demonstrated how a successful outcome could be achieved on the isolated site at 17 Bigge Street either as part of this proposed development if the applicant was able to purchase the site and as a standalone development if the site was not amalgamated.

The Panel recommended the following:

a) *The trees on the adjacent site should be protected and larger trees provided to the side boundaries than those shown on the landscape plan.*

Comment: As shown in the drawings prepared by Rothelowman at TP01.04, larger trees have been provided on all side. This provides a combination of visual screening and soft landscaping toward adjoining developments.

b) *The driveway should be located under the building and the side of the driveway be landscaped*

Comment: The driveway entry and exit length has been reduced to minimise area of hardstand driveway area and encourage greater landscaping initiatives along the southern boundary and in the communal landscaping area. The driveway is now setback approximately 8.3 metres from the southern boundary, which comprises landscaping and open space area.

c) *In addition, there should be pockets of significant planting at a scale that reflects the scale of the buildings*

Comment: Pockets of significant planting have been implemented and are now proposed throughout the site in the communal open space areas, rear boundaries and boundary corners, as depicted within the submitted landscape plans.

d) *That the applicant makes the case as to why solar access cannot be met because of Land and Environment Court Approval on 13-15 Bigge Street*

Comment: Solar access achieved on 70.4% of the development, above the 70% stated in ADG. As discussed, Land and Environment Court Approval on 13-15 Bigge Street have resulted in the subject development being significantly constrained in respect of solar access. As a result of design refinement, the development is able to adequately address solar compliance,

The panel noted that:

- *The architects have undertaken significant work in relation to the adjoining isolated site and the over shadowing caused by the approved development on 13-15 Bigge Street*
- *The courtyard has good dimensions*
- *The quality of the documents, precedents and aesthetics is commended.*

Comment: In our view, the proposed development satisfies the provisions of the ADG by establishing a residential apartment development of high quality form, generous open space, detailed attention to landscaping works and a high level of urban amenity. The development also satisfies the strategic objectives of land in the Liverpool Town Centre.

3.4 Post DA Lodgement Items and Discussion with Council

Council issued the Applicant a letter dated 4 July in relation to a number of items that needed to be addressed in order for the application to proceed. These issues related to:

- Building Height and Floor Space Ratio variations;
- Building separation;
- Private Open Space;
- Solar Access and Natural Ventilation;
- Universal Design;
- Car Parking; and
- DA Objections (Tree removal).

Through a number of constructive meetings with the assessing officer on 14/7/16, 25/7/16 and 15/18/16, the proposal has been amended to provide the following design improvements:

1. Provision of additional 3 bedroom apartments (originally 18, now 36) to enhance housing diversity in the city centre;
2. 10% of 3 bedrooms will be located within the compliant building height as required by the DCP;
3. Reduce floor space ratio variation from 3.33:1 (11%) to 3.24:1 (7.8%);
4. Level 12 has been reduced in size and pulled back to the north, south and west;
5. High level windows provided on northern and southern boundaries on both towers to increase natural cross ventilation;
6. External louvres added to Tower B to improve cross ventilation;
7. New core area introduced in the southern portion of Tower B to provide greater access to the building;
8. Screening introduced to balconies B104, B105, B304, B305, B404, B405, B804, B805 to improve privacy in relation to 20-22 George Street;
9. Clarification to balcony and room sizes to ensure compliance with ADG; and
10. Amend the basement parking layout to provide firestair and lift to service new core at Tower B and increase OSD.

These design improvements are supported by additional diagrams and plans to demonstrate the amendments satisfy Council's concerns.

4 PROPOSED DEVELOPMENT

4.1 Proposal

The proposal involves consolidation of five existing lots, demolition of existing structures and construction of two residential flat buildings, comprising a total of two hundred and twenty one (221) dwellings. The development provides a unit mix of 33 x 1 bedroom apartments, 152 x 2 bedroom apartments and 36 x 3 bedroom apartments. The proposal also provides three levels of basement parking with two hundred and sixty five (265) spaces and associated driveway and landscaping.

The proposal involves construction of two residential apartment buildings. Tower A consists of twelve floors, while Tower B consists of nine floors. Tower A is configured at the front of the site along the eastern boundary facing Bigge Street, while Tower B is set back towards the rear, approximately 20 metres from the Bigge Street boundary.

The proposal involves the construction of a driveway, with access from Bigge Street, located toward the southern boundary of the site. The driveway will provide two-way vehicular access to a ramp located toward the southern boundary and providing access to three (3) levels of basement car parking, capable of accommodating 265 vehicles. The first level of basement parking provides 86 car spaces, the second level provides 116 car spaces and the third floor 63 car spaces.

The basements comprise bin rooms, apartment storage, motorcycle parking, wash bays, lift and stair access for both apartments and associated utility infrastructure.

In the Pre-DA discussion with Council dated 11 November 2015 it was advised to relocate the substation and garbage collection area to the basement. The basement design has been amended to ensure all garbage and waste collection occurs within the basement. Furthermore, the substation has been relocated south of the driveway entrance. The amended design enhances the residential amenity of the development by relocating waste collection and utility services away from away from residential zones.

The proposal also involves landscaping works including trees and plants in the internal pathways, central open space square along with associated landscaping works around all the site boundaries. This includes a number of concept generators including communal amenity in the form of BBQ and seating areas, bench seating, ornamental trees, raised planters with varying depth to allow for large canopy trees, alfresco areas with built in benches and 2.7 metre high pergola along the path to the lobbies.

Proposed architecture drawings are provided and marked **Annexure 2.**

A breakdown of dwelling types is provided and marked **Table 1** and **2**.

Residential Tower A			
Level	**1 Bedroom**	**2 Bedroom**	**3 Bedroom**
Ground	4	6	0
Level 1	5	9	0
Level 2	5	9	0
Level 3	2	9	0

Level 4	2	9	0
Level 5	2	9	0
Level 6	2	9	0
Level 7	2	9	0
Level 8	0	8	2
Level 9	0	8	2
Level 10	0	8	2
Level 11	0	0	7
Level 12	0	1	5
Unit Total	**24**	**94**	**18**
Residential Total			**136**

Residential Tower B			
Level	**1 Bedroom**	**2 Bedroom**	**3 Bedroom**
Ground	0	5	4
Level 1	1	6	3
Level 2	1	6	3
Level 3	1	5	2
Level 4	1	6	1
Level 5	1	6	1
Level 6	1	6	1
Level 7	1	6	1
Level 8	1	6	1
Level 9	1	6	1
Unit Total	**9**	**58**	**18**
Residential Total			**85**

4.1.1 Landscaping Design Excellence

The proposed development provides a large communal open space courtyard, located between Tower A and B in the centre of the site. The landscape design provides design excellence in landscape architecture and is based on place making principles to create a space that connects people within the residential community.

Key features of the open space design include, but are not limited to:

- Outdoor alfresco area with BBQ's, fixed and flexible seating, outdoor table tennis, kids play area and numerous seating areas;
- Planter boxes designed of different materials, steps and heights to create a park-like experience;
- Planter boxes cantilever of pedestrian paths with opportunity for LED strip lighting to accentuate the floating of the planter boxes;
- Pedestrian pathways with high quality stone pavements with feature segments;
- Ample built in seating to provide nooks within the landscape;
- Planting incorporates canopy trees, palms, native and exotic in an informal arrangement.

The following statement is taken from SiteDesign Studios in relation to the landscape design of the development:

'The landscape is not a transient space but more magnetic to attract the residents to use as part of their living and outdoor activities. The park like arrangement is design excellence at its best'

5 STATUTORY PLANNING FRAMEWORK

5.1 Environmental Planning and Assessment Act 1979

Section 79C of the Act provides that a consent authority shall take the following matters into consideration in determining a development application:

"(a) the provisions of:
(i) any environmental planning instrument, and
(ii) any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the Secretary has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved), and
(iii) any development control plan, and
(iiia) any planning agreement that has been entered into under section 93F, or any draft planning agreement that a developer has offered to enter into under section 93F, and
(iv) the regulations (to the extent that they prescribe matters for the purposes of this paragraph), and
(v) any coastal zone management plan (within the meaning of the Coastal Protection Act 1979),
that apply to the land to which the development application relates,

(b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality,
(c) the suitability of the site for the development,
(d) any submissions made in accordance with this Act or the regulations,
(e) the public interest.

5.2 Applicable Planning Controls

The applicable planning controls addressed within this Section include:

- *State Environmental Planning Policy No 65 – Design Quality of Residential Apartment Development*
- *Liverpool Local Environmental Plan 2008; and*
- *Liverpool Development Control Plan 2008.*

5.3 State Environmental Planning Policy No 65 – Design Quality of Residential Apartment Development

The application of SEPP 65 is made pursuant to the subject development comprising the erection of two new residential apartment buildings, comprises a total of 10 and 13 storeys and consists of 221 dwellings.

State Environmental Planning Policy No 65 – Design Quality of Residential Apartment Development (SEPP 65) aims to improve the design quality of residential apartment

development in New South Wales by promoting better built form and aesthetics of buildings and of the streetscapes and public spaces they define.

In July 2015 the SEPP was amended and provides a number of significant changes. Specifically, it now provides Clause 6A, which ensures that a Council's Development Control Plan (DCP) cannot be inconsistent with the Apartment Design Guide.

> ***6A Development control plans cannot be inconsistent with Apartment Design Guide***
> *(1) This clause applies in respect of the objectives, design criteria and design guidance set out in Parts 3 and 4 of the Apartment Design Guide for the following:*
> *(a) visual privacy,*
> *(b) solar and daylight access,*
> *(c) common circulation and spaces,*
> *(d) apartment size and layout,*
> *(e) ceiling heights,*
> *(f) private open space and balconies,*
> *(g) natural ventilation,*
> *(h) storage.*
> *(2) If a development control plan contains provisions that specify requirements, standards or controls in relation to a matter to which this clause applies, those provisions are of no effect.*
> *(3) This clause applies regardless of when the development control plan was made.*

The SEPP provides that the Apartment Design Guide will prevail over any local DCP control. This has resulted in the Apartment Design Guide having more power to be enforced than the Residential Flat Design Code previously had, which was seen by some Council's only as a guide, which could be overruled by the local DCP.

5.3.1 Application

SEPP 65 applies to a development for the purposes of a residential flat building, shop top housing or mixed use development with residential accommodation if:

> *(a) the development consists of any of the following:*
> *(i) the erection of a new building,*
> *(ii) the substantial redevelopment or the substantial refurbishment of an existing building,*
> *(iii) the conversion of an existing building, and*
> *(b) the building concerned is at least 3 or more storeys (not including levels below ground level (existing) or levels that are less than 1.2 metres above ground level (existing) that provide for car parking), and*
> *(c) the building concerned contains at least 4 or more dwellings.*

5.3.2 Compliance with Apartment Design Guide

The Apartment Design Guide is a document to be read in conjunction with SEPP 65, which provides an integrated approach for assessing the quality and design of apartments:

> *SEPP 65 refers to some parts of the Apartment Design Guide that must be applied when assessing development applications. Objectives, design criteria and design guidance in Parts 3 and 4 of this Apartment Design Guide that are referred to in SEPP 65 will prevail over any inconsistent DCP control. Parts 3 and 4 set out objectives, design criteria and design guidance for the siting, design and amenity of residential apartment development.*

Therefore, development needs to demonstrate how it meets the objective and design criteria. The design criteria sets clear and measurable benchmarks for how the objective can be

practically achieve. If the criteria cannot be satisfied, proposals should demonstrate what other design responses are used to achieve the object. The design guidance can be used to assist this.

Standard	Proposed Development	Comments	Compliance
PART 1: IDENTIFYING THE CONTEXT			
1A Apartment Building Types	Tower apartments are typically more than nine storeys and best used when: • located in dense urban areas • other towers exist in the surrounding context an area requires greater density than can be delivered by perimeter block buildings • a strong vertical form or landmark is desired	The development proposes two tower apartments both nine and twelves storeys in height. The development is located in the heart of Liverpool CBD. A dense urban area comprising residential apartments, towers and commercial/office development, as well as providing a strategic framework to encourage further development of this type.	✓
1B Local Character + Context	Considerations for residential apartment development in strategic centres include complex relationships with adjacent buildings, impact of taller building types, privacy between commercial and residential uses, parking demand, high site coverage, limited deep soil, reliance on quality public streets and places and overshadowing.	Site and local context analysis has been provided. The development is located in Liverpool. A strategic centre pursuant to Sydney's A Plan for Growing Sydney. Priorities of this strategic centre are to: • Work with council to retain a commercial core in Liverpool, as required, for long-term employment growth. • Work with council to provide capacity for additional mixed-use development in Liverpool including offices, retail, services and housing.	✓
1C Precincts and Individual Sites	An individual site is a single lot or an amalgamation of several lots that can support individual or groups of residential flat buildings.	The proposed development comprises five separate allotments, identified as Lot 4 DP 13930 and Lot A, B, C, D DP 345161.	✓

Standard	Proposed Development	Comments	Compliance
	The size, shape and orientation of individual sites directly inform the possible building types and development capacity.	The amalgamation of the site has facilitated the sitting, orientation and density capacity for the proposed development.	

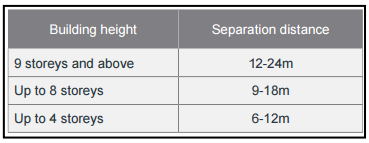
Table 1: ADG Part 1 Compliance Table

Standard	Proposed Development	Comments	Compliance
PART 2: DEVELOPING THE CONTROLS			
2A Primary Controls	Primary development controls are the key planning tool used to manage the scale of development so that it relates to the context and desired future character of an area and manages impacts on surrounding development.	Noted. The site is subject to the design criteria controls stipulated in ADG and the local controls set out in LLEP 2008 and LDCP 2008. The primary controls influencing the built outcome on the site include setbacks, building separation, solar access. These site controls have been addressed to ensure the development provides a high quality residential outcome for the area with enhanced amenity, generous private open space, prominent landscaping design and massing the development to have minimal solar impact on the adjoining development.	✓
2B Building Envelopes	A building envelope is a three dimensional volume that defines the outermost part of a site that the building can occupy. Building envelopes set the appropriate scale of future development in terms of bulk and height relative to the streetscape, public and private open spaces, and block and lot sizes in a particular location.	The development has been designed in consideration of adjoining residential development (existing and approved), surrounding density, streetscape, solar access, views and privacy. The development seeks to provide defined open space areas and ensure a proportionate balance between height, bulk and scale.	✓

Standard	Proposed Development	Comments	Compliance
2C Building Height	Height controls should be informed by decisions about daylight and solar access, roof design and use, wind protection, residential amenity and in response to landform and heritage.	Tower A consists of thirteen levels approximately 41.76 metres in height, while Tower B consists of ten levels approximately 32.2 metres in height. The building of Tower A exceeds the height provisions outlined in LLEP 2008. However, the proposed building height variation is a result of design considerations discussed with Council at the pre-DA meeting of 8 July 2015. The original design presented to Council at the first formal pre-DA meeting, proposed two buildings, both able to comply with building height controls. The design was altered to allow a portion of the GFA from the rear building to be transferred to the front building, in order to reduce the solar impacts on adjoining development to the south. The amended design is suitable and responsive to the generous site, surrounding development and future character of Liverpool. The additional height also contributes towards the provision of 3 bedroom units, which will provide superior housing choice and product offering for the city centre. A Clause 4.6 variation has been submitted with this application to justify the non-compliance. Development on the northern, southern and western boundaries comprise	x

Standard	Proposed Development	Comments	Compliance
		of residential apartments ranging from 6 to 14 storeys, which complements the proposed developments scale.	
2D Floor Space Ratio	Floor space ratio (FSR) is the relationship of the total gross floor area (GFA) of a building relative to the total site area it is built on. It indicates the intended density. FSR is a widely used method for estimating the development potential of a site.	The development provides a total GFA of 18,492.8m^2 The subject site provides a total area of 5,715.8m^2 The resultant FSR is = 3.24:1 The proposed GFA exceeds the provisions stipulated in LLEP 2008, by 1,345.3m^2 or 7.8%. All additional FSR is contributed to the provision of 3 bedroom apartments with a total of 16.3% within the development, where normally only 10% is required in accordance with the DPC. A Clause 4.6 variation has been submitted to support the non-compliance. A copy is attached and marked **Annexure 3**	×
2E Building Depth	Building depth influences building circulation and configuration and has a direct relationship to internal residential amenity by determining room depths, which in turn influences access to light and air	The proposed development provides 72.4% solar compliance. For cautionary purposes, we have considered the Land and Environment Court approved development at 2 Lachlan Street, which we note has not been acted on over 10 years. With this constructed, the development provides 68.8% solar compliance The proposed building has been designed in consideration of adjoining apartment dwellings and to allow an appropriate built form that does not impact on privacy, overlooking, allow for an efficient use of natural ventilation and minimises	✓

Standard	Proposed Development	Comments	Compliance
		overshadowing. The Land and Environment Court Approved development at 2 Lachlan Street has resulted in significant constraints of the site, particularly in relation to achieving a solar compliant scheme. This development has not been built in 10 years. As shown in the architecture plans, a compliant development at 2 Lachlan Street would have enabled the development to achieve solar compliance of 72.4%. Natural cross ventilation has been achieved through implementation of high level windows on the northern and southern facades of both towers, as well as louvres installed in Tower B.	
2F Building Separation	Building separation is the distance measured between building envelopes or buildings. Separation between buildings contributes to the urban form of an area and the amenity within apartments and open space areas. • ensure that new development is scaled to support the desired future character with appropriate massing and spaces between buildings • assist in providing residential amenity including visual and acoustic privacy, natural ventilation, sunlight and daylight access and outlook • provide suitable areas for communal open spaces, deep soil zones and landscaping.	The ADG provides that *"Where applying separation to buildings on adjoining sites, apply half the minimum separation measured from the exterior edge of the circulation space."* The ADG also states no building separation is required where building types incorporate blank party walls. Please see drawings for building separation with adjoining developments. The proposal development satisfies building separation requirements in all instances, except within the following units, located on the western boundary within Tower B: B104, B105, B304, B305, B404, B405, B804, B805.	✓

Standard	Proposed Development	Comments	Compliance
		In the instances identified above, screening will be implemented to ensure there are no visual privacy impacts associated with the proposed building separation plans at these unit locations. The ADG is a guide to inform good quality apartment development. We consider that strict adherence of the design criteria should not be applied in all instances, as the owner has endeavoured to establish high quality built form on site recognised as having significant site constraints. Separation is achieved for all other units and boundaries of the development, through implementation of party walls and appropriate setback distances. Plans have been amended to introduce high level windows on blank party walls. This is to ensure the development achieves natural cross ventilation. We also consider high level windows are unable to result in privacy impacts associated with overlooking from adjoining developments. The proposal also provides substantial private open space and deep soil zones. Please see Acoustic Report provided and marked **Annexure 6**.	
2G Street Setbacks	Street setbacks establish the alignment of buildings along the street frontage, spatially defining the width of the street. Combined with building height and road reservation,	The development provides a frontage of 61.3 metres along Bigge Street, which provides a more solid and compact urban form in than the surrounding residential	✓

Building height	Separation distance
9 storeys and above	12-24m
Up to 8 storeys	9-18m
Up to 4 storeys	6-12m

Standard	Proposed Development	Comments	Compliance
	street setbacks define the proportion and scale of the street and contribute to the character of the public domain. Determine street setback controls relative to the desired streetscape and building forms, for example: • establish the desired spatial proportions of the street and define the street edge • provide space that can contribute to the landscape character of the street where desired • create a threshold by providing a clear transition between the public and private realms • assist in achieving visual privacy to apartments from the street • create good quality entries to lobbies, foyers or individual dwellings • promote passive surveillance and outlook to the street.	development. The setback frontage provides a well-defined and bold delineation between the street and the built form and applies appropriate height and building depth controls to create a defined density that is generally in line with the frontage of adjoining apartments. The proposed development will implement landscaping, trees and planting to maintain adequate privacy screening along all site boundaries. The development will provide a 4.5-5 metre landscape setback from Bigge Street. In addition, the development will create access to individual dwellings from Bigge Street and create a well-defined central lobby, which is set back further from the street. The site is not located on a corner.	
2H Side and Rear Setbacks	Setbacks vary according to the building's context and type. Larger setbacks can be expected in suburban contexts in comparison to higher density urban settings. • provide access to light, air and outlook for neighbouring properties and future buildings • provide for adequate privacy between neighbouring apartments • retain or create a rhythm or pattern of spaces between buildings that define and add character to the streetscape • achieve setbacks that	The development has the following minimum setbacks: • 4.5-5 metre landscaped front setback from Bigge Street • 3.6 metre southern setback • 5.9 metre northern setback • 4.929 metre rear setback The setbacks respond to adequate separation, site characteristics and adjoining properties. The northern and southern setbacks establish a desired continuous street wall that clearly defines the buildings solid form.	✓

Standard	Proposed Development	Comments	Compliance
	maximise deep soil areas, retain existing landscaping and support mature vegetation consolidated across sites • manage a transition between sites or areas with different development controls such as height and land use.	Visual screening will be adopted where appropriate to minimise any impacts related to overshadowing and privacy.	

Table 2: ADG Part 2 Compliance Table

Standard	Proposed Development	Comments	Compliance
PART 3: SITING THE DEVELOPMENT			
3A **Site Analysis**	Site analysis is an important part of the design process and should be undertaken at the outset of a project to inform the design principles. Development proposals need to illustrate that design decisions are based on careful analysis of the site conditions and relationship to the surrounding context.	Site Analysis Provided.	✓
3B **Orientation**	Orientation is the position of a building and its internal spaces in relation to its site, the street, the subdivision and neighbouring buildings. Designing the site layout to maximise northern orientation is an important consideration, but it must be balanced with: • responding to desired streetscape character • promoting amenity for both the proposed development and neighbouring properties • providing for the enjoyment of significant views • retaining trees and locating open spaces	The development has been designed to provide a defined street frontage and access from Bigge Street. Tower A is oriented to the east, while part of Tower B is oriented to the north, which optimises solar access within the development. Given the east west orientation of the site, overshadowing to the residential development on the southern boundary cannot be avoided. It is not anticipated this will however, impact on the minimum three hours of sunlight between 9am and 5pm on 21 to June to one living room or 50% of private open space.	✓

Standard	Proposed Development	Comments	Compliance
	• responding to the topography and contextual constraints such as overshadowing and noise.		
3C Public Domain Interface	Key components to consider when designing the interface include entries, private terraces or balconies, fences and walls, changes in level, services locations and planting. The design of these elements can influence the real or perceived safety and security of residents, opportunities for social interaction and the identity of the development when viewed from the public domain.	The proposal provides an appropriate transition between public and private domains. Ground level units are provided with direct access and front gardens, planting and trees allow for a permeable interface. Planting is provided along the front setback to soften the interface between public and private domains. Landscaping is provided on all boundaries. The buildings are carefully designed to distinguish the pedestrian entrance into each lobby, and separate unit access by emphasising different sized entrances, design materials and finishes of the main entrance. The front units facing onto Bigge Street are slightly elevated, which establishes passive surveillance and minimises concealment opportunities. The development provides pump rooms, utility infrastructure and waste storage in the basement parking areas. Please see Waste Management Plan provided and marked **Annexure 7.**	✓
3D Communal and Public Open Spaces	Communal open space has a minimum area equal to 25% of the site Developments achieve a minimum of 50% direct sunlight to the principal usable part of the communal open space for a minimum of	The proposal satisfies the minimum 25% area of communal open space. The proposal provides a communal open space area greater than 25%. The development provides site coverage of 47%, most of	✓

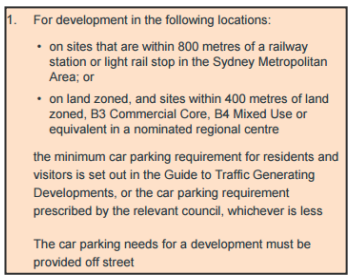
<table>
<tr><th>Standard</th><th>Proposed Development</th><th>Comments</th><th>Compliance</th></tr>
<tr><td></td><td>2 hours between 9 am and 3 pm on 21 June (mid-winter)</td><td>unbuilt area will be provided in the form of communal open space and landscaping.

Communal open space is consolidated into a well-defined square within the development site, providing equal access and common circulation to both Tower A and B respectively.</td><td></td></tr>
<tr><td>3E
Deep Soil Zones</td><td>Deep soil zones are areas of soil not covered by buildings or structures within a development. They exclude basement car parks, services, swimming pools, tennis courts and impervious surfaces including car parks, driveways and roof areas.

<table><tr><th>Site area</th><th>Minimum dimensions</th><th>Deep soil zone (% of site area)</th></tr><tr><td>less than 650m²</td><td>-</td><td rowspan="4">7%</td></tr><tr><td>650m² - 1,500m²</td><td>3m</td></tr><tr><td>greater than 1,500m²</td><td>6m</td></tr><tr><td>greater than 1,500m² with significant existing tree cover</td><td>6m</td></tr></table></td><td>Deep soil landscaping can be achieved on 20% of the site and exceeds the requirement of the ADG.</td><td>✓</td></tr>
<tr><td>3F
Visual Privacy</td><td>Visual privacy balances site and context specific design solutions with views, outlook, ventilation and solar access. The adjacent context, site configuration, topography, the scale of the development and the apartment layout all need to be considered.

<table><tr><th>Building height</th><th>Habitable rooms and balconies</th><th>Non-habitable rooms</th></tr><tr><td>up to 12m (4 storeys)</td><td>6m</td><td>3m</td></tr><tr><td>up to 25m (5-8 storeys)</td><td>9m</td><td>4.5m</td></tr><tr><td>over 25m (9+ storeys)</td><td>12m</td><td>6m</td></tr></table></td><td>The development has addressed visual privacy through a series of design interventions including:
High level windows will be implemented to minimise potential overlooking and privacy impacts onto the adjoining property at 4-7 Lachlan Street
Hedge planting and vegetation will be provided to the courtyards of ground floor units to provide enclosed private open space and permeable transition between public and private domains.
Separation distance complies with the minimum dimensions.</td><td>✓</td></tr>
</table>

Standard	Proposed Development	Comments	Compliance
		Tower A and B exceed the permitted setbacks and separation permitted.	
3G Pedestrian Access and Entries	Good pedestrian access delivers high quality, equitable, safe and pleasant walking environments along the street, into the development and to individual apartments. Pedestrian access and entries must be priorities over vehicle access. Access, entries and pathways are accessible and easy to identify Building entries and pedestrian access connects to and addresses the public domain. Large sites provide pedestrian links for access to streets and connection to destinations	The various pathways located internally provide safe, identifiable and usable spaces that are complimented by the tower configurations, which open up the site for more communal space. Plans have been amended to introduce a new common core area within Tower B. This will enhance access to units within the building and provide more accessible paths of travel within the development. The site provides clearly defined and separated entry points to and from Bigge Street. This mitigates vehicular, cycle and pedestrian conflict by encouraging use of the designated access points. Fire egress is by way of Fire isolated stairs designed in a scissor configuration, accessible on all levels of each building	✓
3H Vehicle Access	The location, type and design of vehicle access points have significant impacts on the streetscape, the site layout and the building facade design. It is important that vehicle access is integrated with site planning from an early stage to balance any potential conflicts with traffic patterns, streetscape elements and safe pedestrian access.	The pedestrian and vehicle entry points are clearly distinguished and defined as part of the building. The driveway is 6 metres wide and has been located towards the sites southern boundary to clearly delineate between pedestrian and vehicle access. The ramp to the basement parking is located behind the building line and is recessed into the site, providing minimal aesthetic impact. Bins, waste and associated trash is located in the basement parking levels.	✓

Standard	Proposed Development	Comments	Compliance
		Please see Waste Management Plan provided and marked **Annexure 7.**	
3J Bicycle and Carparking	Integrating car parking within apartment buildings has a significant impact on site planning, landscape and building design. On site parking can be located underground, above ground within a structure or at grade.  1. For development in the following locations: • on sites that are within 800 metres of a railway station or light rail stop in the Sydney Metropolitan Area; or • on land zoned, and sites within 400 metres of land zoned, B3 Commercial Core, B4 Mixed Use or equivalent in a nominated regional centre the minimum car parking requirement for residents and visitors is set out in the Guide to Traffic Generating Developments, or the car parking requirement prescribed by the relevant council, whichever is less The car parking needs for a development must be provided off street	See Traffic and Parking Assessment prepared by TEF Consulting dated 25 February 2016 attached at **Annexure 5**. The proposal provides a total of 265 car spaces over three levels (243 residential and 22 visitor spaces). **Liverpool DCP Requirements** Breakdown of spaces are provided as follows: • 33 x 1bedroom apartments (1 space) = 33 spaces • 152 x 2 bedroom apartments (1 space) = 152 spaces • 36 x 3 bedroom apartments (1.5 spaces) = 54 spaces Total parking requirement 239 spaces. For guest parking the following is applied: 1 space per 10 units or part thereof: • 221 ÷ 10 = 21 spaces 239 + 21 = 260 spaces Development provides 265 spaces. A service area for a Medium Rigid Vehicle or up to 2 utes/vans/SRVs is provided, which also serves as a car wash bay. An additional service vehicle space has been allocated on basement 1 at Council's request. The proposed development is	

Standard	Proposed Development	Comments	Compliance
		fully compliant with motor cycle and bicycle parking.	

Table 3: ADG Part 3 Compliance Table

Standard	Proposed Development	Comments	Compliance
PART 4: DESIGNING THE BUILDING			
4A Solar and Daylight Access	Solar and daylight access are important for apartment buildings, reducing the reliance on artificial lighting and heating, improving energy efficiency and residential amenity through pleasant conditions to live and work *Objective 4A-1* To optimise the number of apartments receiving sunlight to habitable rooms, primary windows and private open space *Design criteria* 1. Living rooms and private open spaces of at least 70% of apartments in a building receive a minimum of 2 hours direct sunlight between 9 am and 3 pm at mid winter in the Sydney Metropolitan Area and in the Newcastle and Wollongong local government areas 2. In all other areas, living rooms and private open spaces of at least 70% of apartments in a building receive a minimum of 3 hours direct sunlight between 9 am and 3 pm at mid winter 3. A maximum of 15% of apartments in a building receive no direct sunlight between 9 am and 3 pm at mid winter	The proposed development has been orientated to maximise the northern aspect and to minimise the number of south facing units, as shown in the design for Tower B. The site is constrained by already developed apartments on its northern, eastern, western and southern boundaries respectively. The orientation of development responds to site context, surrounding apartments, configuration and optimises direct sunlight into habitable rooms and balconies. The proposed development provides 72.4% solar compliance. For cautionary purposes, we have considered the Land and Environment Court approved development at 2 Lachlan Street, which we note has not been acted on over 10 years. With this constructed, the development provides 68.8% solar compliance As discussed earlier, the Land and Environment Court Approved development at 2 Lachlan Street has resulted in significant constraints of the site, particularly in relation to achieving a solar compliant scheme.	✓
4B Natural Ventilation	Natural cross ventilation is achieved by apartments	The development proposes a number of measures to	✓

<table>
<tr><th>Standard</th><th>Proposed Development</th><th>Comments</th><th>Compliance</th></tr>
<tr><td></td><td>having more than one aspect with direct exposure to the prevailing winds, or windows located in significantly different pressure regions, rather than relying on purely wind driven air. Apartment layout and building depth have a close relationship with the ability of an apartment to be naturally ventilated. Generally as the building gets deeper, effective airflow reduces.

<table><tr><th colspan="2">Design criteria</th></tr><tr><td>1.</td><td>At least 60% of apartments are naturally cross ventilated in the first nine storeys of the building. Apartments at ten storeys or greater are deemed to be cross ventilated only if any enclosure of the balconies at these levels allows adequate natural ventilation and cannot be fully enclosed</td></tr><tr><td>2.</td><td>Overall depth of a cross-over or cross-through apartment does not exceed 18m, measured glass line to glass line</td></tr></table></td><td>achieve natural cross ventilation, these include:
• Orientation of buildings and adequate building separation between both towers facilitates higher cross winds into units;
• Window and balcony openings will be operable by occupants;
• Dual aspect apartments in Tower B;
• Operable louvres to regulate ventilation; and
• High level windows introduced on the northern and southern facades of both towers.

The proposed development will provide 60% of units with adequate cross ventilation.</td><td></td></tr>
<tr><td>4C Ceiling Heights</td><td>Ceiling height is measured internally from finished floor level to finished ceiling level. The height of a ceiling contributes to amenity within an apartment and the perception of space. Well designed and appropriately defined ceilings can create spatial interest and hierarchy in apartments.

<table><tr><th colspan="2">Minimum ceiling height
for apartment and mixed use buildings</th></tr><tr><td>Habitable rooms</td><td>2.7m</td></tr><tr><td>Non-habitable</td><td>2.4m</td></tr><tr><td>For 2 storey apartments</td><td>2.7m for main living area floor
2.4m for second floor, where its area does not exceed 50% of the apartment area</td></tr><tr><td>Attic spaces</td><td>1.8m at edge of room with a 30 degree minimum ceiling slope</td></tr><tr><td>If located in mixed used areas</td><td>3.3m for ground and first floor to promote future flexibility of use</td></tr></table></td><td>The development only proposes single storey apartment units, each with a minimum ceiling height of 2.7 metres for habitable rooms and 2.4 metres for non-habitable rooms.

The depth and ceiling height of each apartment are proportionate and directly influences natural ventilation and daylight access.

Ground level and first floor apartments will have increased floor to floor heights.</td><td>✓</td></tr>
<tr><td>4D Apartment Size and Layout</td><td>The layout of an apartment establishes the way rooms of different functions are arranged and located, the size of the rooms, the circulation between rooms and the degree of privacy for each room.</td><td>The development proposes a mix of 1, 2 and 3 bedroom units.

16.2% of the development's unit stock is dedicated as 3 bedroom units. This will improve housing choice and diversity in the area and significantly exceeds to</td><td>✓</td></tr>
</table>

Standard	Proposed Development	Comments	Compliance

Design criteria

1. Apartments are required to have the following minimum internal areas:

Apartment type	Minimum internal area
Studio	35m²
1 bedroom	50m²
2 bedroom	70m²
3 bedroom	90m²

The minimum internal areas include only one bathroom. Additional bathrooms increase the minimum internal area by 5m² each

A fourth bedroom and further additional bedrooms increase the minimum internal area by 12m² each

2. Every habitable room must have a window in an external wall with a total minimum glass area of not less than 10% of the floor area of the room. Daylight and air may not be borrowed from other rooms

minimum requirement of 3 bedroom units to provide.

All of the apartment sizes provide the minimum internal areas stated within the ADG.

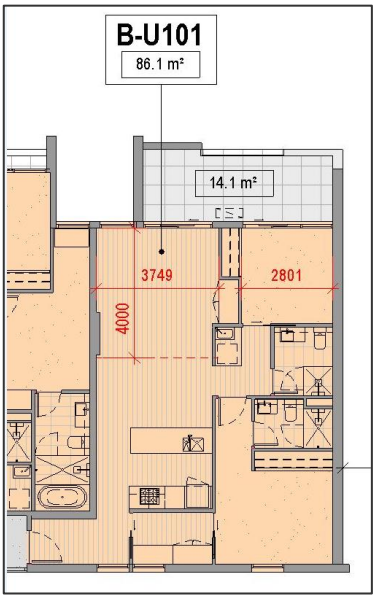
In some instances, units are unable to provide minimum dimensions of 3m for bedrooms and the 4m minimum width for living rooms. The rooms provide a minimum room dimension as required by the ADG however, as a matter of caution we have ensured that rooms can demonstrate suitable layouts

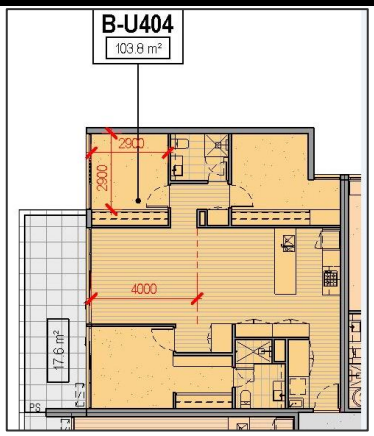
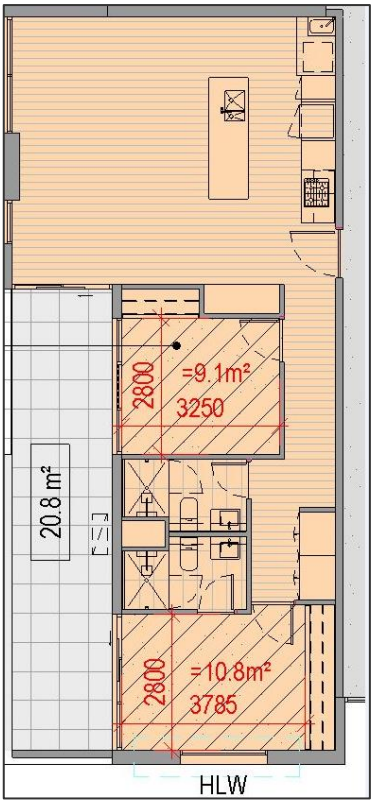
Objective 4D-3
Apartment layouts are designed to accommodate a variety of household activities and needs

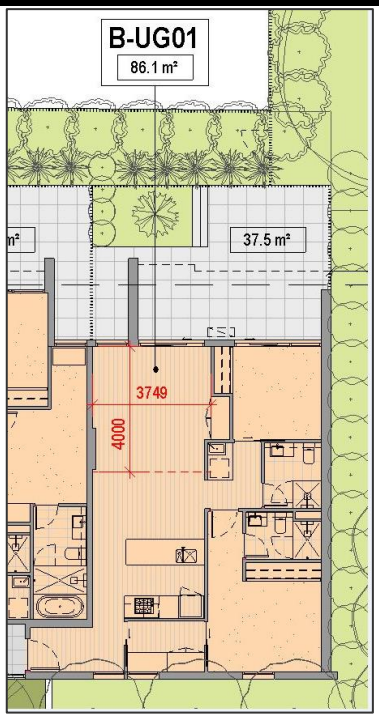
Design criteria

1. Master bedrooms have a minimum area of 10m² and other bedrooms 9m² (excluding wardrobe space)
2. Bedrooms have a minimum dimension of 3m (excluding wardrobe space)
3. Living rooms or combined living/dining rooms have a minimum width of:
   - 3.6m for studio and 1 bedroom apartments
   - 4m for 2 and 3 bedroom apartments
4. The width of cross-over or cross-through apartments are at least 4m internally to avoid deep narrow apartment layouts

Despite this however, the proposed units have been designed to accommodate a variety of household activities and needs. Screenshots of units are provided below to demonstrate that layouts provide a variety of arrangements and spaces for activities. The layouts will adequately meet the needs of users through compliance with a minimum room dimension.



Standard	Proposed Development	Comments	Compliance
		 	

<table>
<tr><th>Standard</th><th>Proposed Development</th><th>Comments</th><th>Compliance</th></tr>
<tr><td></td><td></td><td> 
</td><td></td></tr>
<tr><td>4E
Private Open Space and Balconies</td><td>Private open spaces are outdoor spaces of the apartment, including balconies, courtyards and terraces, which enhance the amenity and indoor/outdoor lifestyle of residents.

<table>
<tr><th>Dwelling type</th><th>Minimum area</th><th>Minimum depth</th></tr>
<tr><td>Studio apartments</td><td>4m²</td><td>-</td></tr>
<tr><td>1 bedroom apartments</td><td>8m²</td><td>2m</td></tr>
<tr><td>2 bedroom apartments</td><td>10m²</td><td>2m</td></tr>
<tr><td>3+ bedroom apartments</td><td>12m²</td><td>2.4m</td></tr>
<tr><td colspan="3">The minimum balcony depth to be counted as contributing to the balcony area is 1m</td></tr>
<tr><td colspan="3">For apartments at ground level or on a podium or similar structure, a private open space is provided instead of a balcony. It must have a minimum area of 15m² and a minimum depth of 3m</td></tr>
</table></td><td>The proposed development is able to achieve appropriate area and depth needed to provide adequate private open space in the form of outdoor spaces and balconies.

The proposed development provides a large communal open space courtyard, located between Tower A and B in the centre of the site. The landscape design provides design excellence in landscape architecture and is based on place making principles to create a space that connects people within the residential community.

The proposed development satisfies private open space requirements for all units. Plans have been amended to ensure all are now POS compliant:

A114 = 10m²
B102 = 10.4m²
B103 = 10m²
B105 = 10m²
A311 = 10m²</td><td>✓</td></tr>
</table>

Standard	Proposed Development	Comments	Compliance
		A302 = 43.1m^2 (no change) A303 = 13.2m^2 (no change) A305 = 38.7m^2 (no change) A411 = 11.5m^2 B402 = 10m^2 B403 = 10m^2 B404 = 17.6m^2 (no change) A1011 = 10m^2 Apartments at ground floor have provided open space with a minimum area of 17.1m^2 and minimum depth of 3m. All primary balconies and terraces are located adjacent to living spaces.	
4F Common Circulation and Spaces	Common circulation and spaces within a building are shared communally by residents. They include lobbies, internal corridors and external galleries, vertical circulation such as lifts and stairs, as well as community rooms and other spaces. ***Design criteria*** 1. The maximum number of apartments off a circulation core on a single level is eight 2. For buildings of 10 storeys and over, the maximum number of apartments sharing a single lift is 40	The development proposes a lobby in Tower A and B and associated corridors, which provide lift and stair access to the basement and each residential level. In Tower A, the lobby provides an area of 131.4m^2 and comprises mailboxes and seating areas. Four lifts are provided in Tower A. In Tower B, the lobby provides an area of 30.2m^2 and comprises seating areas. Two lifts are provided in Tower B. Seating areas in both lobby's add an additional communal open space area for people to socialise. Plans have been amended to introduce a lift and staircase at the southern end of Tower B. to ensure compliance with the ADG. Corridors provide access to stairs, lifts, utility rooms and associated storage.	✓
4G Storage	Adequate storage is an important component of apartment design. It is	The development provides 1 bedroom apartments with storage of around 3-4m^3	×

Standard	Proposed Development	Comments	Compliance
	calculated by volume as opposed to floor area and should be provided proportionally to the size of the apartment. Dwelling type / Storage size volume Studio apartments: 4m³ 1 bedroom apartments: 6m³ 2 bedroom apartments: 8m³ 3+ bedroom apartments: 10m³	internally. 2 Bedroom apartments will be provided storage of around 4-6m^3 internally. 3 bedroom units will be provided storage between 6-9m^3 internally. The development provides 70 x 4m^3 and 163 x 5m^3 of storage across all 3 basement parking levels. This provides a total of 233 cages, which is able to cater for additional storage requirements for each dwelling.	
4H Acoustic Privacy	Acoustic privacy is about protecting sound transmission between external and internal spaces, between apartments and communal areas and between apartments within a building.	Noisy sources including substation, driveways, service areas, circulation areas are located away from habitable rooms in each unit. The driveway is recessed on the southern boundary which minimises impacts onto the proposed apartment layout. All service areas and pickup areas for waste and associated utilities are located in the basement parking areas. It is anticipated that appropriate noise attenuation measures and sound levels will be incorporated within the BCA compliance. Noise from external sources will be treated to ensure compliance with Council's requirements. Please see Acoustic Report prepared by Koikas Acoustics attached and marked **Annexure 6**.	✓
4J Noise and Pollution	Properties located near major roads, rail lines and beneath flight paths can be subject to	The site Is not located on a train line, major road or under a flight path.	✓

Standard	Proposed Development	Comments	Compliance
	noise and poor air quality. Similarly, hostile and noisy environments such as industrial areas, substations or sports stadiums can have impacts on residential amenity. Careful design solutions can help to improve quality of life in affected apartments by minimising potential noise and pollution impacts.	The development site is opposite a private hospital on the eastern side of Bigge Street, which would not be considered a noisy environment. Street tree planting, vegetation screening and double glazed windows are a few examples of measures to combat sources of noise for residential properties fronting onto Bigge Street. Appropriate landscaping on the eastern boundary will act as a noise reduction measure for any noisy activities along Bigge Street. Units in Tower B are setback substantially from the road and are separated by communal open space to filter air pollution generated by traffic,	
CONFIGURATION			
4K Apartment Mix	Apartment mix refers to the percentage of apartments with different numbers of bedrooms in a development. The number of bedrooms is directly related to floor area which in turn determines the yield that can be generated on the site	The development provides a range of 1, 2 and 3 bedroom units, which is considered appropriate for the demographic and local market. The mix takes into consideration access to local shops, public transport and infrastructure. The development provides the following apartment breakdown: • 14.9% 1 bedrooms • 68.7% 2 bedrooms • 16.2% 3 bedrooms Plans have been amended to introduce a greater portion of 3 bedroom units within the development. This will contribute towards a diversity of housing in excess of what is required under LDCP 2008. The DCP requires that 3	✓

Standard	Proposed Development	Comments	Compliance
		bedroom units must not be less than 10% of total mix of units. However, this apartment type could serve a need with for families within the city as well as penthouse apartments. These are largely provided on level 11 and 12 of the development, as well as providing 10% within the compliant height limit (ground floor to level 10).	
4L Ground Floor Apartments	Ground floor apartments offer the potential for at-grade landscaped private open spaces and direct access from the street. They also provide opportunities for the apartment building and its landscape to respond to the human scale of the streetscape. On steep sites they may be located over different floors of the building stepping down the site.	The ground floor apartments provide ground floor access separate from the main lobby entrance. Courtyards also face onto Bigge Street and are slightly elevated above the street level, which facilitates surveillance. Ground floor apartments in Tower A also have their own private open space, which gives the overall bulk of the development a sense of human scale and fine grain elements. Ground floor apartments in Tower B have direct access to the communal open space and private courtyards. Plans have been amended to introduce a lift and staircase at the southern end of Tower B to enable greater access to lower level apartments. Apartments located on the ground floor provide large terraces for residents. A mix of layered landscape, fencing and walls provides a permeable and varied street frontage that allows both casual surveillance of the street and building entry.	✓
4M Facades	The design of facades	The building façades work to	✓

Standard	Proposed Development	Comments	Compliance
	contributes greatly to the visual interest of the building and the character of the local area. Facades that face the street have an impact on the public domain, while side and rear facades often influence the amenity of neighbouring buildings and communal and private open spaces.	compliment the dense form of the Liverpool centre by providing visually interesting and engaging facades, which provide a variety of building elements, defined base and middle levels and changed textures throughout the structures. The ground floor levels of the development operate with more human scale features including planting, trees, proportionate entranceway and paths and courtyard access to ground floor dwellings. In addition, there is no symmetrical or generic unit layout, each apartment design is unique in its layout and provides different forms and styles of private open space. The scale and vertical elements are well proportioned to the communal square space in the centre, which provides a balanced well-articulated apartment development.	
4N **Roof Design**	The roof is an important element in the overall composition and design of a building. Quality roof design provides a positive addition to the character of an area and can form an important part of the skyline. Roofs also provide opportunities for open space where appropriate and can add to the sustainability performance of a building.	No low pitched roofs or special roof features have been proposed as part of this development. The roof design is considered appropriate as it corresponds to and is proportionate to the proposed built form and minimises overshadowing impacts on adjoining properties.	✓
40 **Landscape Design**	Successful landscape design complements the existing natural and cultural features of a site and contributes to the building's setting.	At ground and podium levels, a significant portion of the site comprises landscaped area. The rationalising of a public communal square between	✓

Standard	Proposed Development	Comments	Compliance
	Landscape design includes the planning, design, construction and maintenance of all external spaces. Incorporating landscape design early in the design process provides optimal outcomes for residential apartments. It needs to be coordinated with other disciplines to ensure the building design and service locations complement the landscape and public domain.	Tower A and Tower B facilitates equal access to public open space and reinforces the building configuration and design. The public communal area provides extensive landscaping, trees and planting to reinforce the existing character of the site, allow for ample recreation and socialising areas and provide sufficient deep soil areas. The public communal space seeks to strengthen biodiversity by providing habitat for native wildlife. The landscaping offering in the development provides a range of outdoor alfresco areas, fixed and flexible seating, outdoor play areas and numerous seating areas. Other elements include planter boxes that cantilever over pedestrian paths. The landscape has been designed to attract residents to use it as part of the outdoor living activities and is design excellence at its best. Furthermore, public open space areas and tree planting are provided on the northern and western portions of the site, providing a soft barrier between adjoining apartments.	
4P Planting on Structures	Planting on structures is where plants are on top of built structures such as basement car parks, podiums, roofs and walls. Planting on structures can provide amenity, improve air quality and microclimate, and reduce direct energy use and stormwater runoff. It can also supplement deep soil	All planting takes place on the ground floor and is built over the basement car park, directly underneath the communal open space area.	✓

Standard	Proposed Development	Comments	Compliance
	planting on sites where opportunities for this are limited or restricted, e.g. in high density areas		
4Q Universal Design	Universal design is an international design philosophy that enables people to continue living in the same home by ensuring that apartments are able to change with the needs of the occupants. Universally designed apartments are safer and easier to enter, move around and live in. They benefit all members of the community, from young families to older people, their visitors, as well as those with permanent or temporary disabilities.	The development provides 1, 2 and 3 bedroom apartments, which ensure the proposal is able to adapt and meet different market demands. Plans have been amended to increase the number of 3 bedroom units within the development. This will provide a new product offering that is limited within new housing developments and to increase housing diversity within the city centre. The proposal has been designed to ensure maximum safety, efficiency and movement within the building and open spaces areas. The proposal also seeks to provide a development that is conducive for all age groups. Over 20% of units comply with universal design requirements. These are a combination of adaptable apartments and Silver Level LGA (Liveable Housing Australia) compliant apartments.	✓
4R Adaptive Re-Use	Buildings adapted for reuse as apartments can range from large houses, redundant industrial buildings, major institutional buildings and groups of buildings to commercial office towers	N/A	N/A
4S Mixed Use	Mixed use development includes multiple uses in one building. In apartment buildings this is commonly achieved vertically with different uses stacked above one another. A vertical mix of uses is more likely to increase	N/A	N/A

Standard	Proposed Development	Comments	Compliance
	activity through the day and night which in turn improves passive surveillance of the public domain.		
4T Awnings and Signage	Awnings are prominent streetscape elements requiring considerable design attention. Continuous awnings encourage pedestrian activity along streets and in conjunction with active frontages, support and enhance the vitality of the local area. Together with building entries, awnings provide a public address, thereby contributing to the identity of a development.	The development provides adequate and suitable lighting and weather protection at the building entrances. The balustrades act as awnings protecting units below.	✓
PERFORMANCE			
4U Energy Efficiency	Passive environmental and energy efficient design is about the ability of an apartment to manage thermal performance (thermal comfort) and daylight access, providing increased amenity to occupants and reducing energy costs.	Adjustable windows and screens will allow residents to determine the level of daylight and sun access and cross wind ventilation they desire. The proposed development is found to meet BASIX requirements, which demonstrate the proposal has been designed to meet optimal energy efficiency.	
4V Water Management and Conservation	Water sensitive urban design is the integrated management of water in urban areas. It takes into account all of the elements of the urban water cycle including potable (drinking quality) water, rainwater, wastewater, stormwater and groundwater.	Refer to BASIX.	
4W Waste Management	The minimisation and effective management of domestic waste from apartments contributes to the visual and physical amenity of the building as	A Waste Management Plan has been prepared by Elephant Foot Recycling Solutions, which details collection of waste, frequency, storage locations, ventilation and	✓

Standard	Proposed Development	Comments	Compliance
	well as limiting potentially harmful impacts on the environment.	construction requirements. All waste storage has been incorporated into the basement removing all waste collection from the street. Please see Waste Management Plan provided and marked **Annexure 7.**	
4X Building Maintenance	Careful design and material selection can reduce the long term maintenance obligations of apartment development. In addition, effective maintenance of the development ensures the longevity of buildings, sustaining the value of the property and reducing the life-cycle cost to owners.	Noted.	✓

Table 4: ADG Part 4 Compliance Table

As demonstrated in the compliance tables above, the proposed development satisfies the requirements set out in the Apartment Design Guide and ensures the proposal results in a high quality outcome for the locality.

5.3.3 Design Quality Principles

Pursuant to Part 2 of SEPP 65, design quality principles provide a guide to achieving good design and the means of evaluating the merit of the design solutions. The quality principles for residential flat development are provided in **Schedule 1.**

Schedule 1 Design Quality Principles	Proposed Development
Principle 1: Context Responding to context involves identifying the desirable elements of a location's current character or, in the case of precincts undergoing a transition, the desired future character as stated in planning and design policies. New buildings will thereby contribute to the quality and identity of the area.	The proposal responds to the desired built form and style of development envisaged in Liverpool City Centre. The development provides high density residential apartments, which have excellent access to public transport, schools, retail and services. The proposal responds to the future character of Liverpool, which is highlighted as a major employment, housing and service driven centre under the latest metropolitan planning state strategy *A Plan for Growing Sydney*.
Principle 2: Scale Establishing an appropriate scale requires a considered response to the scale of existing development. In precincts undergoing a transition, proposed bulk and height needs to	The development is located in the Liverpool City Centre and responds to the high rise and large scale development defined by the area including: residential apartment dwellings,

achieve the scale identified for the desired future character of the area.	commercial towers, retail malls and health and education precincts. As a result of the surrounding context, the proposal establishes appropriate and suitable scale in relation to existing development. The proposed height of the building establishes continuity to the streetscape, facilitates high quality urban design form and provides a positive benefit to the locality.
Principle 3: Built Form Appropriate built form defines the public domain, contributes to the character of streetscapes and parks, including their views and vistas, and provides internal amenity and outlook.	The proposal presents a solid urban form onto Bigge Street, which establishes appropriate massing and scale in relation to surrounding land and the public domain. The development places significant emphasis on a communal open space area, which operates centrally in the development and provides excellent open space amenity. The development provides human scale built form towards the ground level, which establishes a development that contributes to the visual amenity of the streetscape.
Principle 4: Density Appropriate densities are sustainable and consistent with the existing density in an area or, in precincts undergoing a transition, are consistent with the stated desired future density. Sustainable densities respond to the regional context, availability of infrastructure, public transport, community facilities and environmental quality.	The development is considered to be of an appropriate and justifiable density given the local context and established built form of Liverpool City Centre. The development responds to the areas desired future character by providing more housing choice and affordability to new residents close to established transport networks, medical facilities, schools and community facilities.
Principle 5: Resource, Energy, and Water Efficiency Sustainability is integral to the design process. Aspects include demolition of existing structures, recycling of materials, selection of appropriate and sustainable materials, adaptability and reuse of buildings, layouts and built form, passive solar design principles, efficient appliances and mechanical services, soil zones for vegetation and reuse of water.	The design of the development incorporates sufficient resource, energy and water efficiency. The proposal has been designed and oriented to provide maximum cross wind ventilation and solar access to the development, providing excellent amenity for future residents. The site has been configured to provide maximum opportunities for recreation, deep soil zone and open space. The development also minimises the impact of waste facilities and visually unappealing structures by locating them in the basement parking areas.
Principle 6: Landscape Landscape design builds on the existing site's natural and cultural features in responsible and creative ways. It enhances the development's natural environmental performance by co-	The site currently comprises inappropriate and poorly located tree species. The proposal seeks to establish a positive image and contextual fit of landscape elements into the locality.

ordinating water and soil management, solar access, micro-climate, tree canopy and habitat values. It contributes to the positive image and contextual fit of development through respect for streetscape and neighbourhood character, or desired future character. Landscape design should optimise useability, privacy and social opportunity, equitable access and respect for neighbours' amenity, and provide for practical establishment and long term management.	The consolidated site provides an opportunity to rationalise an effective and diverse landscaping and open space area. The development provides excellent circulation and movement linkages in and around the proposed internal communal area. By establishing transparent connectivity within the site, the design optimises useability and social opportunity. The landscape design adopts a number of concept generators including 'green spillage', 'glue between buildings', 'establish community amenity', 'interacting vs private retreat' and 'legibility'.
Principle 7: Amenity Optimising amenity requires appropriate room dimensions and shapes, access to sunlight, natural ventilation, visual and acoustic privacy, storage, indoor and outdoor space, efficient layouts and service areas, outlook and ease of access for all age groups and degrees of mobility.	The development provides excellent amenity for future residents and users. The site adopts adequate building separation, has been oriented in favourable solar and wind directions, and provides sufficient landscaping and deep soil zones. The buildings establish internal lifts, stairs and a diverse and balanced mix of 1, 2 and 3 bedroom units with sufficient private open space.
Principle 8: Safety and Security This is achieved by maximising overlooking of public and communal spaces while maintaining internal privacy, avoiding dark and non-visible areas, maximising activity on streets, providing clear, safe access points, providing quality public spaces that cater for desired recreational uses, providing lighting appropriate to the location and desired activities, and clear definition between public and private spaces.	The development achieves safety and security by clearly delineating vehicular and pedestrian entry points fronting Bigge Street. By establishing one pedestrian entry via Bigge Street, the proposal achieves defined access points that are clear from the streetscape. The development also provides a full extent onto Bigge Street, this creates a more solid form that minimises non-visible areas that would normally be established on more narrow buildings. The development provides a beneficial relationship to the street by allowing ground floor units the ability to overlook onto the street, which enhances passive surveillance.
Principle 9: Social Dimensions and Housing Affordability New developments should optimise the provision of housing to suit the social mix and needs in the neighbourhood or, in the case of precincts undergoing transition, provide for the desired future community. New developments should address housing affordability by optimising the provision of	The development optimises the provision of diverse housing mix and choice for Liverpool LGA. The development provides an array of 1, 2 and 3 bedroom apartments that provide a range of floor areas, orientation and private open space layouts. The provision of diverse housing is beneficial for the Liverpool locality and is provided within excellent access to services, transport and amenity. These units

economic housing choices and providing a mix of housing types to cater for different budgets and housing needs.	will provide housing choice that caters to different budgets and household needs without compromising excellent amenity.
Principle 10: Aesthetics Quality aesthetics require the appropriate composition of building elements, textures, materials and colours and reflect the use, internal design and structure of the development. Aesthetics should respond to the environment and context, particularly to desirable elements of the existing streetscape or, in precincts undergoing transition, contribute to the desired future character of the area.	The development applies a complementary and appropriate palate of building elements, textures and colours, both internally and externally.

Table 5: Design Quality Principles

5.4 Liverpool Local Environmental Plan 2008

5.4.1 Zoning

Pursuant to the provisions of Liverpool Local Environmental Plan 2008 (LLEP 2008) the subject site is zoned R4 High Density Residential as shown in the zoning map provided and marked **Figure 10.**

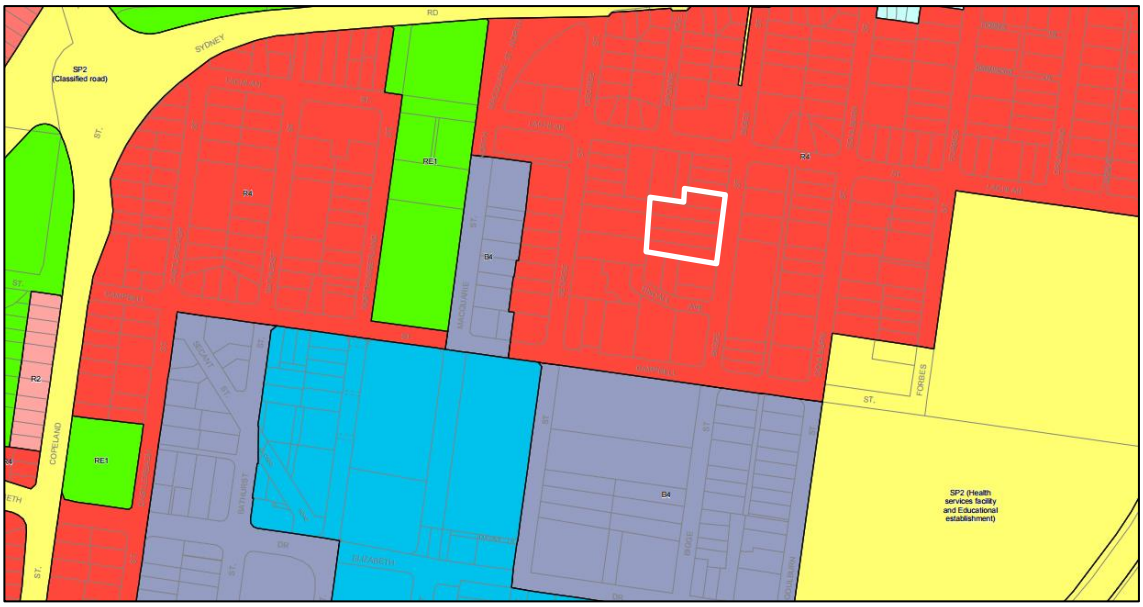


Figure 12: Zoning Map Extract (Source: LLEP 2008)

The land use zone for the R4 High Density Residential zone prescribes:

1 Objectives of zone

- *To provide for the housing needs of the community within a high density residential environment.*
- *To provide a variety of housing types within a high density residential environment.*
- *To enable other land uses that provide facilities or services to meet the day to day needs of residents.*
- *To provide for a high concentration of housing with good access to transport, services and facilities.*
- *To minimise the fragmentation of land that would prevent the achievement of high density residential development.*

2 Permitted without consent

Home-based child care; Home occupations

3 Permitted with consent

Attached dwellings; Bed and breakfast accommodation; Boarding houses; Building identification signs; Business identification signs; Child care centres; Community facilities; Dwelling houses; Educational establishments; Environmental facilities; Environmental protection works; Exhibition homes; Exhibition villages; Flood mitigation works; Home businesses; Home industries; Hostels; Hotel or motel accommodation; Kiosks; Multi dwelling housing; Neighbourhood shops; Places of public worship; Public administration buildings; Recreation areas; Residential care facilities; Residential flat buildings; Respite day care centres; Roads; Secondary dwellings; Serviced apartments; Shop top housing

4 Prohibited

Any development not specified in item 2 or 3

As identified earlier, development for the purpose of a residential apartment development is subject to SEPP 65 if:

(a) the development consists of any of the following:
(i) the erection of a new building,
(ii) the substantial redevelopment or the substantial refurbishment of an existing building,
(iii) the conversion of an existing building, and
(b) the building concerned is at least 3 or more storeys (not including levels below ground level (existing) or levels that are less than 1.2 metres above ground level (existing) that provide for car parking), and
(c) the building concerned contains at least 4 or more dwellings.

This is further provided in LLEP 2008, which identifies ***residential flat building*** *as follows*:

means a building containing 3 or more dwellings, but does not include an attached dwelling or multi dwelling housing.
Note. *Residential flat buildings are a type of* ***residential accommodation****— see the definition of that term in this Dictionary.*

In accordance with the land use table, the use of land for residential flat buildings is permissible with consent in the R4 Zone pursuant to the provisions of LLEP 2008.

5.4.2 Subdivision

Clause 4.1 of LLEP 2008 provides objectives to ensure subdivision reflects and reinforces the predominant subdivision pattern of the area and minimises the impact of subdivision on the amenity of neighbouring properties.

The minimum subdivision size for the subject site is 1,000m^2 and is marked "U", as identified on the minimum lot size map extract provide and marked **Figure 10.**

Figure 13: Minimum Lot Size map Extract (Source: LLEP 2008)

The subject application does not proposed any subdivision and instead proposes consolidation of previously fragmented sites.

5.4.3 Height of Buildings

Pursuant to Clause 4.3 of LLEP 2008, the maximum building height permitted on the subject land is 35 metres and is marked "V" on the building heights map as provided and marked **Figure 11.**

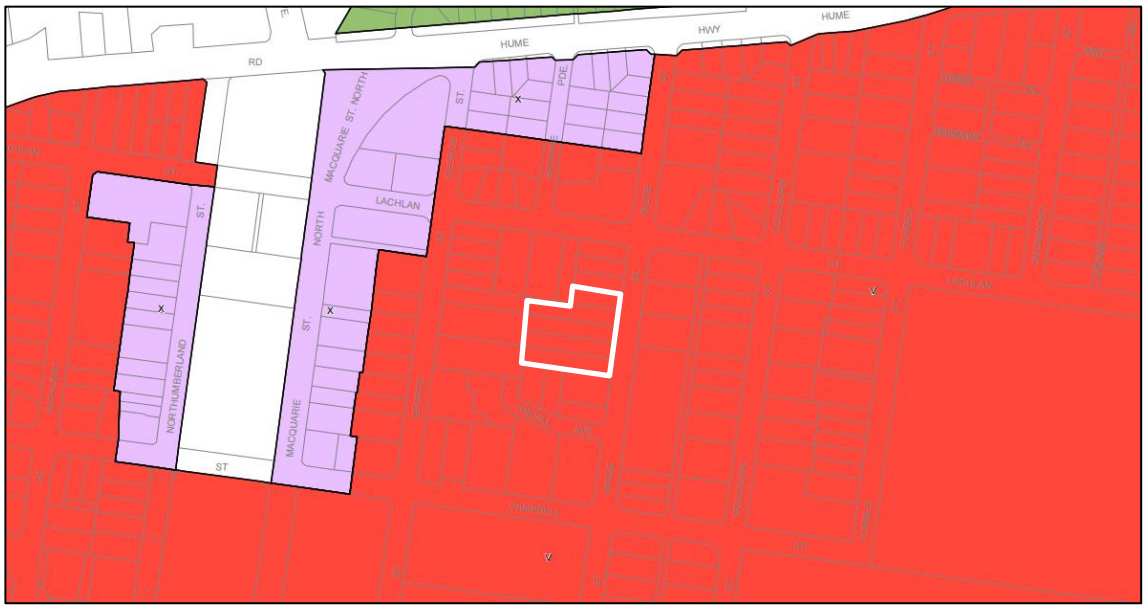


Figure 14: Height of Buildings Map Extract (Source: LLEP 2008)

The proposal comprises a building height of 41.7 metres (top of parapet), which exceeds the permissible building height identified in LLEP 2008. Accordingly, a Clause 4.6 variation has been submitted to support the proposed variation to the development standard and demonstrates compliance with the objectives.

The 4.6 variation is provided and marked **Annexure 3**

Compliance with the maximum building height development standard is considered in this instance to be unnecessary and unreasonable given:

- Additional height (levels 11 and 12) is dedicated to the provision of 3 bedroom units, which is a desired housing product currently limited in the area. The unit mix comprises 16.2% dedicated to 3 bedroom units, which is much higher than what is prescribed under LDCP 2008 and contributes significantly towards housing diversity in the city centre and also provides family style and penthouse living opportunities near the city centre;
- The proposal provides appropriate bulk and scale, and will not result in adverse visual impacts and not detract from the streetscape;
- It is not considered to impact on the heritage context of the locality; and
- The proposed height is not considered to result in built form that is excessive, given the immediate and adjoining residential flat buildings surrounding the site.

The non-compliance results in a better built form outcome than a compliant development through reduced solar impacts on adjoining land to the south. The design originally proposed a form which provided for two buildings, both of which complying with the maximum building height prescribed by LLEP 2008.

The decision to reduce the height of the rear building and increase the height of the front building came about through suggestions from Council at the Pre-DA of 8 July 2015. The result is a non-compliance with height in relation to the front building; however, the non-compliance does not result in any additional impacts and serves to improve the solar access of development to the south by providing a rear building which is below the maximum building height control.

5.4.4 Floor Space Ratio

Clause 4.4 of LLEP 2008 establishes standards for maximum development density and intensity of land use for the Liverpool LGA.

The subject site provides a floor space ratio of 2:1 and is marked "T" on the floor space ration map extract, provided and marked **Figure 12.**

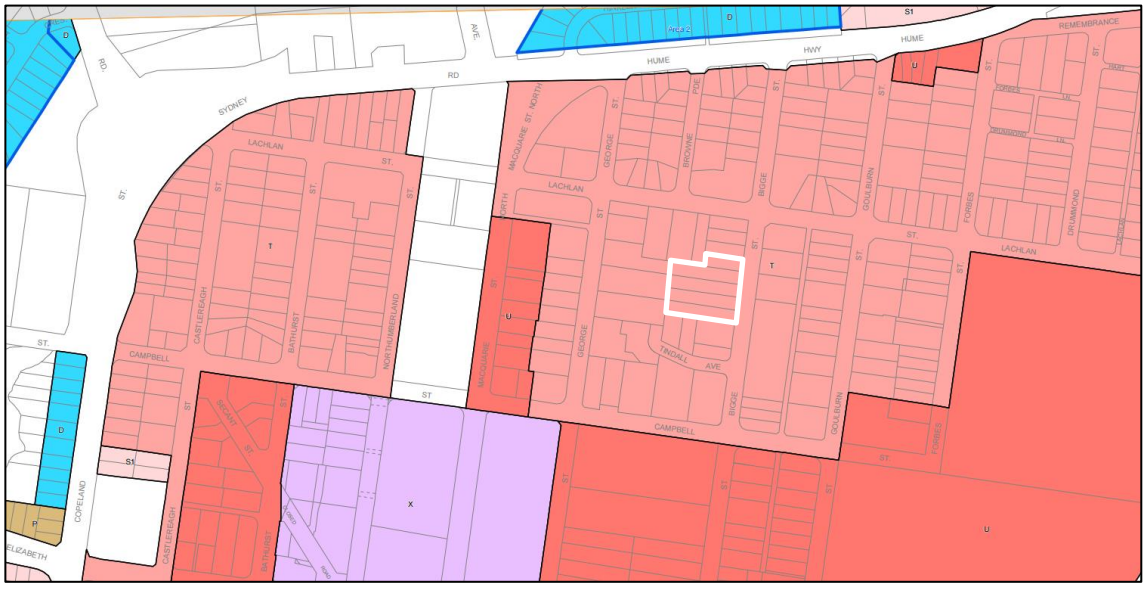


Figure 15: Floor Space Ratio Map Extract (Source: LLEP 2008)

Despite the floor space ratio identified on the floor space ratio map, the maximum floor space ratio of a building in the Liverpool city centre that is:

(a) on a site area greater than 1,000 square metres, and
(b) on land in a zone specified in the Table to this clause, and
(c) on land for which the maximum building height shown on the Height of Buildings Map is as specified in Column 1 of the Table under the heading for that zone,
is the amount specified opposite that height in:
(d) Column 2 of the Table, if the site area for the building is greater than 1,000 square metres but less than 2,500 square metres, or
(e) Column 3 of the Table, if the site area for the development is equal to, or greater than 2,500 square metres.

Column 1	**Column 2**	**Column 3**
Zone B3 Commercial Core		
21m	(3 + 0.5X):1	3.5:1
28m	(3 + X):1	4:1
35m	(4 + X):1	5:1
45m	(4.5 + 1.5X):1	6:1
100m	(5 + 3X):1	8:1
Zone B1 Neighbourhood Centre, B4 Mixed Use, SP1 Special Activities or SP2 Infrastructure		
18m	(1.5 + 0.5X):1	2:1
24m	(2 + X):1	3:1
35m	(2.5 + X):1	3.5:1
45m	(2.5 + 1.5X):1	4:1
80m	(2.5 + 3.5X):1	6:1
Zone R4 High Density Residential		
18m	(1 + X):1	2:1
24m	(1.5 + X):1	2.5:1
35m	(2 + X):1	3:1
45m	(2 + 1.5X):1	3.5:1

The proposed development is located within Liverpool Town Centre on land greater than 2,500m^2 and is located within the R4 Zone. Subsequently the permissible floor space ratio for the subject site is 3:1.

The proposal seeks an FSR of 3.24:1 based on the following calculation:

Gross Floor Area ÷ Site Area = Floor Space Ratio

GFA 18,492.8 ÷ SA 5,715.8 = FSR 3.24:1

The proposed floor space ratio exceeds the permissible floor space ratio as identified in LLEP 2008 by 7.8%. Accordingly, a Clause 4.6 variation has been triggered and requests variation to the development standard and seeks consent for the additional gross floor area. The 4.6 variation is provided and marked **Annexure 3**

Compliance with maximum floor space ratio development is considered in this instance to be unnecessary and unreasonable given:

- The proposal will be of an appropriate bulk and scale and will not result in adverse visual impacts and will not detract from the continuity of the streetscape;
- It is not considered to impact on the areas surrounding heritage context; and
- It will not result in any adverse amenity issues to surrounding properties or the locality.

The additional FSR is dedicated to the 3 bedroom units, located on level 11 and 12 of the proposed development. Non-compliant floor space contributes to the 16.2% 3 bedroom apartment product, which overall strengthens the housing diversity offering of the development for Liverpool City Centre.

The site is ideally located to accommodate the proposed development as it has excellent access to public transport, is located in a position that encourages walking and cycling to surrounding employment, educational, entertainment and open space.

The proposed development demonstrates design excellent and has already been considered by the Design Excellence Panel, at their meeting of 10 December 2015. The additional GFA can be contributed to the area of the building which previously contained all services and waste facilities within the southern portion of building A.

The decision to relocate all services and waste collection to the basement was made in accordance with Council's recommendations, in order to provide a building which demonstrated design excellence.

The portion of the building which remained void, as a result of the relocation, was redesigned to incorporate ground floor apartments.

The non-compliance with regard to FSR has resulted in a superior outcome to the complying development previously proposed, which would have resulted in all waste storage and collection occurring at the ground level of the site and the substation being located within the southern portion of Tower A.

5.4.5 Preservation of Trees or Vegetation

Clause 5.9 of LLEP 2008 provides objectives to preserve the amenity and biodiversity of the area through the preservation of trees and other vegetation.

According to the clause, a person must not ringbark, cut down, top, lop, remove injure or wilfully destroy any tree or other vegetation to which a development control plan applies without authority conferred by development consent or permit granted by Council.

An arboricultural report has been prepared by NSW Tree Services Pty Ltd dated 25 February 2016, which has assessed the impacts of the proposed development on tree removal. The assessment takes into account a total of 33 trees including trees confined within the site boundary and adjoining land.

The report provides a Construction Impact Statement, which assessed all trees with direct reference to the guidelines stipulated in the Australian Standard – *Protection of Trees on Development Sites (AS 4970-2009)*. This includes establishment of Tree Protection Zones (TPZ). A full copy of the assessment is provided and attached **Annexure 4**.

The assessment finds that a more positive outcome will be to focus on new plantings as part of the landscape that will complement the site, rather than random tree species that currently dominate the site and are placed in inappropriate growing locations. The report provides the following recommendations:

a. *Removal of all site trees is supported by the Arborist. Site trees will not be able to sustain the degree of impacts from development of this magnitude and therefore significantly impede their viability. No trees are worthy of design changes to the proposal to accommodate for their retention.*

b. *In the case of T19 (adjoining tree), it is the only tree that locates against a shared boundary. Where the Arborist would otherwise endorse design changes to accommodate for its retention, the tree is self-sown thus its current location will always prove problematic irrespective of the proposed development. This species is short lived in Sydney with this specimen assigned a limited useful life expectancy (less than 10 years). As such the Arborist recommends that this tree be removed. Where trees are located on adjoining land the client has no authority over their removal, this needs to be negotiated with both the tree owner and appropriate approvals sought from Liverpool Council.*

c. *Other adjoining trees, T20 and T33 – based on current information provided on allocated setbacks, are anticipated to remain viable, given that there is no encroachment from the proposed basement and a minor encroachment from the building footprint. In addition, a small portion of their canopies, for spatial clearance will be required. However more detailed information on both the installation of underground services and landscaping will need to be assessed for any further impact to these trees. This is especially true where plans indicate that the existing sewer located on site boundaries is to be relocated. Given that earthworks are required to facilitate the relocation, this impacts T20 and T33, and for this reason, the Arborist recommends that the existing sewer line remain redundant in situ and new piping be relocated at a 4.5 metre radius from these trees in order to minimise disturbance to the root systems.*

d. *Where there is anticipated loss to visual amenity from reduced canopy cover this is to be mitigated with a strict replanting regime as part of the Landscape Plan. Local provenance is highly endorsed to assist in maintaining the biodiversity of this are, even where urbanisation has degraded such vegetation.*

e. *Instatement of a Project Arborist (PA) as part of the project to oversee critical stages of development with respect to all retained trees. The PA will provide compliance certification for pivotal stages of this proposal.*

f. *That boundary fences remain intact to isolate those trees on adjoining sites, and serve as tree protection fencing. Where this is not viable, temporary protection fencing is to be installed purposefully for the protection of adjoining trees at a minimum of 2m from the trunk and an exclusion zone established*

g. *Excavation in the portion of TPZ located on client's site is to be supervised by the PA.*

h. *That the Arborist be consulted with regards to the installation of underground services where they are located in the TPZ of adjoining trees. The SRZ is not to be encroached by such services.*

i. *Landscaping that encroaches the TPZ of trees is to consist of; permeable pavement to allow air and gaseous exchange to tree roots, retaining walls with no continuous footings, fencing of lightweight construction with minimal ground intrusion.*

As demonstrated in the arborist assessment, the development will benefit the surrounding area by providing trees and landscaping that are conducive to the locality. It is anticipated Council will implement appropriate conditions relating to the preservation, removal and retention of any associated trees.

5.4.6 Heritage

Clause 5.10 provides measures to conserve items of heritage significance, items within conservation areas including fabric, settings and views.

The objectives of Clause 5.10 are described as follows:

> *(1)* ***Objectives***
> *The objectives of this clause are as follows:*
> *(a) to conserve the environmental heritage of Liverpool,*
> *(b) to conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views,*
> *(c) to conserve archaeological sites,*
> *(d) to conserve Aboriginal objects and Aboriginal places of heritage significance.*

The site is located within the vicinity of the following heritage item:

Item Name	Address	Significance	Item No
Dwelling	13 Bigge Street	Local	75

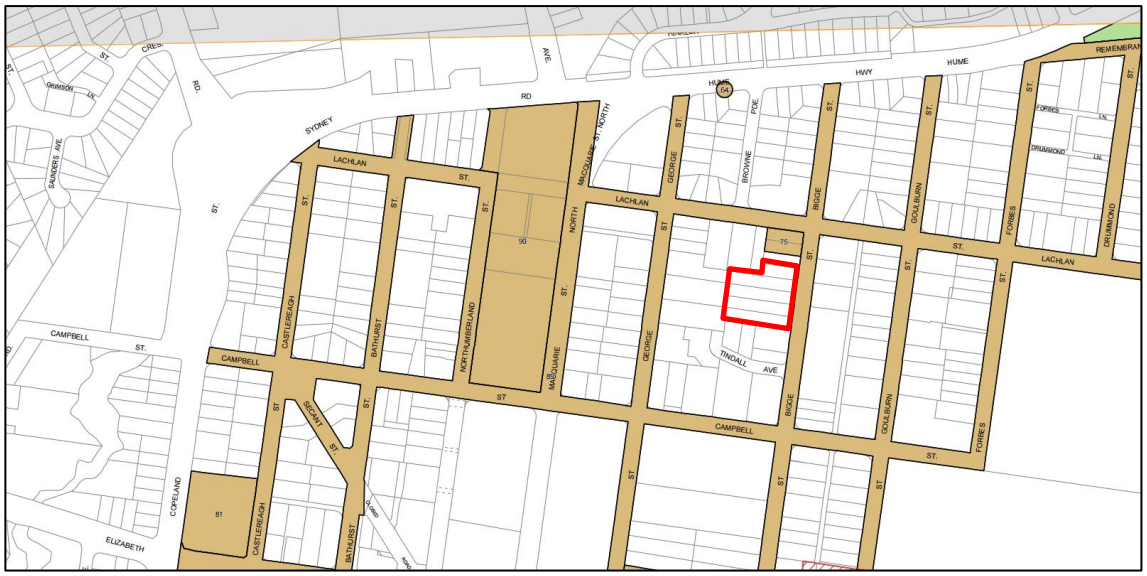


Figure 16: Heritage Map Extract (Source: LLEP 2008)

It is anticipated that the proposal will have minimal impact on the nearby heritage item at 13 Bigge Street. The site is within close proximity to a range of building typologies along with historic and contemporary buildings subject to varying architectural features, building heights and forms.

The adjoining site on the northern boundary benefits from an approved 14 storey and 9 storey residential apartment developments at 13-15 Bigge Street and 4-6 Lachlan Street. The two buildings approved for development are within close proximity to the heritage item. It is demonstrated through approval of the adjacent buildings, which adjoin the heritage item at each side, that the subject proposal will not impact the heritage item.

A Heritage Impact Statement prepared by Colin Brady outlines that the proposed works at 17-26 Bigge Street will remove fabric of limited significance in the visual curtilage of the local heritage item.

The report identifies the proposed works will enhance the increased scale and cohesiveness of the evolving townscape and setting for defining contemporary Liverpool and reinforcing the colonial grid town plan.

A full copy of the Heritage Impact Statement is attached and marked **Annexure 10**.

5.4.7 Acid Sulfate Soils

Clause 7.7 of LLEP 2008 provides that development consent is required for carrying out of works within 500 metres of adjacent Class 1, 2, 3 or 4 land that is below 5 metres Australian Height Datum and by which the water table is likely to be lowered below 1 metres Australian Height Datum on adjacent Class 1, 2 3 or 4 land. Additionally Clause 7.7 provides that works below the natural ground surface within Class 2 land, requires development consent.

The subject site is not identified within land classified Acid Sulfate Soils.

5.4.8 Flood Planning

Clause 7.8 of LLEP 2008 provides objectives to maintain existing flood regimes, flow conveyance capacity and avoid significant adverse impacts on flood behaviour that may result in impacts towards human life and damage of property. The subject site is not identified within flood prone land as shown in the flood map extract provided and marked **Figure 17.**

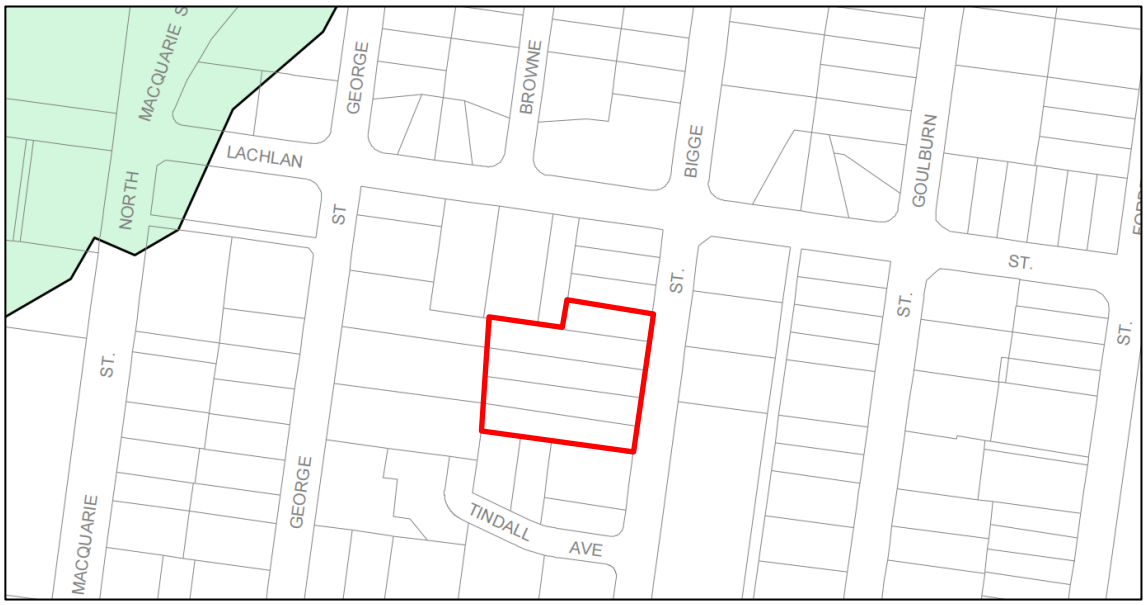


Figure 17: Flood Map Extract (Source: LLEP 2008)

5.4.9 Liverpool City Centre

Part 7 Division 1 of the LEP outlines provisions for proposed development within the Liverpool City Centre:

> *(a) to preserve the existing street layout and reinforce the street character through consistent building alignments,*
> *(b) to allow sunlight to reach buildings and areas of high pedestrian activity,*
> *(c) to reduce the potential for pedestrian and traffic conflicts on the Hume Highway,*
> *(d) to improve the quality of public spaces in the city centre,*
> *(e) to reinforce Liverpool railway station and interchange as a major passenger transport facility, including by the visual enhancement of the surrounding environment and the development of a public plaza at the station entry,*
> *(f) to enhance the natural river foreshore and places of heritage significance,*
> *(g) to provide direct, convenient and safe pedestrian links between the city centre (west of the rail line) and the Georges River foreshore.*

The proposal preserves the existing street layout and reinforces the street character by providing a consistent building setback which aligns with adjoining residential apartment buildings.

The proposal seeks to achieve a number of the objectives outlined in Part 7 of LLEP 2008. The proposal aims to strengthen Liverpool town centre by providing direct and convenient pedestrian linkages to a range of services and offers quality built form and design that enhances the overall urban fabric of the centre. The proposal compliments the need to enhance Liverpool train station and bus interchange as a major transport facility by providing additional potential patronage within close walking distance.

The proposed development is located along Bigge Street, which provides a direct link to the Liverpool town centre. The proximity of the proposed development to key transport infrastructure, recreational spaces, medical services, school facilities, shopping malls and office towers provides a strong compatibility with surrounding land uses and offers residents to participate and contribute to the vibrant and connected town centre.

5.4.10 Sun Access in Liverpool City Centre

The site is not affected by Clause 7.2 which provides measures to protect specified public open space from excessive overshadowing.

Column 1	Column 2
Location	**Maximum height**
Land within 9m of the public right of way on the northern side of Elizabeth Street, opposite Bigge Park, between Bigge Street and College Street	20m
Land within 9m of the public right of way on the northern side of Elizabeth Drive, opposite St Luke's Church Grounds between Northumberland Street and Macquarie Street	20m
Land within 9m of the public right of way on either side of Macquarie Street, between Elizabeth Street and Memorial Avenue (except the most southern 60m)	15m
Land within 17m of the northern boundary of Apex Park between the Hume Highway and Castlereagh Street	15m
Land within 9m of the public right of way on the western side of Northumberland Street opposite Liverpool Pioneers' Memorial Park between Lachlan and Campbell Streets	30m
Land within 9m of the public right of way on the eastern side of Macquarie Street opposite Liverpool Pioneers' Memorial Park between Lachlan and Campbell Streets	30m

Table 6: Sun Access in Liverpool City Centre

5.4.11 Building Separation in Liverpool City Centre

Clause 7.4 of LLEP provides objectives to ensure minimum separation of buildings to maintain visual appearance, privacy and solar access including:

(2) Development consent must not be granted to development for the purposes of a building on land in Liverpool city centre unless the separation distance from neighbouring buildings and between separate towers, or other separate raised parts, of the same building is at least:
(a) 9 metres for parts of buildings between 12 metres and 25 metres above ground level (finished) on land in Zone R4 High Density Residential, and
(b) 12 metres for parts of buildings between 25 metres and 35 metres above ground level (finished) on land in Zone R4 High Density Residential, and
(c) 18 metres for parts of buildings above 35 metres on land in Zone R4 High Density Residential and
(d) 12 metres for parts of buildings between 25 metres and 45 metres above ground level (finished) on land in Zone B3 Commercial Core or B4 Mixed Use, and
(e) 28 metres for parts of buildings 45 metres or more above ground level (finished) on land in Zone B3 Commercial Core or B4 Mixed Use.

Please see architecture drawings for building separation with adjoining developments. The site exceeds building separation requirements for buildings above 35 metres.

5.4.12 Minimum Building Street Frontage

(1) The objectives of this clause for the control of building frontage to streets are as follows:
(a) to ensure that, visually, buildings have an appropriate overall horizontal proportion compared to their vertical proportions,
(b) to ensure that vehicular access is reasonably spaced and separated along roads and lanes,
(c) to provide appropriate dimensions for the design of car parking levels,
(d) to encourage larger development of commercial office, business, residential and mixed use buildings provided for under this Plan.
(2) Development consent must not be granted to development for the purposes of any of the following buildings, unless the site on which the buildings is to be erected has at least one street frontage to a public street (excluding service lanes) of at least 24 metres:
(a) any building on land in Zone B3 Commercial Core or B4 Mixed Use, or
(b) any building of more than 2 storeys on land in Zone R4 High Density Residential, B1 Neighbourhood Centre or B2 Local Centre, or
(c) any residential flat building.

The proposed development is greater than 2 storeys and provides a frontage to Bigge Street of approximately 75.59 metres, which complies with minimum frontage to a public street of at least 24 metres.

5.4.13 Design Excellence in Liverpool City Centre

Clause 7.5 requires that Council shall not issue development consent to development involving the construction of a new building or external alterations to an existing building in Liverpool City Centre unless the consent authority is satisfied the development exhibits design excellence.

Based on the architectural plans prepared by Rothelowman, and review of the proposal by the Design Excellence Panel on 10 December 2015, the development is found to exhibit a high standard of architectural design. The built form, scale and proportion of buildings will contribute to and enhance the streetscape of Bigge Street, which is already subject to a series of high rise apartments. The development will improve the quality and amenity of the Liverpool Town Centre.

The development provides an excellent level of amenity through the proactive approach and adoption of a number of design initiatives. These include:

- Significance of entry and street engagement through single gesture linking both the front and rear buildings;
- Creation of a more human scale built form along Bigge Street and to the inner courtyard;
- Extensive landscaping initiatives including BBQ areas and seating, raised planters to encourage large tree canopies, alfresco areas with built in seating and tables, 2.7 metre high pergola along the path to the lobbies;
- Generous private open space courtyard areas and communal open space;
- Lobby amenities including seating areas and lounges

In addition, the meeting with DEP dated 10 December 2015 noted the following in relation to the design of the proposal:

- *The architects have undertaken significant work in relation to the adjoining isolated site and the over shadowing caused by the approved development on 13-15 Bigge Street*
- *The courtyard has good dimensions*
- *The quality of the documents, precedents and aesthetics is commended.*

5.4.14 Development in Flight Paths

Clause 7.17 identifies provisions to protect the operation and management of airports and that proposed developments do not compromise the flight path.

The subject site is not identified within the ANEF contour and flight path operation. Therefore this provision does not apply.

5.4.15 Development in Areas Subject to Potential Airport Noise

Clause 7.18 provides objectives to ensure that development within the vicinity of Bankstown Airport and the proposed Badgery's Creek airport site does not hinder or have any adverse impacts on the development or operation of the airports on those sites.

The site is not identified within ANEF noise contour or within any airport flight path.

5.4.16 Earthworks

Clause 7.31 of LLEP provides aims to mitigate the impact of earthworks on environmental functions and processes.

(1) The objectives of this clause are as follows:
(a) to ensure that earthworks for which development consent is required will not have a detrimental impact on environmental functions and processes, neighbouring uses, cultural or heritage items or features of the surrounding land,
(b) to allow earthworks of a minor nature without requiring separate development consent.
(2) Development consent is required for earthworks unless:
(a) the work is exempt development under this Plan or another applicable environmental planning instrument, or
(b) the work is ancillary to other development for which development consent has been given.
(3) Before granting development consent for earthworks, the consent authority must consider the following matters:
(a) the likely disruption of, or any detrimental effect on, existing drainage patterns and soil stability in the locality,
(b) the effect of the proposed development on the likely future use or redevelopment of the land,
(c) the quality of the fill or the soil to be excavated, or both,
(d) the effect of the proposed development on the existing and likely amenity of adjoining properties,
(e) the source of any fill material and the destination of any excavated material,
(f) the likelihood of disturbing relics,
(g) the proximity to and potential for adverse impacts on any watercourse, drinking water catchment or environmentally sensitive area.

It is anticipated the proposed development will result in excavation and filling for the two levels of basement car parking proposed and that appropriate conditions will be imposed by Council to ensure the works are met in accordance with relevant policies and guidelines.

A Geotechnical Report prepared by GTK dated 26 January 2016 provides a number of geotechnical findings, issues and recommendations to be considered in the design and construction of the proposed development. Recommendations include preparation of dilapidation reports, use of rock excavation equipment, consideration of vibration impacts on adjoining structures and implementation of footings on shale bedrock.

A full copy of this report is attached and marked **Annexure 13**.

5.4.17 Liverpool Local Environmental Plan 2008 Compliance Table

As highlighted in the table below, the proposed development is able to demonstrate compliance with the provisions set out in LLEP 2008. Where the proposal does not comply, a 4.6 variation has been submitted, which demonstrates compliance with the standard is unreasonable and unnecessary in this instance.

Clause	Details	Comments	Compliance
LIVERPOOOL LOCAL ENVIRONMENTAL PLAN 2008			
Zoning	R4 High Density Residential	Residential Apartment Building is permissible with consent	✓
Subdivision	Minimum size 1000m^2	No subdivision proposed	✓
Height of Buildings	Maximum height 35 metres	Proposed height 41.7 metres. A 4.6 has been supplied.	×
Floor Space Ratio	Maximum FSR 3:1	Liverpool City Centre FSR permits a maximum FSR of 3:1 The subject proposes a variation of 7.8%. A clause 4.6 variation has been supplied.	×
Preservation of Trees		See report prepared by NSW Tree Services P/L – Identifies new plantings of the landscape will better suit the site, despite removal of many Silky oaks, Camphor's and Privet. Arborist Assessment attached and marked **Annexure 4**.	✓
Heritage	In the vicinity of Item No: 75	Not considered to have any impact on the item. Heritage Impact Statement attached and marked **Annexure 10**.	✓
Acid Sulfate Soils		Not identified in land classified as Acid Sulfate Soils.	✓
Flood Planning		Not identified in land classified as flood prone.	✓
Sun Access in		Site not affected by measures to	✓

Clause	Details	Comments	Compliance
Liverpool City Centre		protect open space from shadowing.	
Building Separation in Liverpool City Centre	(c) 18 metres for parts of buildings above 35 metres on land in Zone R4 High Density Residential	Please see architecture drawings for building separation with adjoining developments. Architectural Drawings and Design Reports attached and marked **Annexure 2**	✓
Minimum Street Frontage		Site provides a street frontage greater than 50 metres.	✓
Design Excellence in the Liverpool City Centre		Based on the architectural plans prepared by Rothelowman at **Annexure 2**, the development exhibits a high standard of architectural design. The built form, scale and proportion of buildings will contribute and enhance the streetscape of Bigge Street, which is already subject to a series of high rise apartments. The development will improve the quality and amenity of the Liverpool Town Centre.	✓
Development in Flight Paths		The site is not identified within ANEF contour and flight path operation.	✓
Development in Areas Subject to Potential Airport Noise		The site is not identified within ANEF noise contour or within any airport flight path.	✓
Earthworks		It is anticipated the proposed development will result in excavation and filling for the three levels of basement car parking proposed and that appropriate conditions will be imposed by Council to ensure	✓

Clause	Details	Comments	Compliance
		the works are met in accordance with relevant policies and guidelines. Geotechnical report prepared by JK Geotechnics is attached and marked **Annexure 13**.	

5.5 Liverpool Development Control Plan 2008

In order to ensure the proposed development does not propose a significant social and environmental impact, the following principle provisions of LDCP 2008 have been addressed:

Part 1 General Controls for all Development outlined prescribed controls relating to all development, some of which have been identified relevant to this proposal.

Part	Control	Comments	Compliance
PART 1 – GENERAL CONTROLS			
2 Tree Removal	An application to remove a tree may be refused by Council if the tree: Form a prominent part of the streetscape. Is of historic or cultural significance. Is listed under the provisions of the Threatened Species Conservation Act 1995.	An arboricultural report and construction impact assessment has been prepared by NSW Tree Services P/L dated 25 February 2016. The report identifies a number of recommendations and management options for specific trees on site and adjoining land.	✓
3. Landscaping and Incorporation of Existing Trees	Existing trees and native vegetation are to be retained, protected and incorporated into the development proposal.	See arboricultural report prepared by NSW tree Services P/L at **Annexure 4**. The landscaping plan provides a range of plantings and trees throughout the site to generate visual interest, soft screen privacy and enhanced visual amenity. Landscaping Plans provided by Site Design Studios are attached at **Annexure 15**.	✓
6. Water Cycle Management	For developments that require construction of	OSD and Erosion Sediment Control Plan are attached at	✓

Part	Control	Comments	Compliance
(Stormwater Drainage Concept Plan)	stormwater drainage, a SDCP shall be submitted with the Development Application demonstrating the feasibility of the proposed drainage system within the site and connection to Council's system.	**Annexure 12**, demonstrating adequate storm water drainage on the site.	
8 Erosion and Sediment	The Development Application shall be accompanied by either a Soil and Water management Plan (SWMP) or an Erosion and Sediment Control Plan (ESCP) Area of disturbance – greater than 2,500sqm – SWMP required.	OSD and Erosion Sediment Control Plan are attached at **Annexure 12**.	✓
14 Demolition of Existing Developments	Demolition work must comply with the Australian Standard AS2601 – 1991, The Demolition of Structures.	The proposal will involve the demolition of existing structures currently residing on Lot 4 DP 13930 and Lots A-D DP 345161. It is anticipated Council will impose conditions that will ensure demolition work complies with the *Australian Standard AS2601 – 1991, The Demolition of Structures.*	✓
17 Heritage and Archaeological Sites	Development in the vicinity of a heritage item shall be designed to respect and complement the heritage item.	The proposed development is within the vicinity of a heritage item, identified as No. 77 pursuant to LLEP 2008. It is anticipated the proposed development will have minimal impact on the item.	✓
20 Car Parking and Access Car Parking in Liverpool City Centre	Car Parking shall be provided in Liverpool City Centre in Accordance with the following: Residential Development: - 1 space per two studio apartments - 1 space per one bedroom and two bedroom	See Traffic and Parking Impacts Report prepared by TEF Consulting dated 25 February 2016 attached at **Annexure 5**. The proposal provides a total of 265 car spaces over three levels (243 residential and 22	✓

Part	Control	Comments	Compliance
	apartments - 1.5 space per three or more bedroom units - 1 space per 10 units or part thereof, for visitors - 1 space per 40 units for service vehicle (and car washing bays, up to a maximum of 4 spaces per building)	visitor spaces). **Liverpool DCP Requirements** Breakdown of spaces are provided as follows: • 33 x 1bedroom apartments (1 space) = 33 spaces • 152 x 2 bedroom apartments (1 space) = 152 spaces • 36 x 3 bedroom apartments (1.5 spaces) = 54 spaces Total parking requirement 239 spaces. For guest parking the following is applied: 1 space per 10 units or part thereof: • 221 ÷ 10 = 21 spaces 239 + 21 = 260 spaces Development provides 265 spaces. A service area for a Medium Rigid Vehicle or up to 2 utes/vans/SRVs is provided, which also serves as a car wash bay. An additional service vehicle space has been allocated on basement 1 at Council's request. The proposed development is fully compliant with motor cycle and bicycle parking. The demand for visitor spots will be highest during the evening, outside business hours, while service vehicles will generally require access during business hours. The minor deficiency of motorcycle and bicycle parking	

Part	Control	Comments	Compliance
		is compensated by excellent public transport provision.	
20.5 Locations of Driveway Crossings	Driveway crossings shall be locate a minimum distance from the following items: - 0.5m from all drainage structures on the kerb and gutter - 1.0 from side property boundaries - 6m from a kerb tangent point of a street corner	The proposed driveway crossing is located at the southern portion of the site. The driveway crossing is not located on a kerb or within 6 metres of a kerb tangent point of a street corner.	✓
20.6 Width of Driveway Crossings	Driveway crossing widths shall be in accordance with: Number of car parking spaces served by the driveway type. – Major street frontage + 101-300 car parking spaces = 3-4 metres.	The driveway crossing width provided complies with the minimum 3-4 metre width.	✓
20.7 Transport Management Plan	For major developments a Transport Management Plan shall be submitted with the development application	See Traffic and Parking Impacts Report prepared by TEF Consulting dated 25 February 2015 attached at **Annexure 5**.	✓
23 Energy Conservation (Residential)	Dwellings, including multi-unit development within a mixed use building and serviced apartments intended or capable of being strata titled, are to demonstrate compliance with State Environmental Planning Policy – Building Sustainability Index (BASIX). A complying BASIX report is to be submitted with all development applications containing residential activities.	BASIX Certificate is provided in this Development Application.	✓
25 Waste Disposal and Re-use facilities	A Waste Management Plan (WMP) shall be submitted with a Development Application for any relevant activities generating waste. The WMP is provided in three sections: - Demolition,	See Waste Management Plan prepared by Elephants Foot Recycling Solution. The plan provides management for lawful demolition, construction and on-going waste management for the proposed	✓

Part	Control	Comments	Compliance
	Construction, On-going waste management.	development. Please see Waste Management Plan provided and marked **Annexure 7.**	

5.5.1 Part 4 – Liverpool City Centre

Part 4 Development in Liverpool City Centre provides specific provisions and controls relating to the assessment of development within the city centre. The site is located within the city centre as outlined in the DCP 2008 and is zoned R4 High Density Residential along with surrounding land.

Residential development in the Liverpool City Centre is prescribed the following vision:

New residential development will be focused around the northern, western and southern periphery of the city centre area. It is desirable that the frontage to Macquarie Street at Pioneer Park accommodate retail/café/restaurant activities at ground floor with residential and potentially some office space on floors above. The industrial area on Shepherd Street (at the southern extremity of the city centre) will be rezoned to accommodate residential development and a concept plan will be prepared for the site. Planning controls have been reviewed to assist these outcomes.

Part	Control	Comments	Compliance
PART 4 – LIVERPOOL CITY CENTRE 2008			
2 – CONTROLS FOR BUILT FORM			
2.1 Building to Street Alignment and Street Setbacks	Specific street alignment and building setback from Bigge Street is 4-4.5 landscaped setback.	The proposal provides 4.5-5 metres of landscaped areas as a front setback from Bigge Street.	✓
2.1 Street Frontage Heights	Street frontage height of 15-25 metres required (5-7 storeys)	The proposed development provides appropriate frontage height.	✓
2.1 Building Depth and Bulk	All uses up to 12m • Non-habitable rooms side 3m and rear 6m • Habitable rooms side 6m and rear 6m All uses between 12 – 25m • Non-habitable rooms side 4.5m and rear 6m • Habitable rooms side 9m	Please see architecture drawings for building separation with adjoining developments. The proposal development satisfies building separation requirements in all instances, except within the following units, located on the western	✓

Part	Control	Comments	Compliance
	and rear 9m All uses between 25-35m • Non-habitable rooms side 6m and rear 6m • Habitable rooms 12m side and rear 12m	boundary within Tower B: B104, B105, B304, B305, B404, B405, B804, B805. In the instances identified above, screening will be implemented to ensure there are no visual privacy impacts associated with the proposed building separation plans at these unit locations. The ADG is a guide to inform good quality apartment development. We consider that strict adherence of the design criteria should not be applied in all instances, as the owner has endeavoured to establish high quality built form on site recognised as having significant site constraints.	
2.3 Site Cover and Deep Soil Zones	Maximum site cover for development for R4 Residential Zone is 50% 15% to be deep soil zone.	The development provides a site cover of 47% and a deep soil zone of 20%.	✓
2.4 Landscaped Design	Landscapes are to be selected in accordance with Council's schedule of preferred landscape species	The development proposes a communal open space square, which provides beneficial views, recreational opportunities and outlook. An arboricultural report and construction impact assessment has been prepared by NSW Tree Services P/L dated 25 February 2016. Attached and marked **Annexure 4**. The report identifies a number of recommendations and management options for the protection of trees on site and on adjoining land.	✓

Part	Control	Comments	Compliance
		Furthermore, a Landscaping plan has been prepared by Site Design Studios, which provides a range of landscaping measures on site. Attached and marked **Annexure 15**.	
2.5 Planting on Structures	Areas with planting on structures to be irrigated with recycled water.	N/A	N/A
3 – AMENITY			
3.1 Pedestrian Permeability	To provide through site links as shown in Figure 11	NA	N/A
3.2 Active Street Frontages and Addresses	Glazed entries to commercial and residential lobbies occupying less than 50% of the street frontage, to a maximum of 12m frontage.	Tower A proposes a pedestrian lobby that complies with less than 50% of street frontage and is less than 12m. The development provides for a 3 storey podium height of 10.9 metres.	✓
3.3 Front Fences	Front fences include fences to the primary and secondary street frontages, and side boundary fences forward of the building alignment.	The development proposes front solid walls for ground floor units.	✓
3.4 Safety and Security	Ensure that the building design allows for passive surveillance of public and communal spaces, accessways, entries and driveways.	The proposed development provides safe and secure entrances for pedestrians, provides passive surveillance from ground floor units and provides clear lines and walkways around the site.	✓
3.5 Awnings	Street awnings to be provided for all new developments as indicated in Figure 16.	The proposed development will provide weather protection over the main area.	✓
3.6 Vehicle Footpath Crossing	In all other areas, one vehicle access point only (including the access for service vehicles and parking for non-residential uses within mixed use developments) will be	Site provides a vehicle access point on the southern boundary fronting onto Bigge Street.	✓

Part	Control	Comments	Compliance
	generally permitted.		
3.7 Pedestrian Overpasses and Underpasses	Underpasses may be considered for direct connection under adjacent streets to the railway station.	N/A – site does not provide pedestrian underpasses adjacent to a railway station.	N/A
3.8 Building Exteriors	Adjoining buildings (particularly heritage buildings) are to be considered in the design of new buildings in terms of: - appropriate alignment and street frontage heights, - setbacks above street frontage heights, - appropriate materials and finishes selection, - facade proportions including horizontal or vertical emphasis, and - the provision of enclosed corners at street intersections.	The proposed development contributes positively to the streetscape and achieves high quality architecture and provides a robust selection of materials and finishes. In addition, the development provides design responses to adjoining apartment developments and creates a solid build form that facilitates pedestrian amenity and security. The development provides a lower frontage that respects human scale.	✓
3.9 Corner Treatments	Buildings identified in Figures 20 and 21 are to address corner sites through architectural emphasis and use of distinguishing architectural features and materials to adjacent buildings, and an additional storey may be permitted onto the specified street frontage height range	N/A	N/A
3.10 Public Artworks	Public art is to respond to the particular site of the development as well as the city as a whole.	The development is not proposing public art.	✓
4 – TRAFFIC AND ACCESS			
4.1 Pedestrian Access and Mobility	Main building entry points should be clearly visible from primary street frontages and enhanced as appropriate with awnings, building signage or high quality architectural features that	Access to the development is provided safely and securely for residents of the development.	✓

Part	Control	Comments	Compliance
	improve clarity of building address and contribute to visitor and occupant amenity.		
4.2 Vehicle Driveways and Manoeuvring Access		All vehicles accessing the development will enter and leave the site in a forward direction with all manoeuvring occurring on site and within basement levels.	✓
4.3 On-site Parking	Except as separately provided for in the Liverpool LEP 2008, on site vehicle and bicycle parking is to be provided in accordance with Table 3.	See Traffic and Parking Impacts Report prepared by TEF Consulting dated 25 February 2016 attached at **Annexure 5**. The proposal provides a total of 265 car spaces over three levels (243 residential and 22 visitor spaces). **Liverpool DCP Requirements** Breakdown of spaces are provided as follows: • 33 x 1bedroom apartments (1 space) = 33 spaces • 152 x 2 bedroom apartments (1 space) = 152 spaces • 36 x 3 bedroom apartments (1.5 spaces) = 54 spaces Total parking requirement 239 spaces. For guest parking the following is applied: 1 space per 10 units or part thereof: • 221 ÷ 10 = 21 spaces 239 + 21 = 260 spaces Development provides 265 spaces. A service area for a Medium Rigid Vehicle or up to 2 utes/vans/SRVs is provided, which also serves as a car wash bay.	✓

Part	Control	Comments	Compliance
		An additional service vehicle space has been allocated on basement 1 at Council's request. The proposed development is fully compliant with motor cycle and bicycle parking. The demand for visitor spots will be highest during the evening, outside business hours, while service vehicles will generally use the loading area/car wash during business hours and can utilise vacant visitor parking spaces during the day.	
5 – ENVIRONMENTAL MANAGEMENT			
5.1 Energy Efficient Conservation	New dwellings, including dwellings within a mixed use building and serviced apartments intended or capable of being strata titled, are to demonstrate compliance with State Environmental Planning Policy – Building Sustainability Index (BASIX). A complying BASIX report is to be submitted with all development applications containing residential activities.	BASIX Report attached.	✓
5.2 Water Conservation	New dwellings, including a residential component within a mixed use building and serviced apartments intended or capable of being strata titled, are to demonstrate compliance with State Environmental Planning Policy – Building Sustainability Index (BASIX).	BASIX Report attached.	✓
5.3 Reflectivity	Visible light reflectivity from building materials used on the facades of new buildings should not exceed 20%.	The materials incorporated into the overall construction are unlikely to exceed the reflectivity requirement and a	✓

Part	Control	Comments	Compliance
		condition of consent may be imposed to ensure compliance.	
5.4 Wind Mitigation	A Wind Effects Report is to be submitted with the DA for all buildings greater than 35m in height.	Wind Effects Report prepared by Windtech Consultants dated 25 February 2016 is attached and marked **Annexure 8**. The results of the assessment indicates that wind conditions for the majority of the private balconies and communal terrace are expected to be acceptable for its intended uses due to the shielding provided by the proposed development and the effective use of wind mitigating devices such as balustrades, blade walls, screens and the recessed balcony design into the development. Appropriate mitigation measures have also been recommended to ensure wind conditions for all components of the development are acceptable for their intended use.	✓
5.5 Noise	An acoustic report is required for all noise affected locations, as identified in Figure 25. This report is to demonstrate that appropriate noise attenuation and barrier planning is to be implemented.	Site is not located in Figure 25.	N/A
5.6 Waste	Development applications for all non-residential development must be accompanied by a waste management plan.	A Waste Management Plan has been prepared by Elephant Foot Recycling Solutions, which details collection of waste, frequency, storage locations, and ventilation and construction requirements.	✓
5.7 Flood Cycle and Water	The following controls apply to development that is	Site not located in floodplain area.	N/A

Part	Control	Comments	Compliance
Management	located within Councils identified floodplain.		
5.8 Sewer Treatment Plant	Development within 400m of the Schrivener Street Sewage Treatment Plant needs to be referred to Sydney Water for assessment.	N/A	N/A
5.9 Business where Trolleys are required	A daily trolley collection service or a coin operated return system is required for all business' that offer the use of trolleys to their customers.	N/A	N/A
6 – CONTROLS FOR RESIDENTIAL DEVELOPMENT			
6.1 Housing Choice and Mix	To achieve a mix of living styles, sizes and layouts within each residential development, comply with the following mix and size: - studio and one bedroom units must not be less than 10% of the total mix of units within each development, - three or more bedroom units must not to be less than 10% of the total mix of units within each development 10% of all dwellings (or at least one dwelling – whichever is greater) must be designed to be capable of adaptation for disabled or elderly residents.	The proposed development provides a combination of 1, 2 and 3 bedroom apartments: • 14.9% 1 bedrooms • 68.7% 2 bedrooms • 16.2% 3 bedrooms The proposed development adequately satisfies the 10% mix of units required for both 3 bedroom and 1 bedroom units. The proposal displays a high level of housing diversity, with superior offering of 3 bedroom units. All dwellings will be accessible via front entrance from Bigge Street and each Lobby will have lifts to facilitate mobility access for elderly and disabled residents.	✓
6.2 Multi Dwelling Houses	Multi-dwelling housing generally refers to town housing development forms that do not fall under the requirements of SEPP 65 and the Residential Design Code. Where this is the case, the following provisions, in addition to the general provisions of this DCP, apply.	The apartment has been designed to respect the locality, framed and configured appropriately to the streetscape, provides usable private open and communal space, and minimises the visual dominance of car parking with 3 levelled basement parking. Please see Apartment Design Guide for compliance in	✓

Part	Control	Comments	Compliance
		relation to privacy, solar access, communal space and private open space.	
7 – CONTROLS FOR SPECIAL AREAS – NOT APPLICABLE			

6 CONCLUSION

The proposed development involves demolition of existing structures and construction of a residential apartment development at 17-25 Bigge Street.

The proposal involves consolidation of five existing lots, demolition of existing structures and construction of two residential flat buildings, comprising a total of two hundred and twenty one (221) dwellings. The development provides a unit mix of 33 x 1 bedroom apartments, 152 x 2 bedroom apartments and 36 x 3 bedroom apartments. The proposal also provides three levels of basement parking with two hundred and sixty five (265) spaces and associated driveway and landscaping.

The proposed development is generally in compliance with State Environmental Planning Policy No 65 – Design Quality for Residential Apartment Development and the design criteria stipulated in the Apartment Design Guide. The proposal demonstrates a positive contribution and outcome for the locality by providing high quality urban design and additional housing stock.

The proposed development is in compliance with the provisions of Liverpool Local Environmental Plan 2008 and generally in compliance with the principles and objectives of Liverpool Development Control Plan 2008. The site is zoned R4 High Density Residential and is unlikely to result in any adverse impacts to adjoining properties and the surrounding environment.

Where the development does not comply, a 4.6 variation has been submitted. The 4.6 demonstrates that compliance with the standard is unreasonable and unnecessary in this instance.

The proposal succeeds when assessed in consideration of the requirements of Section 79C of the Environmental Planning and Assessment Act 1979 and is suitable for approval by Council.

ANNEXURE 1 – SITE SURVEY

ANNEXURE 2 – ARCHITECTURE DRAWINGS AND DESIGN REPORTS

ANNEXURE 3 – 4.6 VARIATIONS

ANNEXURE 4 – ARBORIST ASSESSMENT

ANNEXURE 5 – TRAFFIC AND PARKING ASSESSMENT

ANNEXURE 6 – ACOUSTIC REPORT

ANNEXURE 7 – WASTE MANAGEMENT PLAN

ANNEXURE 8 – WIND REPORT

ANNEXURE 9 – STAGE 1 ENVIRONMENTAL SITE ASSESSMENT

ANNEXURE 10 – HERITAGE IMPACT STATEMENT

ANNEXURE 11 – BCA ASSESMENT REPORT

ANNEXURE 12 – OSD AND EROSION SEDIMENT CONTROL PLAN

ANNEXURE 13 – GEOTECHNICAL REPORT

ANNEXURE 14 – ACCESS REPORT

ANNEXURE 15 – LANDSCAPING PLAN