architectus™ COX

Burwood Place
42-60 Railway Parade, Burwood

Urban Design Analysis - Appendix 1

for Holdmark Property Group
15 August 2014

Note

1. The concept presented in this report is indicative only, and subject to detailed design and approvals by the relevant authorities. Interested parties must form their own opinions in relation to the matters in this report. Holdmark, Architectus and Cox assume no responsibility for loss suffered by any person arising from any reliance placed upon this report.

2. The information, drawings and artist's perspectives provided within are indicative only and should not be relied upon. This document does not constitute an offer of any kind and in no way binds Holdmark Property Group or any of their respective officers, employees, agents or related entities.

Attachment List (accompanying report)

Attachment A: **Council Meeting Minutes**

Attachment B: **Retail Master Plan** by *Bonnefin and Associates*

Attachment C: **Visual Impact Assessment** by *Architectus Group*

Attachment D: **Floorplan Solar Assessment** by *Architectus Group*

Attachment E: **Aeronautical Impact Statement** by *Landrum & Brown*

Attachment F**: Traffic Modelling** by *Road Delay Solutions*

Attachment G: **Strategic Transport Planning Assessment** by *AECOM*

Attachment H: **Services and Overland Flow** by *Arcadis*

Attachment I: **Heritage Impact Statement** by *Tropman & Tropman Architects*

Attachment J: **Contamination Assessment** by *Douglas Partners*

Attachment K: **Survey** by *Lockley and Associates*

Attachment L: **Economics** by *AEC Group*

Attachment M: **Architectural Drawings** by *COX Architecture*

Attachment N: **Retail Impact Assessment** by *IQ*

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Contents

Executive summary

This Urban Design Analysis report has been prepared by Architectus and Cox for land at 42-60 Railway Parade Burwood which currently accommodates a retail centre known as Burwood Plaza and two commercial office buildings. This study was commissioned by Holdmark Property Group.

Report objectives

The objectives for this report are to:

– Understand the site's strategic planning context, local character and existing planning controls.

– The potential of the site to consolidate the future role of the Burwood Town Centre in the sub-region as the primary urban centre.

– Identify appropriate urban design principles for the site; and

– Prepare a master plan and indicative architectural concept for the site that demonstrates the development potential of the site and the most appropriate built form and public domain.

The site

The site has a rectangular shape, and occupies the majority of two city street blocks situated in the south-western part of the main commercial and retail area of the town centre. The site has street frontages to Railway Parade and Wynne Avenue as well as frontage to Clarendon Place and a planned laneway along the south boundary of the site.

At present the site is occupied by an indoor retail shopping mall that covers the entire eastern portion of the site (including above ground car parking), two commercial buildings and an above ground car park on the western portion of the site.

Strategic context

– Burwood is centrally located between Central Sydney and Parramatta. It is only about a 20 minute train ride in each direction.

– The Greater Sydney Region Plan nominates the Burwood Town Centre as a Strategic Centre and part of an urban renewal area to grow jobs and housing.

– Burwood provides a retail, services and entertainment focus for the area.

– Burwood has excellent rail connectivity and high rail patronage.

Built form and the hierarchy of centres

– Central Sydney is the primary focus for infrastructure and jobs. The planning controls in the City allow for buildings up to 235m (75 residential storeys), with this height control currently under review for higher buildings by the draft Central Sydney Strategy.

– The Parramatta City Centre is one of the three cities of the metropolitan and is referred to as Sydneys second CBD. A 55 storey (243m) development has been approved in Parramatta Square. Parramatta Council has interim support by the state government to remove height restrictions within the CBD. This would permit building heights to be built to the aviation height limit.

– Burwood is identified as a Strategic Centre. Other Strategic Centres include Chatswood, Green Square and Bondi Junction. Typically buildings range in height from up to 20 storeys to 40 storeys in comparable Strategic Centres.

The proposed Master Plan

– A vibrant mix of uses, including high density residential, to reinforce the success of an extended hours retail centre.

– A highly permeable street level activated by retail to all edges. The retail to be complimentary to Burwood Town Centre and focus on fresh food and multi-cultural cafés and restaurants serving the cultural diversity of the area.

– Retail activation at ground level of Railway Parade and Wynne Avenue;

– Through site links and public laneways to break up the large block and increase pedestrian permeability;

– Provide much needed public domain space taking advantage of its northerly aspect. The public domain in private land will be approx 4,100m^2. There is a potential for future DA to include the pedestrianisation of Wynne Avenue. This Plaza would be approx. 3,150m^2 in area measuring 21m x 75m average.

– Podium level built form to achieve a transition in scale from the street to tall, slender towers generally setback above.

– Location and orientation of towers to address views, minimise overshadowing and achieve wide separation and be compatible with neighbouring development.

– Provide car parking and loading in basement levels and have no above ground car parking.

Master Plan data	
Site Area m^2 (excluding Wynne Ave)	14,363m^2
Overall FSR	10.54 :1
Non-residential FSR	3.37:1
Residential FSR	7.16:1
Approx. GFA m^2:	
Non residential GFA	48,467m^2
Residential GFA	102,858m^2
Total GFA	**151,325m^2**

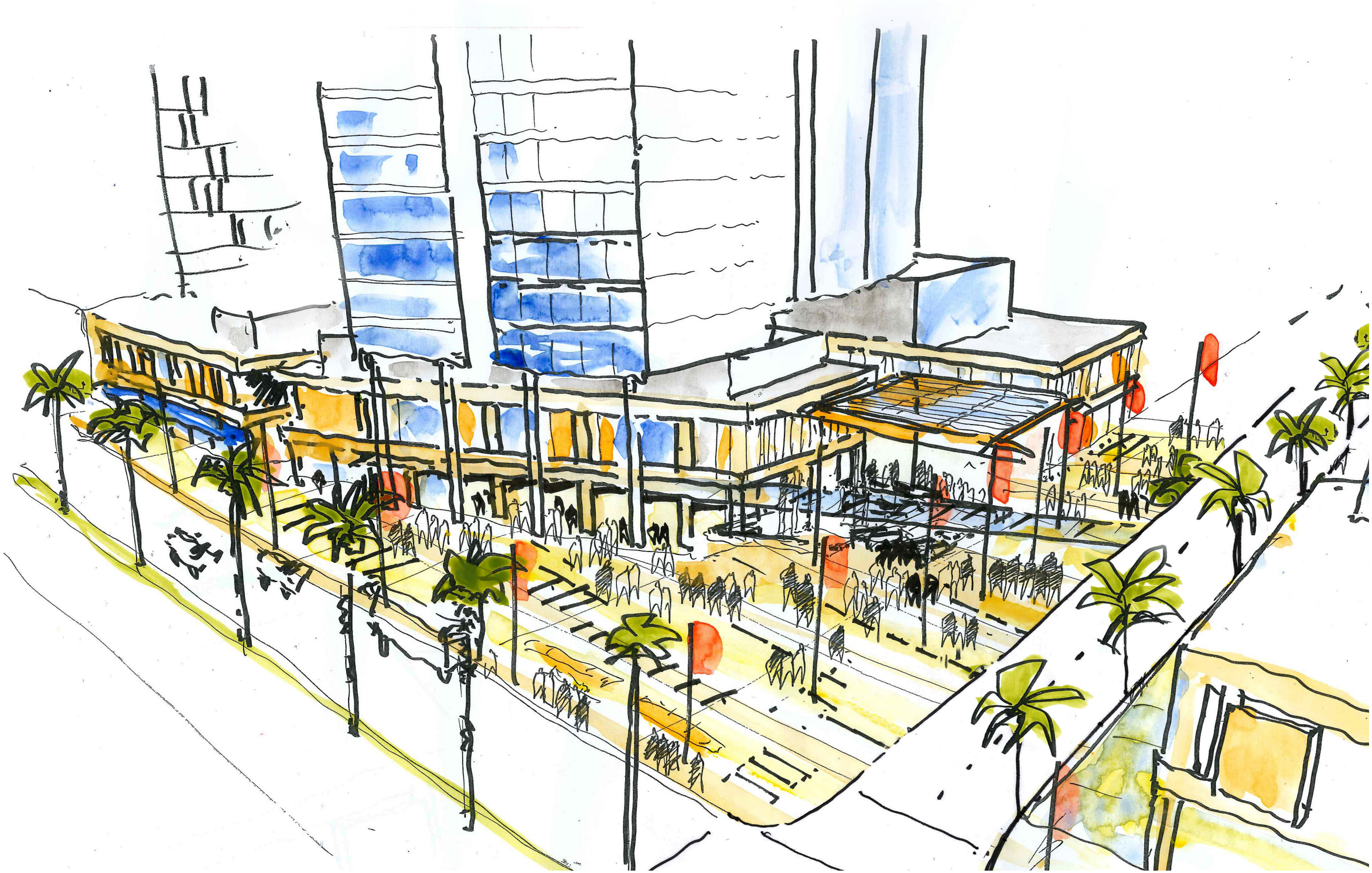

Figure 1. Indicative visualisation of the proposed master plan - view from Railway Parade looking south to public domain, which will be a major civic focal point and meeting area for the Burwood Town Centre which is lacking south of the rail line.

1.0 Introduction

1.1 Purpose of this report

This report has been prepared by Architectus and Cox on behalf of Holdmark for land at 42-60 Railway Parade Burwood which currently accommodates a retail centre known as Burwood Plaza and two commercial office buildings as well as the northern area of Wynne Ave.

Report objectives

The objectives for this report are to:

– Understand the site's strategic planning context, local character and existing planning controls.

– The potential of the site to consolidate the future role of the Burwood Town Centre in the sub-region as the primary urban centre.

– Identify appropriate urban design principles for the site; and

– Prepare a master plan and indicative architectural concept for the site that demonstrates the development potential of the site and the most appropriate built form and public domain.

Accompanying Reports

This report is to be read in conjunction with the following accompanying reports:

– Attachment A: Council Meeting Minutes

– Attachment B: Retail Master Plan (by Bonnefin and Associates)

– Attachment C: Visual Impact Assessment (by Architectus Group)

– Attachment D: Floorplan Solar Assessment (by Architectus Group)

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– Attachment L: Economics (by AEC Group)

– Attachment M: Architectural Drawings (by Architectus + COX)

– Attachment N: Retail Impact Assessment (by Location IQ)

The site

The site is within the Burwood Town Centre. The site has a rectangular shape, and occupies the majority of two city blocks (either side of Wynne Ave) situated in the south-western part of the main commercial and retail area. The site has street frontages onto Railway Parade and Wynne Avenue as well as a frontage to Clarendon Place and a planned laneway along the south boundary of the site.

At present the site is occupied by an indoor retail shopping mall that covers the entire eastern portion of the site (including above ground car parking), two commercial buildings and an above ground car park on the western portion of the site.

Vehicle access to the site is provided from two points, both on Wynne Avenue.

Immediately to the west of the site is Council's recently refurbished library and surface car park.

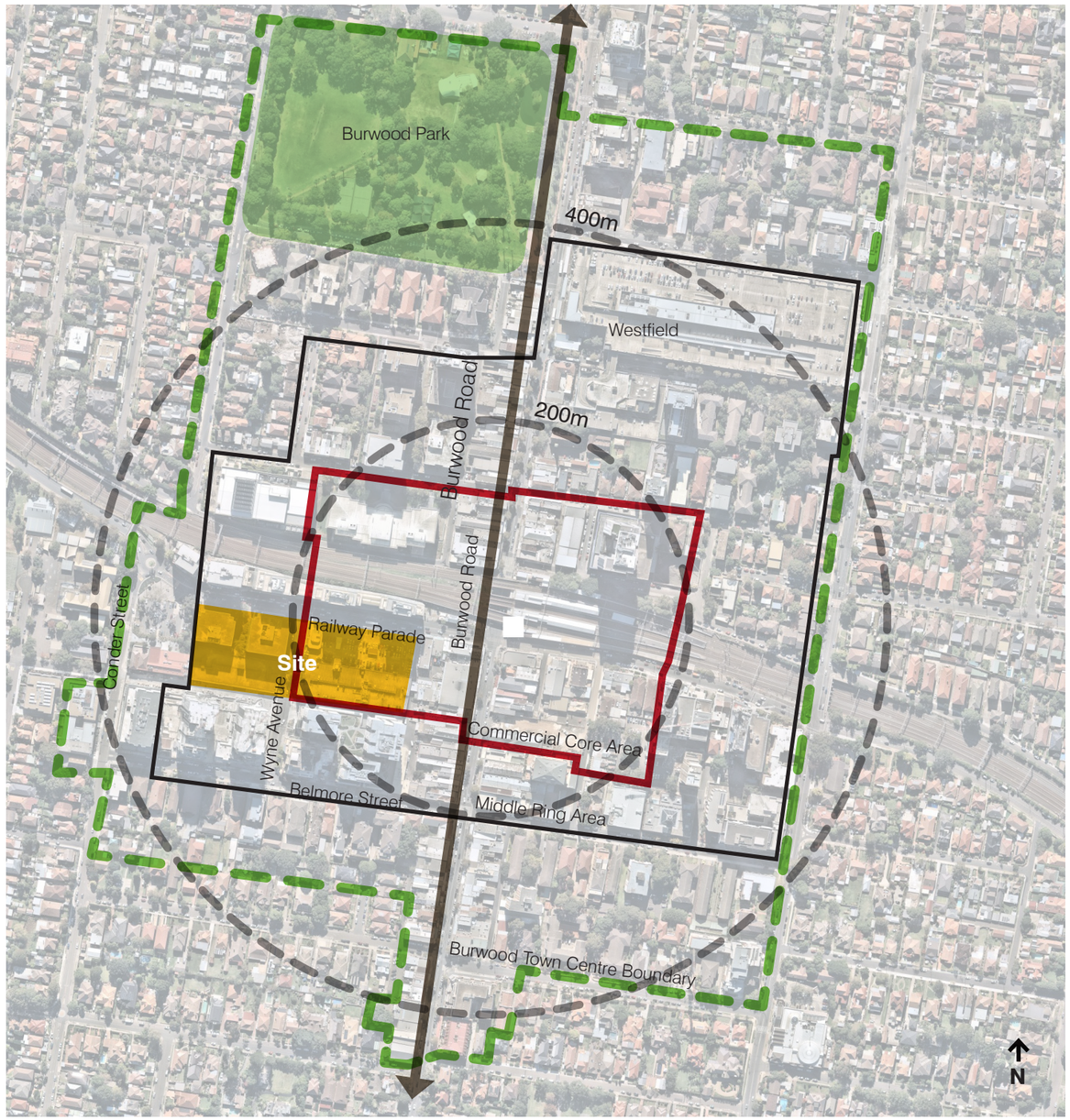

Figure 2. Site Location Plan: The site is within the Commercial Core Area and the Middle Ring Area of the Burwood Town Centre as described in the local Burwood planning controls.

1.2 Site context

Transport

– The site is well connected to major public transport infrastructure, being less than 200m from a major train station offering express services to central Sydney and Parramatta, complemented by frequent bus services.

– Potential bus lanes along revitalised Parramatta Road.

– Potential bus interchange at Burwood

– Future potential light rail route from Parramatta to Sydney Olympic Park.

– The Burwood Town Centre is located close to the WestConnex motorway.

Services

– Located in close proximity to existing jobs and employment hubs.

– The site is well located close to a diverse retail offer including a major Westfield shopping centre and a main-street of speciality retail shops on Burwood Road.

– The site is close to schools, major open space and community services

Demographic summary

– At the 2016 census, the population was 38,495 residents.

– Burwood is a relatively dense LGA. For its 715 hectares it has a population density of 53.85 persons/ hectare (compared to 4.07 persons per hectare for Greater Sydney, and considering that the City of Sydney LGA has a population density of 83.90 persons/ hectare). In the Burwood Council area, 60.2% of the dwellings were medium or high density, compared to 43.8% in Greater Sydney.

– In 2016, 54% of people in the Burwood Council area, came from countries where English was not their first language. 20.6% were born in China, and the next four most prominent countries of birth were India (4.3%), Nepal (3.5%), South Korea (3.4%), and Italy (2.8%).

– 68.6% of people spoke a language other than English at home in 2016.

– 81.8% of the population work outside of the Burwood LGA, so transport links to areas of employment are important. This statistic may also mean that there is some opportunity to provide more jobs in the LGA.

– The age profile in Burwood is generally consistent with the profile for Greater Sydney, with the exception of:

  – marginally more “young people in the work force (25-34)” at 32.1%, where the Greater Sydney average is 25.1%

  – marginally more “Tertiary education and independence (18 to 24)” at 12.7%, where the Greater Sydney average is 9.5%

– Consequently, the demographic profile suggests that a high density mixed use development on the site would help to serve local accommodation needs, employment space and provide a better retail and fresh food offering.

Immediate Surroundings

– North of the site is Railway Parade, Burwood Train Station and ‘1 Railway Parade’, an existing mixed use development;

– West of the site is Condor Street with Burwood Primary School, Burwood Library and ground level Council car park;

– South of the site is Belmore Street with ‘Emerald Square’ (formally known as B1 Square) and ‘Burwood Grand’, two mixed use retail and residential developments. Construction at Emerald Square has completed and Burwood Grand is currently under construction.

– East of the site is Burwood Road with existing two storey shop-top housing and retail ground floor, there is a DA approval for ‘Burwood Central’.

The accompanying photographs show the context of the site (121-133 Burwood Road & 38-40 Railway Parade). Generally the site and surrounding is low grade/lacklustre development. The opportunity is to inject life and vitality to the public domain and provide and outstanding development for people to enjoy.

Figure 3. To the north-east of the site is located a heritage item which has been converted to a cafe and plaza. Burwood Train Station is to the right of this image. In the background, 1 Railway Parade is visible.

Figure 4. West of the site there is a ground level Council car park (foreground), and the two storey building in the background is Burwood Library. (Note, the site is the commercial building on the left).

Figure 5. East of the site are typical two storey shop-top housing on Burwood Road, some of which are heritage items. 1 Railway Parade is visible in the background. Burwood Grand is under construction.

Figure 6. Burwood Park looking south towards the site.

Figure 7. Railway Parade, looking east towards the train station, the site is to the right.

Figure 8. The intersection of Burwood Road and Railway Parade and Burwood train station.

Figure 9. View of Wynne Avenue looking north, with the site on either side.

Figure 10. View towards the site and Council's refurbished library entrance.

Figure 11. The intersection of Burwood Road and Railway Parade, looking towards the site in the background. Construction cranes of Emerald Square are in the background.

1.3 Local attractions

Local Character

– Burwood Town Centre has strong street-based shopping on Burwood Road complemented by a major shopping centre at Westfield.

– Several historic and heritage listed buildings are located within close proximity to the site including the former Council Chambers, Burwood Primary School and the Post Office building. These provide a strong civic and cultural backdrop to the town centre and to the site.

– Council has identified a 'heritage trail' in the town centre focused on the southern side of the railway line. Notably, the site offers the 'missing link' between the start and finish of the heritage trail.

– The site provides a potential retail anchor south of the rail line and complements Burwood Road retail and the Westfield shopping centre. The redevelopment of the site will help to anchor the southern part of the Town Centre with Westfield as the northern 'anchor'.

Site boundary

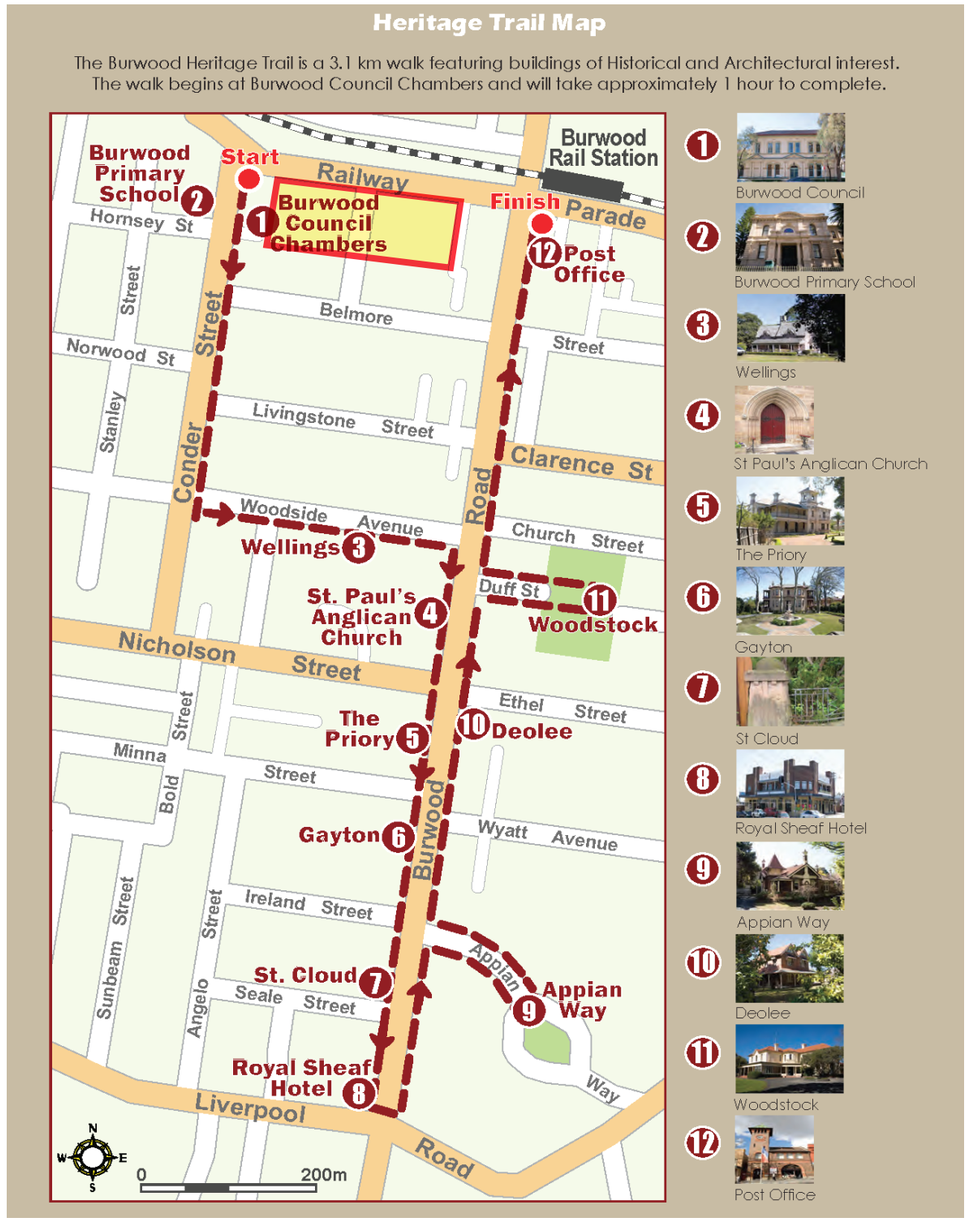

Figure 12. Burwood Council's heritage trail map, the site would complete the loop between the start and finish points of the heritage trail.

Figure 13. Burwood Primary School, opposite the site to the west, is a heritage item.

Figure 14. The heritage Post Office building.

1.4 Adjacent planned development

The site is adjacent to several recently approved and/or constructed developments:

Emerald Square (Completed) south of the site:

– 3 storey podium and 12, 13 & 14 storey residential towers.

– 210 residential apartments

Burwood Grand (under construction) south of the site:

– 3 storey podium and 10, 19 & 19 storey residential towers.

– 409 residential apartments

– 90 serviced apartments

Burwood Central
(DA Approved) east of the site:

– 20 storey tower

– 4 storey retail & commercial podium

– 56 serviced apartments

– 68 residential apartments

Figure 15. Emerald Square (27-31 Belmore Street).

Figure 16. Burwood Grand (39-47 Belmore Street).

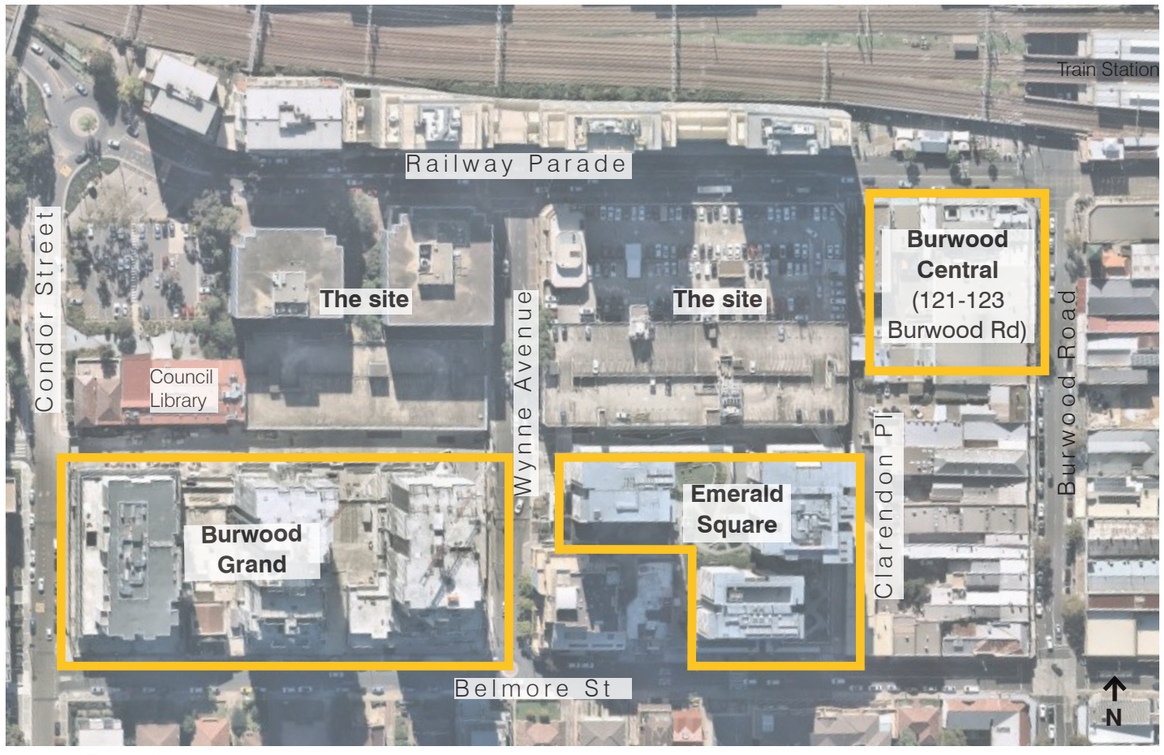

Figure 17. Location Plan.

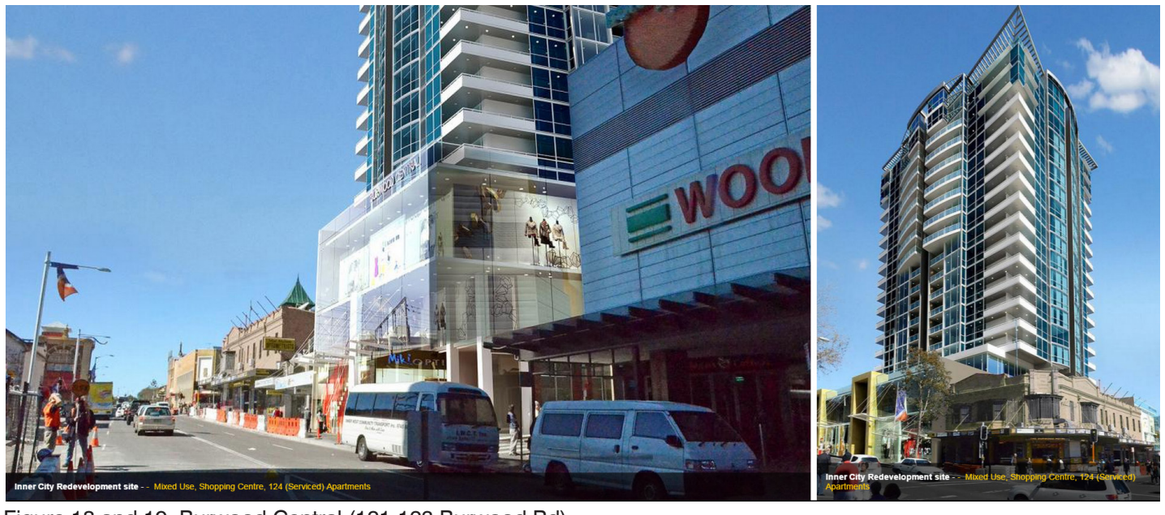

Figure 18 and 19. Burwood Central (121-123 Burwood Rd).

1.5 Existing building heights in Burwood

As indicated in this image the Burwood Town Centre consists of a range of different heights, with the maximum of 25 storeys on the northern side of the town centre.

Directly opposite the subject site is 1 Railway Parade which have a maximum height of 19 storeys.

Key

- Site boundary
- Area 1 boundary
- Area 2 boundary
- Town Centre boundary
- Tall buildings
- 1 Storeys

Figure 20. Existing tall building heights in Burwood Town Centre (view looking south), maximum height limits with the town centre at present is equivalent to 25 storeys residential.

1.6 Planning controls summary

Existing Planning controls - Burwood Local Environmental Plan 2012

Land Use Zoning

The land use is Zone B4 Mixed Use which permits all of the proposed uses.

Height of Buildings

The maximum building height of the site is 60m on the west portion and 70m on the east portion.

This master plan proposes significantly higher heights than this which is justified in this document.

The subject site is also within Area A, where height plane controls also apply (see page 16).

Floor Space Ratio (FSR)

The maximum FSR for the site is 4.5:1 on the west portion and 6.0:1 on the east portion. This averages to 5.25:1 for the whole site

There is an LEP requirement for a minimum non-residential/employment of 40% of the maximum FSR. This equates to approximately 40,000m^2 GFA. The master plan provides 48,467m^2 GFA of non-residential/ employment space. This Master Plan exceeds this amount.

Area 1 residential GFA must not exceed 2.0:1.

Area 2 residential GFA must not exceed 3.0:1.

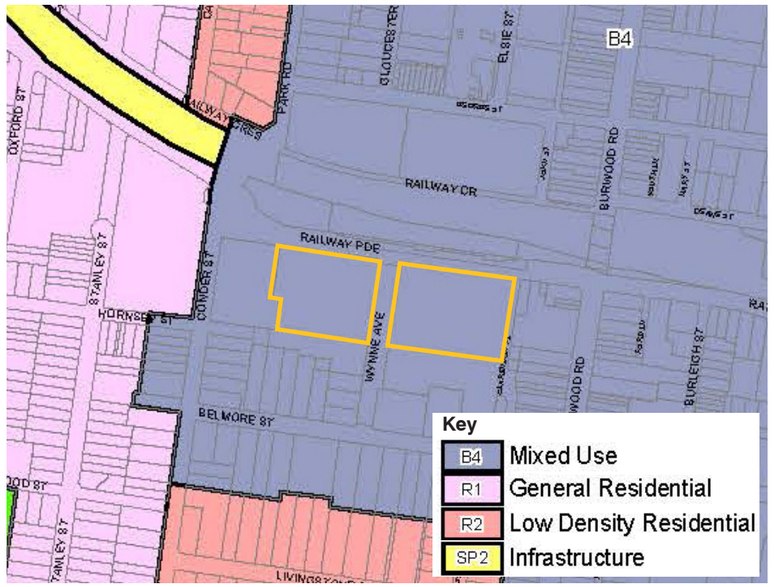

Figure 21. Land Zoning Map Burwood Local Environment Plan 2012.

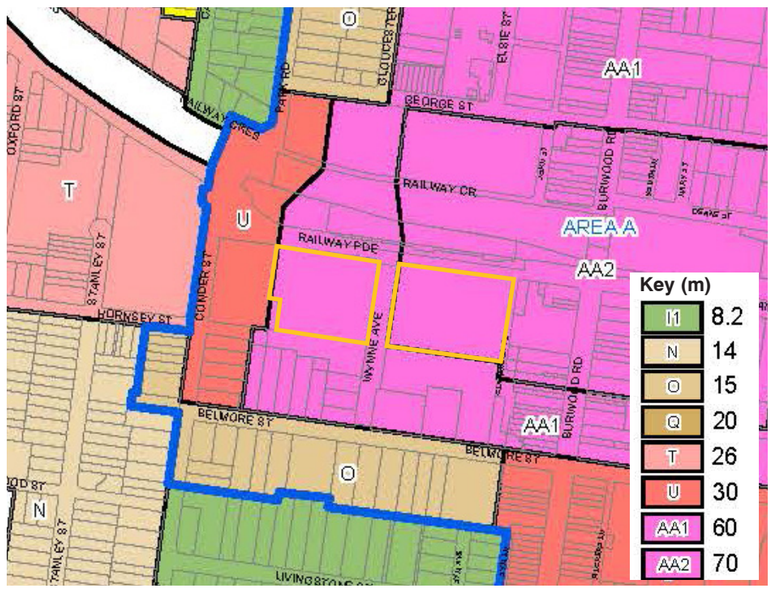

Figure 22. Height of Building Burwood Local Environment Plan 2012.

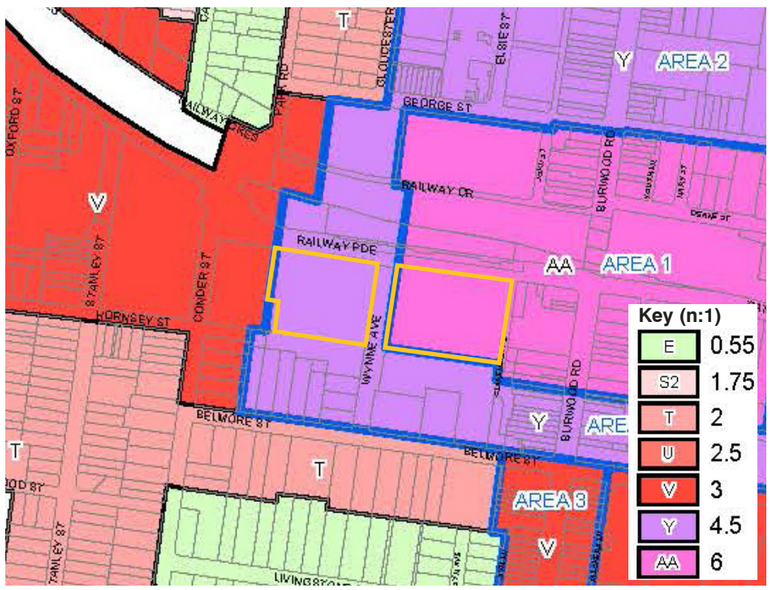

Figure 23. Floor Space Ratio Local Environment Plan 2012.

Existing Planning controls - Burwood Local Environmental Plan 2012 (continued)

Heritage

There are no heritage items on the site, however several heritage items are located in the vicinity including the Council Library to the west of the site which is a local heritage item.

Active Street Frontage

An active street frontage is required to Railway Parade for the eastern portion of the site. This master plan proposes active frontages to all street fronts.

Figure 24. Heritage Local Environment Plan 2012.

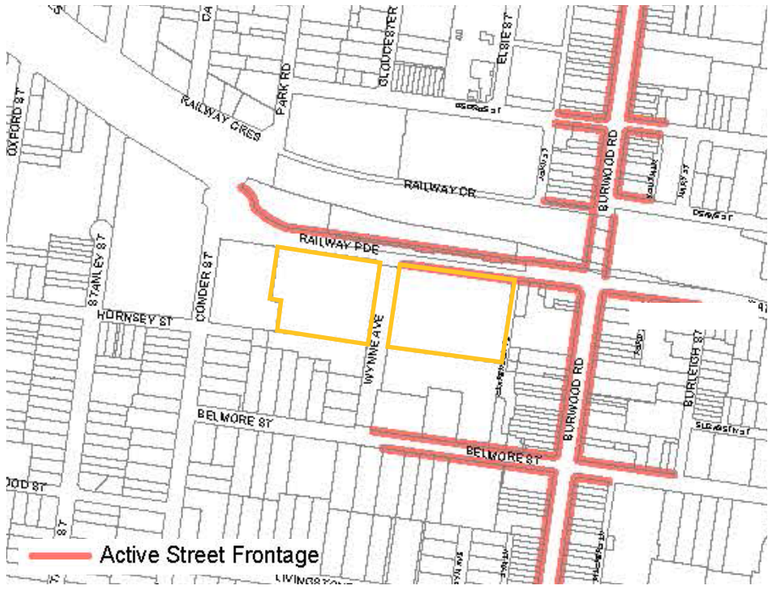

Figure 25. Active Street Frontage Local Environment Plan 2012.

Planning controls - Burwood Development Control Plan 2012

Burwood Town Centre Areas

The eastern portion of the site is within the “Commercial Core” of the Town Centre and the western portion of the site is within the “Middle Ring Area” of the Town Centre. This reinforces the centrality and importance of the site for Burwood’s future. Council envisages mixed use developments within both commercial core and middle ring precincts.

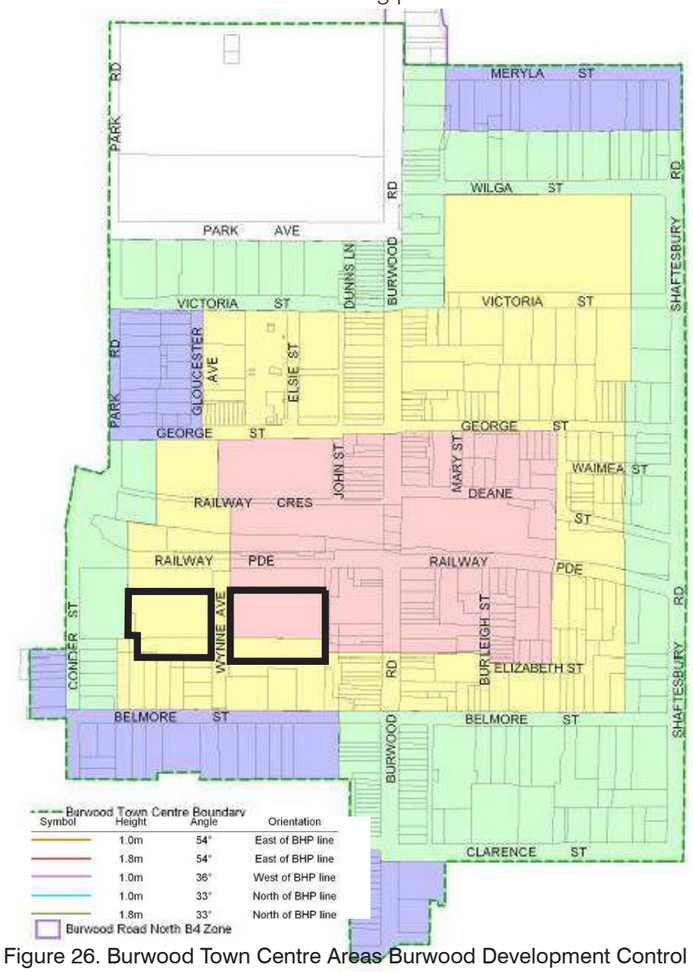

Figure 26. Burwood Town Centre Areas Burwood Development Control Plan 2012.

Building Height Plane

Building height planes spring from the perimeter streets of the Town Centre.

Figure 27. Building Height Plane Development Control Plan 2012.

Street Front Setbacks

A street front setback of 3m is required. This master plan provides for dedicating 3m to a bus parking lane for the full frontage of the site to Railway Parade and also proposes to set back buildings to accommodate a 5m wide footpath to the full length of the site.

Figure 28. Street front setbacks Development Control Plan 2012.

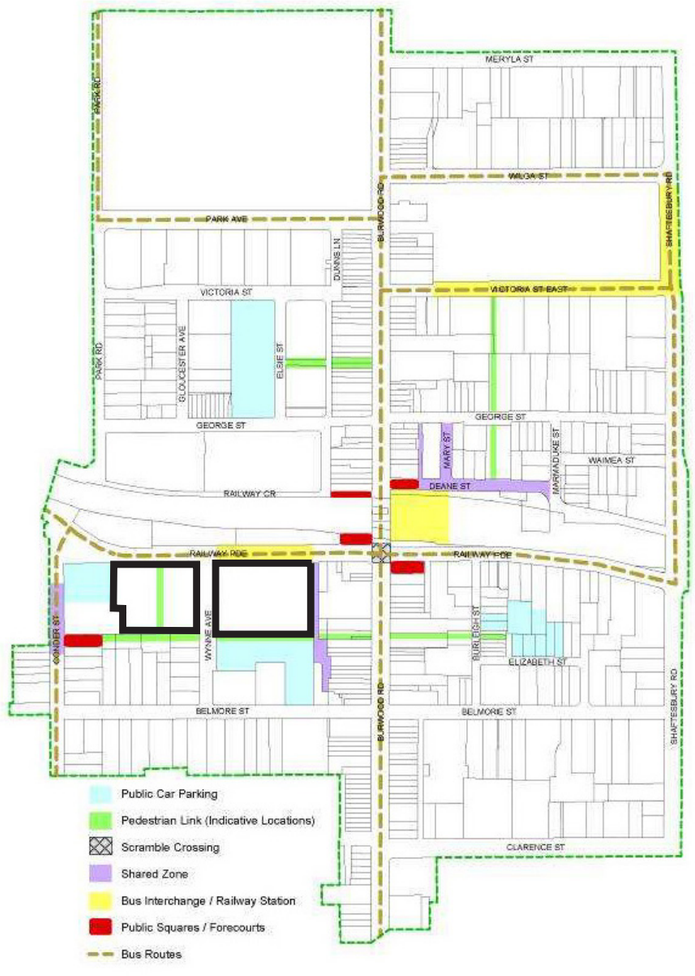

Figure 29. Public Domain Strategy Development Control Plan 2012.

Figure 30. Public Square & Forecourts Development Control Plan 2012.

Pedestrian Links

As outlined in Council's DCP, the required pedestrian links affecting the site are the east-west links along the south boundary and the north-south link in the western portion of the site.

This master plan addresses the east west-west link with an active frontage. The master plan moves the north-south link westward to define the western boundary of the site and the Council Library and future park. This location provides for a better interface with Library and Council car park site (future park).

Figure 31. Pedestrian Links Development Control Plan 2012.

Location of Lanes

Clarendon Lane is an existing lane along the eastern boundary of the site. This master plan provides an active edge to this lane and a pedestrian entry to the retail centre from this lane.

Figure 32. Location of Lanes Development Control Plan 2012.

Land Reservations for Acquisitions

The DCP requires a 3m strip of land to be acquired by Council along the eastern portion of the site which fronts Railway Parade.

This master plan enables this to occur for the full frontage of the site plus a 5m wide footpath to the full frontage of Railway Parade.

Other DCP Relevant Controls

The DCP requires a podium / street wall height of 14m. This is generally achieved by the 3 storey retail /entertainment podium with high floor to floor heights in the concept design for the planning proposal.

Figure 33. Land Resevations for Acquisitions Development Control Plan 2012.

1.7 Site Survey

A site survey has been prepared by Lockley and Associates and accompanies this PP at Attachment K.

– The site area is 14,363m² (Lot 16 DP 832440 and Lot 1 DP 588368).

– The site slopes from 21.5m to 19.1m on Wynne Avenue, 22m to 19.6m on the eastern boundary and 25.4m to 21.7m on the eastern boundary.

– The site is affected by the following easements:
  – (A) right of way
  – (B) right of way
  – (C) right of way
  – (D) right of way
  – (E) easement for electricity purposes
  – (F) easement to drain water
  – (G) right of way
  – (H) substation premises
  – (J) right of way
  – (S) land benefited by right of way
  – (T) right of way
  – (U) right of way
  – (V) easement for electricity purposes
  – (W) substation premises

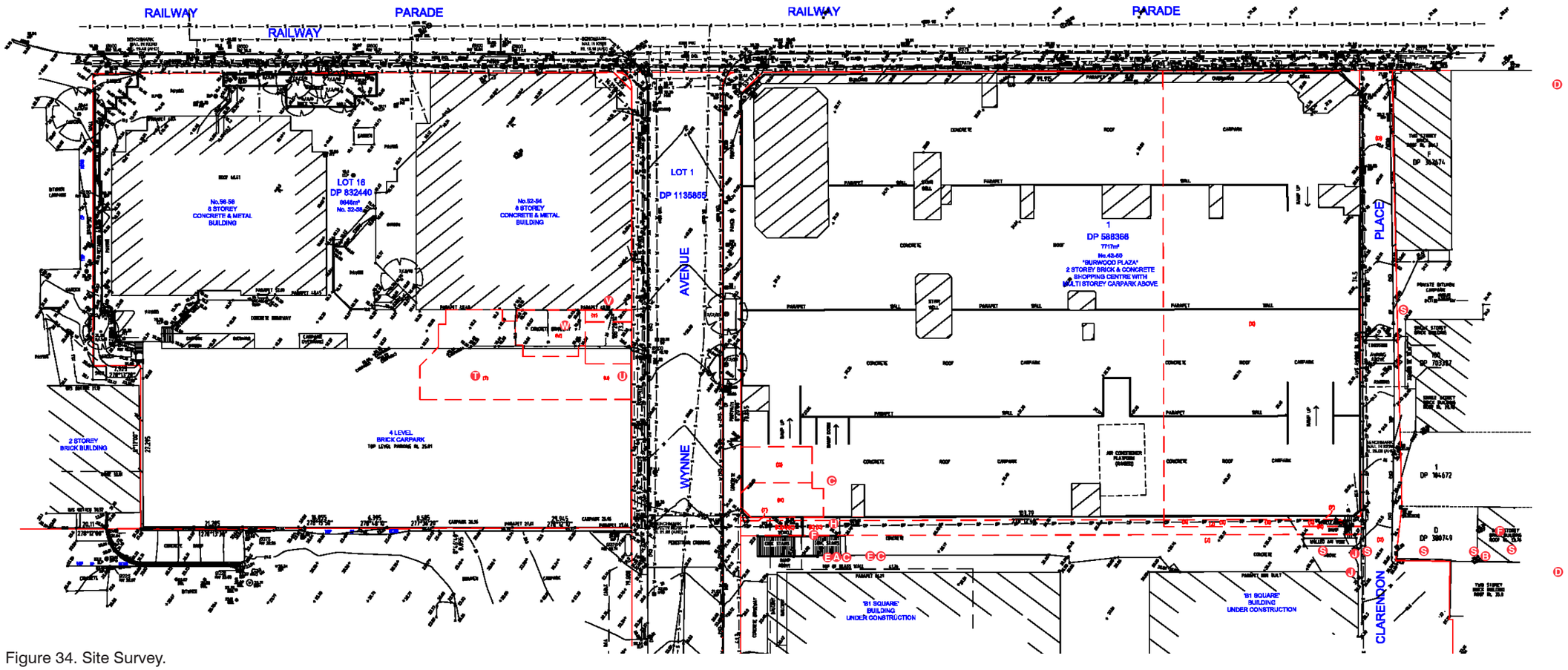

Figure 34. Site Survey.

2.0 Strategic Context

2.1 Strategic planning context - hierarchy of centres

Burwood's strategic location

– The Greater Sydney Commission released the Greater Sydney Region Plan in March 2018, which outlines a series of actions to coordinate the growth of Sydney. The Plan has identified Burwood as a Strategic Centre and within the Eastern Harbour City.

– The plan outlines that density has increased across the urban area; in the central and eastern areas the traditional quarter-acre block has diminished in size; more intense development is evident from the City of Sydney to Mascot and in Parramatta and Burwood.

– Burwood provides a retail, services and entertainment focus for a large part of the western part of the Central subregion, where Centres are more sparse than in other subregions. Sydney Olympic Park is the closest Strategic Centre, but does not have the same attractions or catchment as Burwood strategic centre.

– Burwood has extremely good rail connection and high rail patronage.

– Significant infrastructure investment is occurring within the area by the State Government which is significantly improving the accessibility and connectivity of Burwood within the greater Sydney metro area, including:

  – The WestConnex traffic tunnel with its western entry portal near Parramatta Road / Burwood Road intersection.

  – The planned Light Rail Corridor from Parramatta to Olympic Park.

  – The Parramatta Growth Corridor and with this focus on infrastructure comes a responsibility for increased provision of housing and jobs in the area.

  – Potential bus lanes along the revitalised Parramatta Rd corridor.

  – Potential bus interchange in the Burwood town centre.

Built form and the hierarchy of centres

– Central Sydney is the primary focus for infrastructure and jobs. The planning controls in the City allow for buildings up to 235m (75 residential storeys) with this height control currently under review for higher buildings by the draft Central Sydney Strategy.

– Parramatta is one of the Three Cities of the metropolitan region. Council and the State Government are currently in a process to amend the controls with the state providing interim approval to revise height limits so that the aviation height limit is the effective limit. Currently there are approvals for up to 55 storeys.

– Burwood is identified as a Strategic Centre in the Greater Sydney Region Plan. These are priority locations for employment, retail, housing, services and mixed uses".

Other Strategic Centres include:

– Green Square Town Centre – the community focus for the southern areas of the Sydney City local government area with new parks, retail centres and services and building heights up to 28 storeys.

– Sydney Olympic Park: Significant open space and sporting facilities are complemented by 20-35 storey development in this centre.

– Chatswood: heights up to 40 storeys have been built.

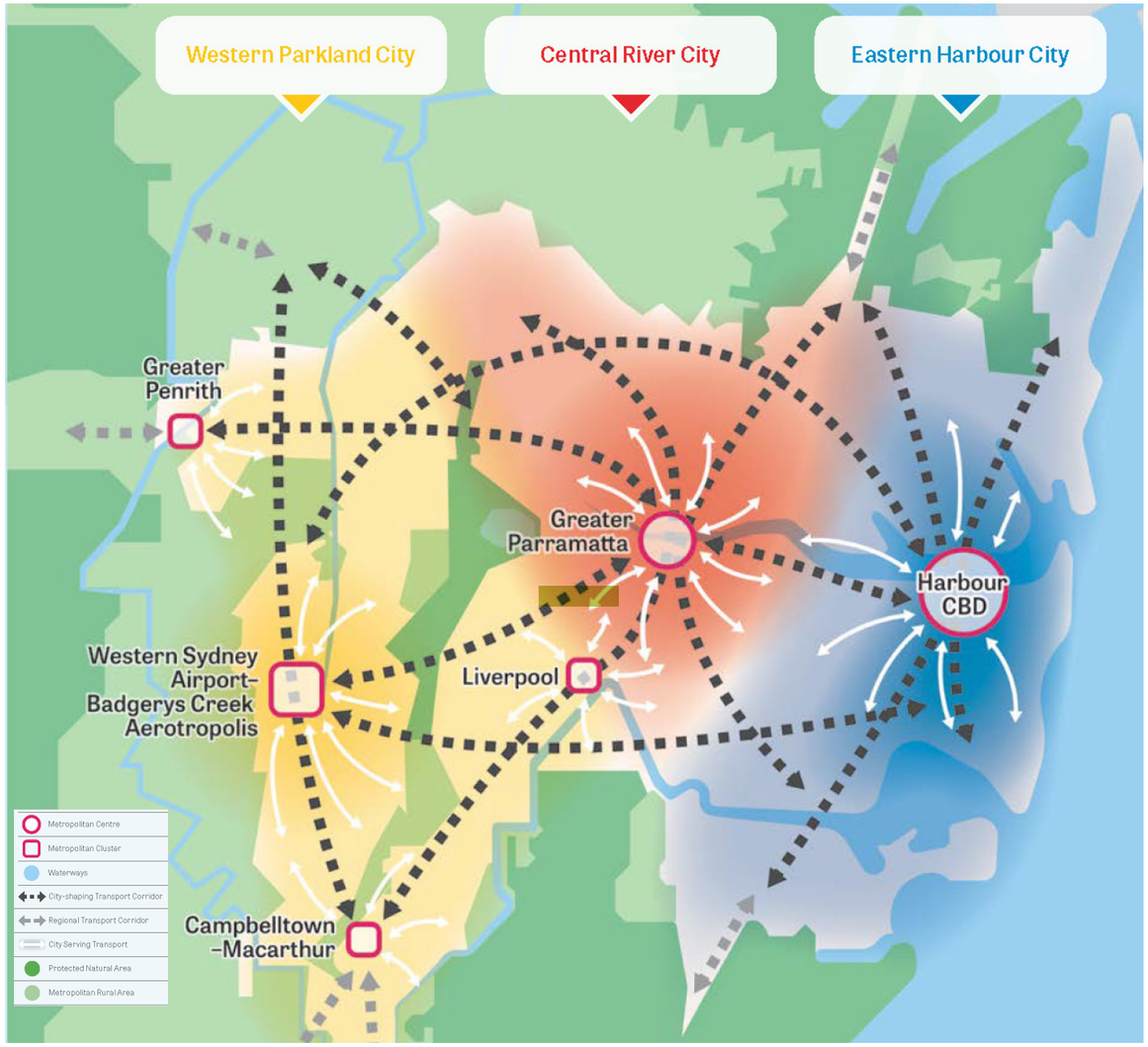

Figure 35. **Greater Sydney Region Plan - Burwood is a strategic centre for delivering housing and jobs.**

Eastern City District Plan

– The subject site is within the Burwood Local Government Area (LGA), which forms part of the Eastern City District. As can be seen below, Burwood is nominated as a Strategic Centre, forms part of an Urban Renewal Area, and is serviced by a City Serving Transport Corridor as well as an existing heavy rail station.

– The table below sets five-year housing targets for the Eastern City District, including the Burwood LGA. These are based on the District's dwelling needs and existing opportunities to deliver supply. Burwood requires an additional 2,600 dwellings by 2021. Burwood also requires a total of 12,000 to 14,000 jobs by 2036.

LGA	0–5 year housing supply target: 2016–2021
Bayside	10,150
Burwood	2,600
Canada Bay	2,150
Inner West	5,900
Randwick	2,250
Strathfield	3,650
City of Sydney	18,300
Waverley	1,250
Woollahra	300
Eastern City District Total	46,550

Figure 36. 5 year housing targets for Eastern City District

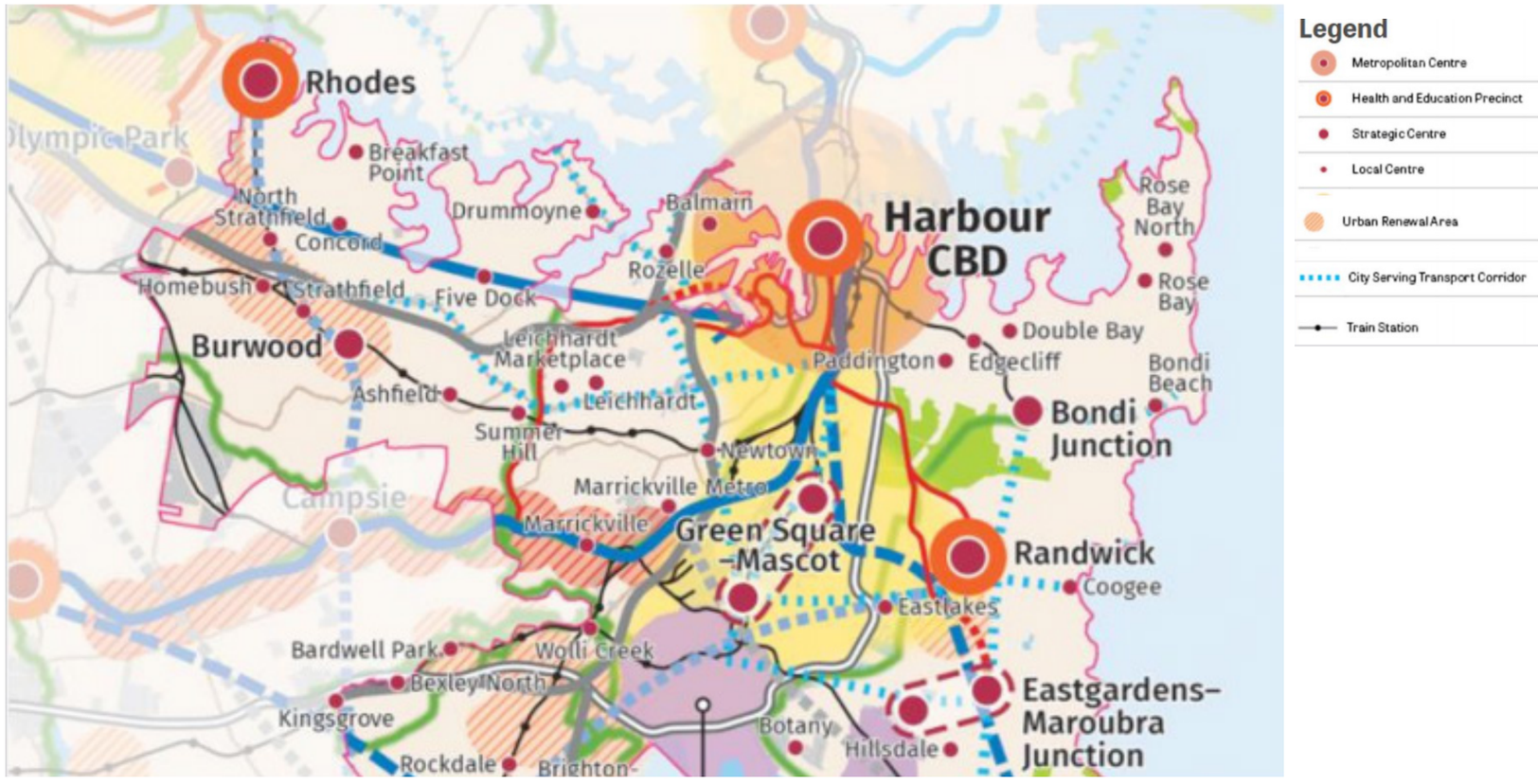

Figure 37. Greater Sydney Region Plan - Eastern City District Plan.

Burwood	Jobs
2016 estimate	10,300
2036 baseline target	12,000
2036 higher target	14,000

2.2 Future Transport Strategy 2056

– In 2018, the NSW Government released the Future Transport Strategy 2056. The strategy sets the direction for transport in NSW for the next 40 years. It has been developed to support the Greater Sydney Region Plan - A Metropolis of Three Cities, where people have access to jobs and services within 30 minutes by public transport.

– The plan references several long term public transport related initiatives which would serve Burwood and its surrounds, as described below. A new 'city serving corridor' is proposed between Burwood and the Sydney CBD. Other long term public transport initiatives serving Burwood include upgrades to existing rail capacity, as well as a new western Sydney heavy rail line.

Figure 38. Future Transport Strategy 2056.

2.3 Parramatta Road corridor and proximity to train stations

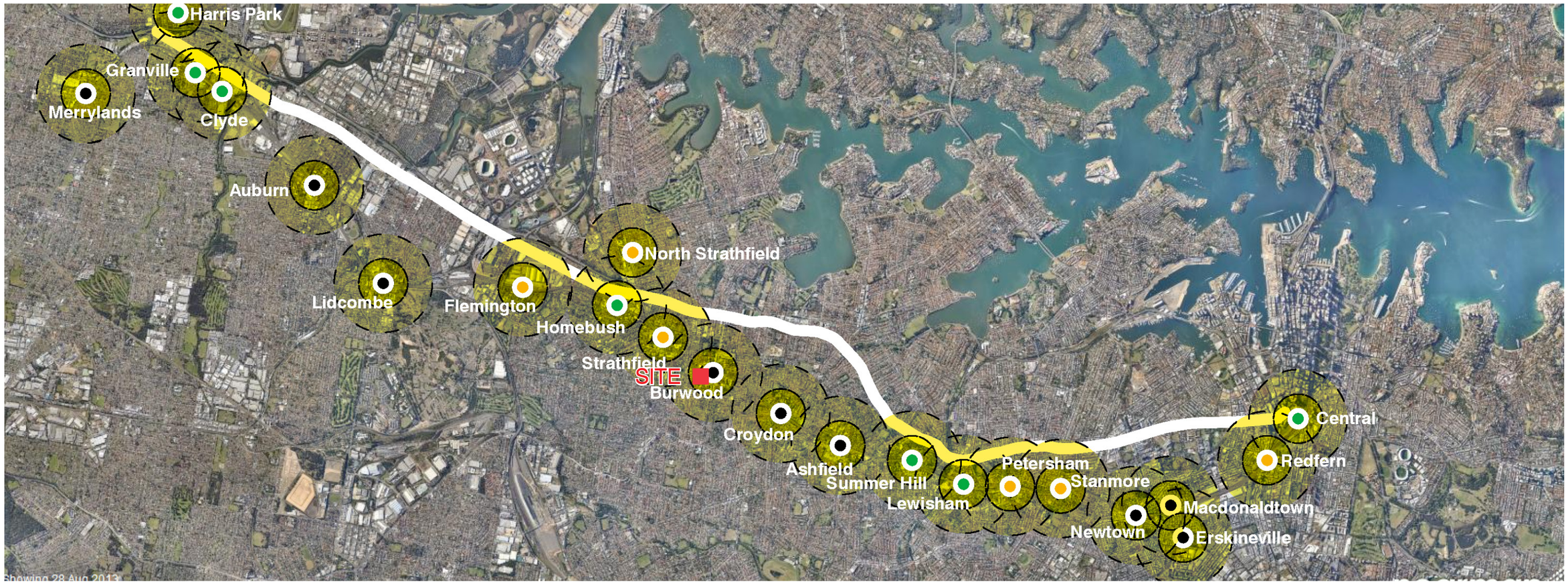

Figure 39. Draft Parramatta Road Urban Renewal Strategy

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As outlined in the above diagram, the Burwood Town Centre is near a cluster of rail stations near Parramatta Road that is currently the focus of greater intervention and development under the Greater Sydney Region Plan the site is within 100m walking distance of Burwood rail station.

2.4 Strategic Centre Planning

Given the site's unique characteristics, being the largest land holding in close proximity to public transportation infrastructure, one of the site's key opportunities is to implement town centre urban design principles for strategic centres.

Strategic centres encourage high density mixed use development within walking distance to public transportation infrastructure such as train stations. It has the potential to decrease car dependency through increased patronage on public transportation whilst improving the urban amenity of the area and also providing affordable housing.

The proposed design concept aligns with the main principles, as outlined below:

– Reduce Car Dependence: The subject site is located within walking distance to the Burwood Train Station, which connects Burwood to other centres such as the Sydney and Parramatta CBDs and also Sydney Olympic Park. The proposal is therefore capable of providing a large amount of housing and jobs in a highly accessible location. This has the potential to ultimately reduce car dependency whilst maximising existing public transport infrastructure.

– Travel Choices: Several transportation options are currently available within the Burwood Town Centre, including bus and rail services.

– Housing: Given the large parcel of land, the proposal is capable of increasing housing availability, affordability and choice, by providing a large range of apartment sizes.

– Employment: The site has the potential to include a significant amount of commercial and retail floor space. This will provide employment opportunities and retail services for existing and future residents within this region of Sydney.

– Mixture of Uses: The proposal will provide a range of land uses within the one location including residential, commercial and retail. This this will make efficient use of existing infrastructure and services, whilst encouraging sustainable living.

– Active and Vibrant Streets: The current built form along the ground level, currently lacks active street frontages. The proposed development is capable of activating the surrounding streets with a variety of complementary land uses which will ultimately encourage and promote social interaction between pedestrians.

– Public Spaces: The proposal has the potential to include the provision of community public spaces. These spaces will provide a safe environment for pedestrians whilst enhancing social interaction.

2.5 Building heights and density in centres of Sydney

The following provides a summary of building heights and densities being planned within Regional Centres, Strategic Centres and Priority Precincts in the Sydney metropolitan area.

Regional Centre and Strategic Centres typically have high densities and building heights of 20 - 55+ storeys. Better quality high rise design and better quality public domain are important in ensuring the liveability of these centres in the long-term.

The site compares well to many of these precincts and centres, with its strong links to some of Sydney's key centres and major transport connections. The proposal responds to these heights and densities suitable to the role of Burwood Town Centre in the hierarchy of centres in the metropolitan area.

Parramatta Regional Centre

– A recent review of the controls by Parramatta Council recommended the removal of maximum building height controls in the City Centre, with expected development of more than 55 storeys. The approved 'Aspire' tower is for 55 commercial storeys (pictured) and is located on the Parramatta Civic Square and near Parramatta Rail Station

Chatswood (Strategic Centre)

– Building heights up to 55 storeys

– FSR 10+:1 (Chatswood Transport Interchange).

St Leonards (Health and Education Precinct)

– Building heights from 8 to 55 storeys.

– FSR up to 17:1.

Green Square (Strategic Centre)

– Towers in the Green Square Town Centre are up to 28 storeys. In the majority of the wider Green Square Renewal Area, lower perimeter blocks and tall, slender buildings marking corners and providing landmarks is the adopted typology.

Epping Town Centre (Priority Precinct)

Building heights between 48m and 72m (approximately 15-23 storeys).

FSR between 4.5 and 6.0:1.

Planning proposals are being accepted at 30-35 storeys.

Figure 42. Comparative building height and densities in centres of Sydney

2.6 Parramatta Road Urban Renewal Area

The forerunner to the Urban Renewal Area designated by the Greater Sydney Region Plan was Landcom's Parramatta Road Corridor Urban Transformation Strategy (PRUTS) which anticipated that the Burwood Precinct (located north of Burwood Town Centre) could accommodate:

– 11,400 new people for 2050

– 5,500 new homes for 2050

– 3,800 new jobs for 2050

Although this precinct does not extend to the subject site, the strategy does mention renewal in this precinct can complement the existing active and vibrant Burwood Town Centre.

It is likely that the urban renewal area will include built form similar to the PRUTS for this part of the area.

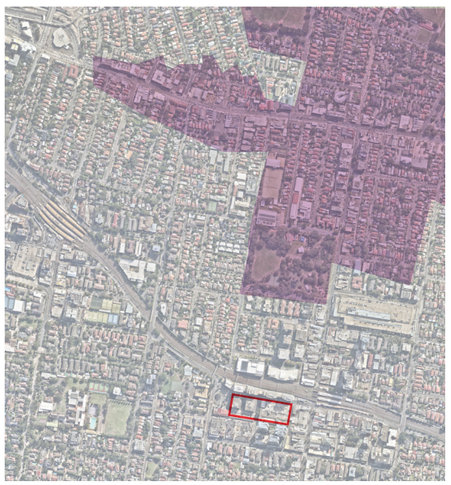


Figure 40. Subject site in relation to PRUTS

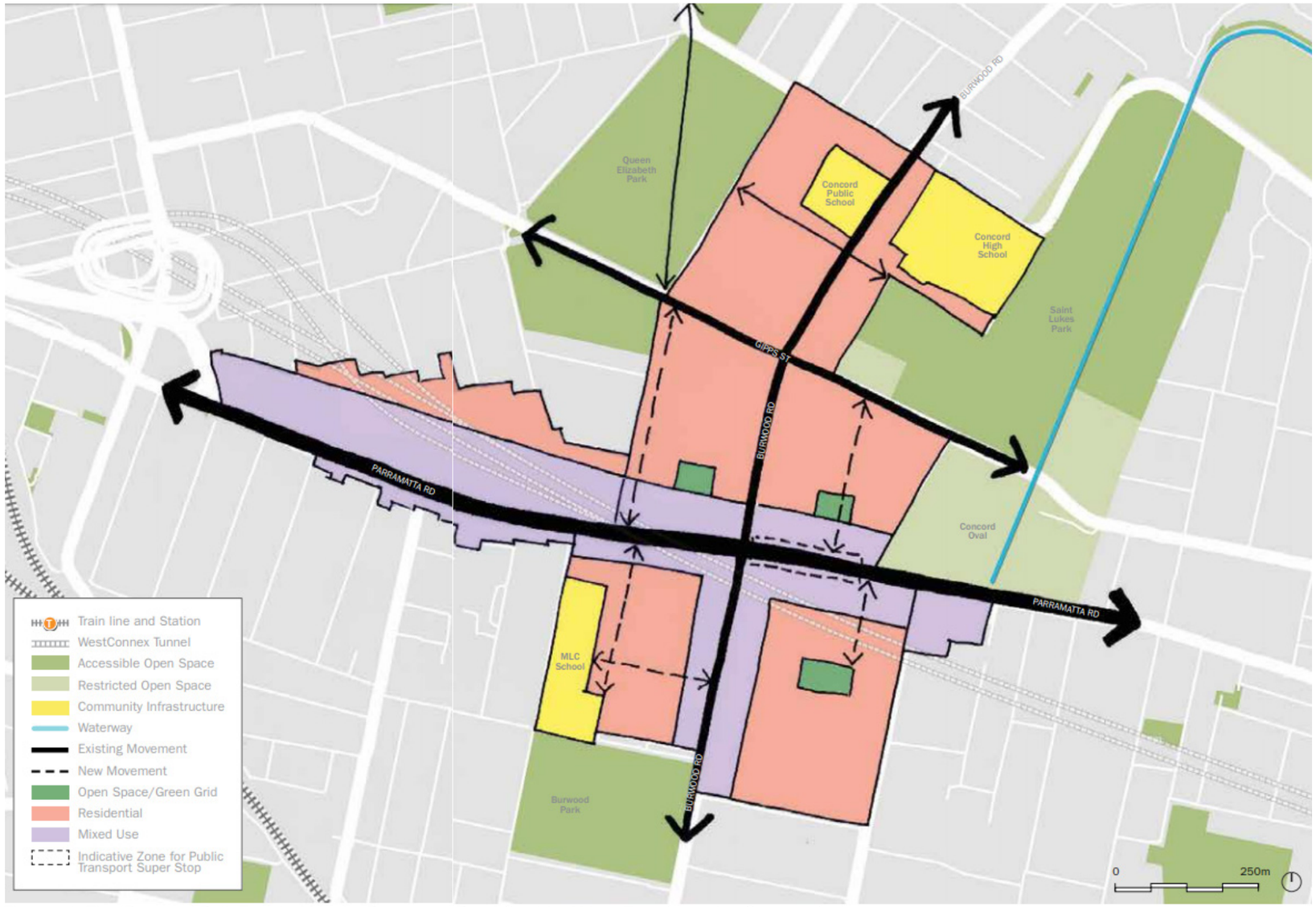


Figure 41. The 'Burwood Built Form' within the Parramatta Road Corridor Urban Transformation Strategy, forerunner to the current area being part of the urban renewal area.

2.7 Strategic centre building heights

Building heights and density in Burwood

– The Strategic Centres in Metropolitan Sydney are part of the State's primary focus for employment, residential density, and investment in infrastructure and transport.

– Maximising density in these centres allows for effective investment in infrastructure, the ability to preserve agricultural lands, low-scale suburbs and conservation areas and ultimately reducing the dependency on vehicles, due to the close proximity of land uses.

– As a principle, density should be maximised in Strategic Centres, due to their locational advantages in close proximity to existing jobs, services and infrastructure.

– It is important is that the centres are developed to an appropriate density for the circumstances, and that architectural design, access to transport, public domain and infrastructure is of the best quality.

– Building heights in Strategic Centres maximised and based on:

  – Aeronautical operations;

  – Ensuring solar access to important public places;

  – The impacts of density/height on heritage items, local character, traffic, and public domain amenity;

  – Strategic planning objectives; and

  – Sustainability.

– When setting principles for height in Strategic Centres, we need to look to the future. Where centres are developed for high density residential development, under-development means long-term lost opportunity and pressure on less suitable areas for density.

– A critical part of the a centres-based approach is the quality of architectural design, public space and infrastructure provided in the densest areas. The development of Green Square Town Centre and Parramatta Square in the next 5 years, is providing a benchmark for how to create dense urban centres in Sydney.

Central Sydney: 235m building heights (75 residential storeys) and FSR controls up to 15.4:1. (note building heights are contemplated in the draft Central Sydney Strategy)

Pictured: the 235m Greenland Tower at 115 Bathurst Street – Sydney's tallest residential building (under construction)

Green Square Town Centre: 28+ storeys

Pictured: The approved development at 301 Botany Road will be the first development in the high density precinct of the town centre.

Parramatta: 55 storeys

Pictured: The Aspire Tower, at 55 storeys and 243m has been approved by Council.

Sydney Olympic Park: 20-35 storeys

Pictured: Towers on Olympic Boulevard at 35 storeys.

Figure 42. Strategic Centre Building Heights.

2.8 Aviation height limits

An Aeronautical Impact Assessment has been prepared by Landrum & Brown and accompanies this PP at Attachment E.

The development proposal sought an approval under the Airports (Protection of Airspace) Regulations 1996 for the intrusion of a crane at 42-60 Railway Parade, Burwood NSW into airspace that is under the regulations, prescribed airspace for Sydney Airport.

Under regulation 6(1), 'prescribed airspace' includes 'the airspace above any part of either an Obstacle Limitation Surface (OLS) or Procedures for Air Navigation Services - Aircraft Operations (PAN-OPS) surface for the airport'.

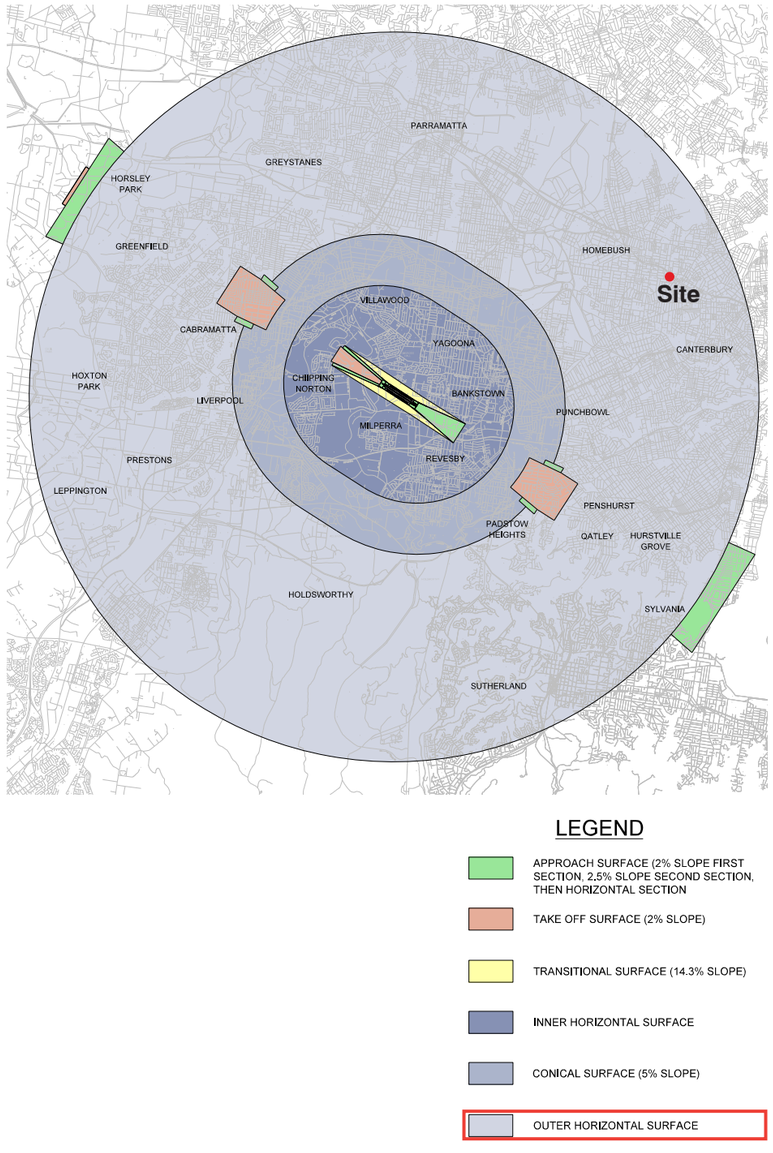
The Outer Horizontal Surface of the OLS above the site is identified as a height of 156 metres above the AHD therefore prescribed airpace commences at 156m AHD the proposed crane will penetrate the OLS by 25.5 metres.

Following agreement by Airservices Australia (ASA) to raise the RTCC surface height above the Railway Parade development, the Department were able to issue the following approvals:

– The building has been approved to a maximum height of 163.5 m AHD which represents an infringement of the OHS by 7.5 metres (Department reference F17/2779-72). The development will not infringe the RTCC surface.

– The construction crane has been approved to infringe the OHS and operate to a height of 181.5 m AHD from 1 January 2019 until 31 December 2026 (Department reference F17/2779-90). The crane will not infringe the RTCC surface.

Bankstown Airport



Sydney Airport

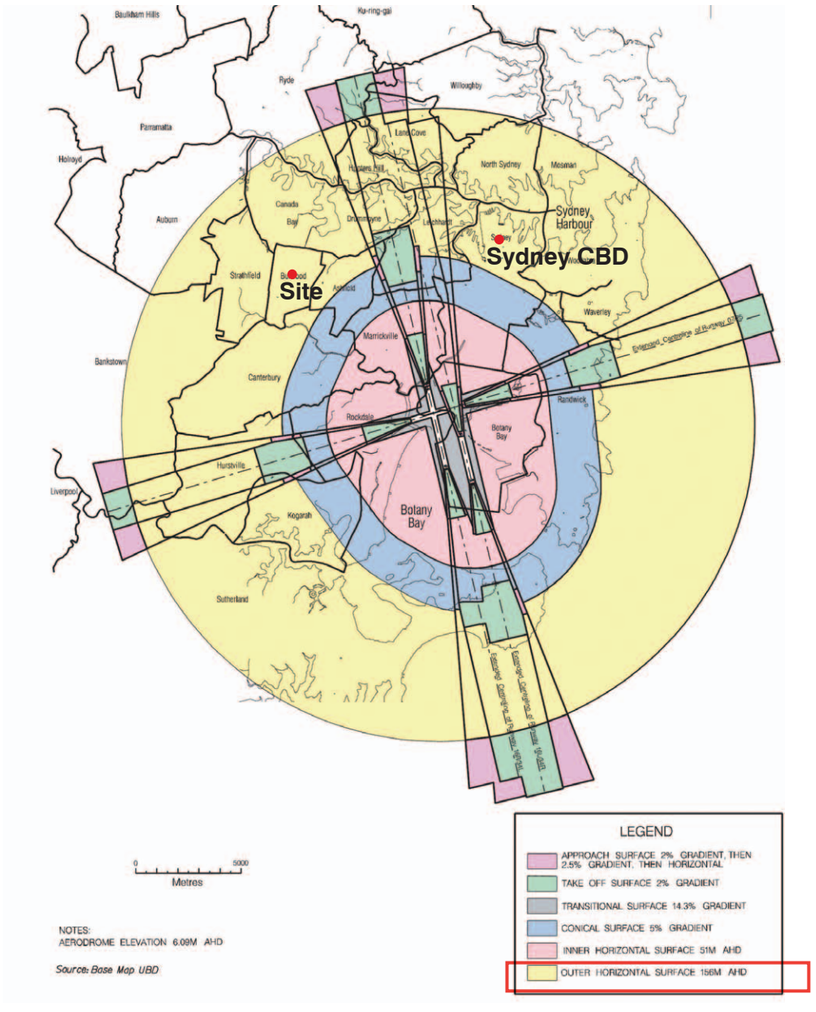


Figure 43 and 44. Diagrams showing the aviation height limits for Bankstown Airport and Sydney Airport.

2.9 Tower slenderness and architectural quality

Architectus and Cox has researched methods to achieve tower slenderness to provide good urban design, internal amenity and address impacts of tower bulk on surroundings. The aim of this research is to develop 'rules of thumb' for appropriate tower proportions.

Benefits of slender towers

As urban densities increase the slenderness of tall towers are becoming an important consideration – especially for residential towers and their separation.

Benefits of slender towers include:

– Overcomes the sense of tower bulkiness and overwhelming of the public domain.

– Opportunities for views of the sky between buildings and a feeling of openness.

– Minimising overshadowing, particularly extended periods of overshadowing in comparison to long elevations of lower scale development.

– Enables good solar access to the public domain.

– Creating better separation between buildings and better views - improves the amenity, privacy and outlook of apartments

– Increased residential amenity, as the floor-plates are more likely to achieve good solar access and ventilation requirements.

– Limits the number of apartments per level and the length of corridors.

– Ensures that apartments are not too deep and rooms don't rely on 'borrowed' light and air.

Local examples of floorplate controls

New South Wales

SEPP 65 and the NSW Apartment Design Guide (ADG) provide design guidelines for apartment buildings in NSW. The document has guidelines for building depth, separation and amenity. Together with fire regulations, the proper application of the guide has the effect of limiting floorplates in residential buildings.

For example, the ADG states that tower floorplates should generally be limited to 8 apartments per floor. At an average of 100m^2 GFA per apartment this equates to 800m^2 GFA for a floor plate (equal to 1100m^2 Gross Building Area). In practice, 9-10 apartments per floor is often approved while still achieving tower slenderness.

There are no state-wide floor-plate controls for tall buildings in NSW.

Green Square, City of Sydney Council

In the South Dowling St Precinct within Victoria Park, Zetland (part of Green Square) detailed consideration has been given to the slenderness of towers. The resulting controls allow for 22-storey towers (approximately 70m in height) to a maximum of 750m^2 of floor area including balconies (referred to here as 750m^2 Gross Building Area floor-plate).

A significant separation distance between towers (60m) is also provided as this precinct is an inner city area but is not within a designated urban centre.

Central Sydney

In Central Sydney, a 1,000m^2 Gross Floor Area maximum is applied to residential tower buildings. This would equate to 1,333m^2 GBA. A maximum horizontal dimension of the building facade of 40m is also applied. Towers in Central Sydney have maximum building heights ranging from 60m to 235m.

International examples of floorplate controls

Calgary, Canada

The maximum floorplate size is 650 square metres of net residential floor area (i.e. not including elevator cores, balconies etc.). This would equate to 953m^2 GBA.

Chicago, USA

There is no limit to floorplate size, but upper storeys are required to be smaller to give the towers a sculptural appearance.

New York, USA

Floorplate size is regulated using a site coverage control. Towers must cover 40% or less of a site area, with special exceptions up to 50% for smaller sites.

San Francisco, USA

The floorplate of towers in San Francisco must incrementally decrease as height increases. Lower parts of a tower must not exceed 1,600m^2 GBA and the upper tower floorplates must not exceed 1,100m^2 GBA.

Vancouver, Canada

The maximum floorplate size is 604m^2 of net residential floor area (this equates to 886m^2 GBA) and the maximum horizontal dimension of a tower is 27.5m.

Open balconies may extend beyond this provided they are less than 1/3 the overall façade length.

Findings

There are a variety of different floorplate controls in other cities around the world. Ultimately, the controls are a function of different priorities for a city – whether the aspirations are access to sunlight, views, or densification and consolidation. Generally, it seems that larger cities have more relaxed floorplate controls, while smaller cities seek slimmer towers and more separation between towers.

A floorplate control that is simply a percentage of the site area can produce very bulky buildings on large sites or amalgamated sites.

Reducing the size of upper floorplates is a solution to reducing visual bulk for very tall buildings (say, over 50 storeys). In Sydney's climate, it is usually preferable to have a podium/tower form of development where the podium relates to the alignment and scale of the street and the tower relates to a wider context of towers. It is usually preferable to not have "wedding cake"or stepped built forms in favour of simplicity of built form.

It is now commonly acknowledged that the Green Square provisions (700m^2 floorplate, 22-25 storeys) produce a tower with slender proportions.

Taller buildings can accommodate larger footprints, and still achieve good internal amenity, as more floor space is dedicated to lift cores/services.

Sama Beirut, Lebanon: active lower level, slender tower, iconic building.

Central Park, Sydney: active lower level, low podium, slender towers, sky gardens.

Chatswood Transport Interchange: tall slender towers.

Architectus and COX recommendations

In order to achieve slender towers the following rules-of-thumb are recommended:

– Floor-plate sizes should be related to height and the Gross Building Area (GBA) of tower floorplates as follows:

– Up to 25 storeys – 800m^2 GBA maximum

– 26-35 storeys - 950m^2 GBA maximum

– Above 35 storeys – 1,300m^2 GBA maximum

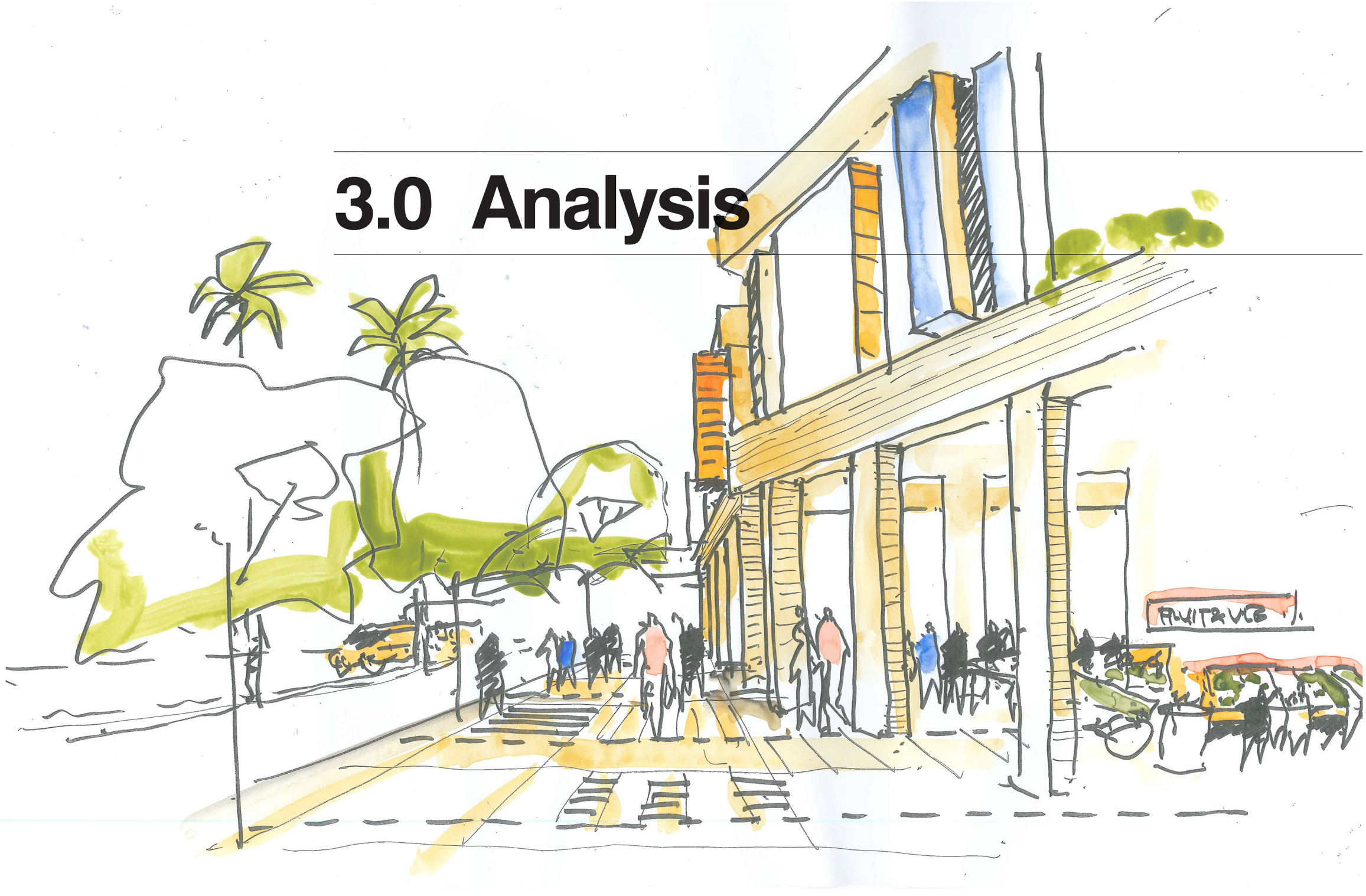
– A tower slenderness ratio (depth:height) should be at least 1:4.

The above recommendation is subject to detailed testing for each site, and in consideration of the site's context and constraints. Towers might not be able to achieve the above maximum floorplates if they cannot meet SEPP 65 standards for internal amenity.

The master plan for the subject site proposes towers up to 42 storeys with floorplates from 600m^2 GFA up to1,010m^2 GFA.

Figure 45. Tower Slenderness Case Studies

3.0 Analysis



3.1 Opportunities for development in Burwood

This section analyses the development capability of the Burwood Town Centre under the current controls and if other sites have developed to a similar level of density as this proposal.

The sites available for substantial redevelopment within the Burwood Town Centre are limited.

The result is that there are relatively few sites for substantial consolidated redevelopment that could deliver substantial public benefits within the Burwood Town Centre.

The subject site is 1 of 3 potential consolidated sites with a site area of 5,000m^2 or more.

The rationale for testing density on opportunity sites is based on comparable sites within 400m of a train station in other strategic centres in Sydney:

– Parramatta City Centre has a maximum FSR of 11.5:1 across the whole city centre

– Central Sydney 12.5:1 - 15.0:1 FSR across the whole city centre

– North Sydney up to 20:1 FSR (no FSR controls, just envelope controls)

– St Leonards up to 13.9:1 FSR.

Potential total GFA capacity for opportunity sites using existing controls:

– 458,442 m^2 GFA total

– Assume ground floor non-residential uses

– 357,274 m^2 GFA residential uses

– 4,200 apartments (assume 85m^2 GFA / apartment)

Potential total GFA capacity for opportunity sites using existing controls and for sites > 5,000 m^2 assuming 10.0:1 FSR (applies to 3 sites within town centre):

– 626,282 m^2 GFA total

– Assume ground floor non-residential uses

– 525,114 m^2 GFA residential uses

– 6,178 apartments (47% increase on complying)

In conclusion, the development capability of the Burwood Town Centre under the current controls is an additional 4,200 apartments with ground floor non-residential uses. If three sites greater than 5,000m^2 = area were developed to 10.0:1 FSR then the extra capacity would be 2,000 apartments totalling approx. 6,200 apartments.

If these opportunity sites are developed as per existing controls, the site's full potential is not met. It is essential that the planning controls can cater for not only short term demand but also for long term demand.

3.2 Public transport access

– The site is particularly well connected to public transport and is within 200m walking distance of a major rail station interchange about 20 minutes travel time to Central Sydney and Parramatta in each direction.

– Major bus routes are on Burwood Road and Railway Parade, with express metro services to Liverpool and Hurstville, and investigations underway for a Bus Rapid Transit (BRT) route in Burwood.

This is expected to substantially improve due to the potential infrastructure investment including:

1. Planned Parramatta to Homebush light rail route;
2. Bus interchange at Burwood Station;
3. Bus lanes on revitalised Parramatta Road;
4. WestConnex.

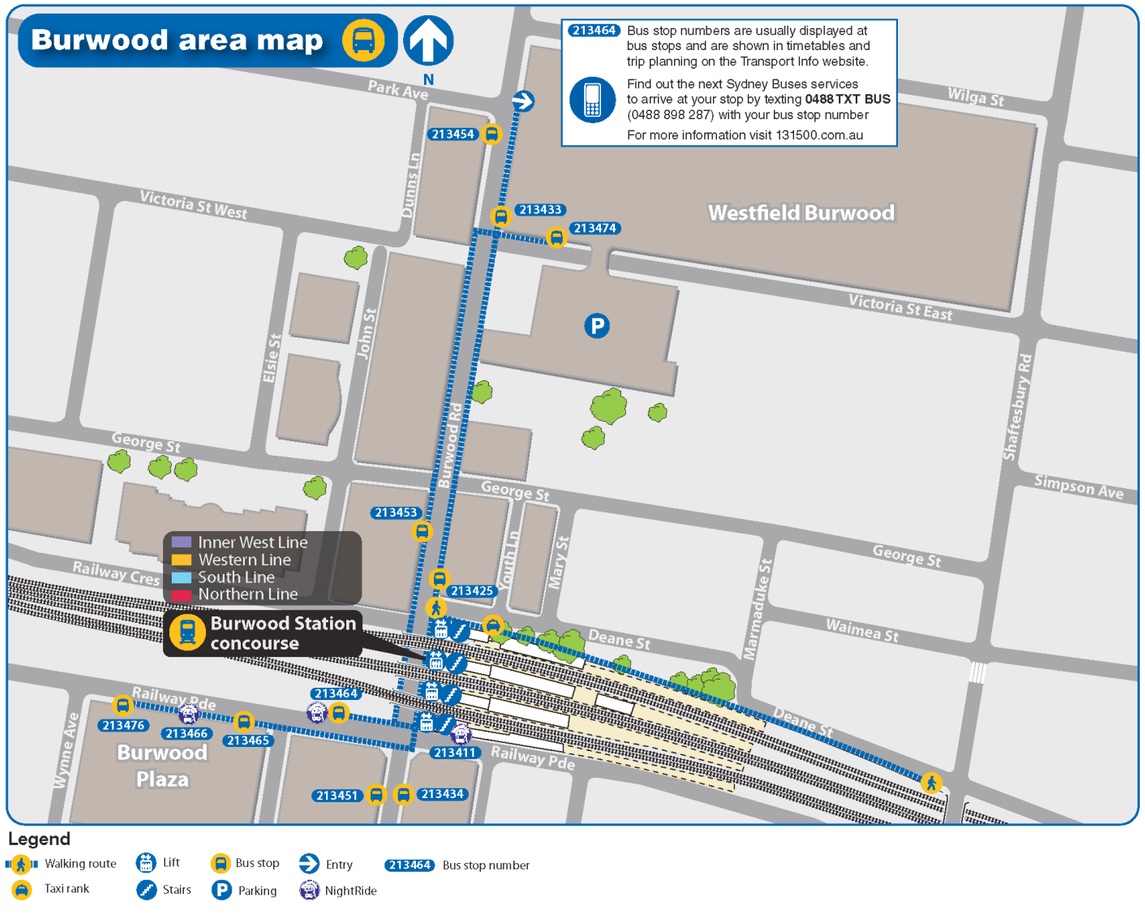


Figure 46. Burwood area bus and train network map.

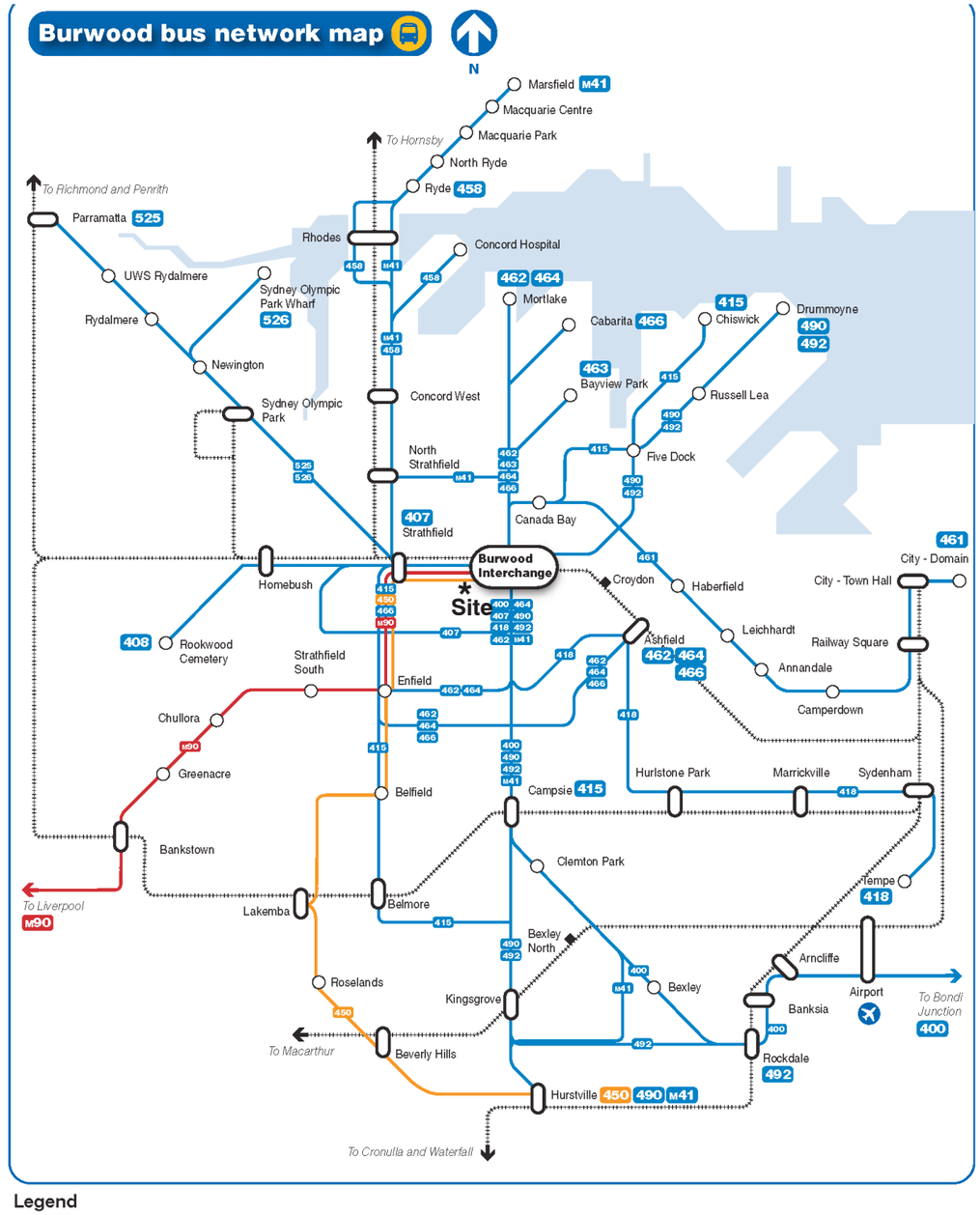
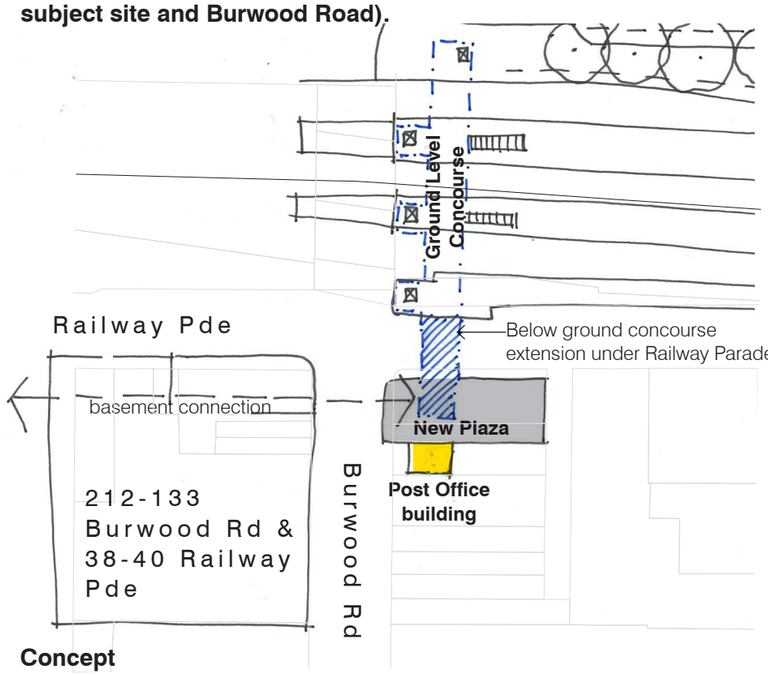


Figure 47. Burwood bus network map.

3.3 Opportunities for connection to Burwood Station

In discussion with Council, it has been requested that the opportunities for better pedestrian connectivity for the station be explored. Five options were analysed ranging from an underground connection, ground level connection and a pedestrian bridge. For the reasons stated below the preferred option is to improve the ground level connection by expanding the public domain where possible around the intersection of Burwood Road and Railway Parade.

Option 1: Underground connection to existing ground level concourse with new east plaza and basement connection through Burwood Central (adjacent development between the subject site and Burwood Road).



Concept

– Create new entrance to ground level concourse on Railway Parade

– Below-ground concourse connection through to new plaza (identified in Burwood Council's DCP).

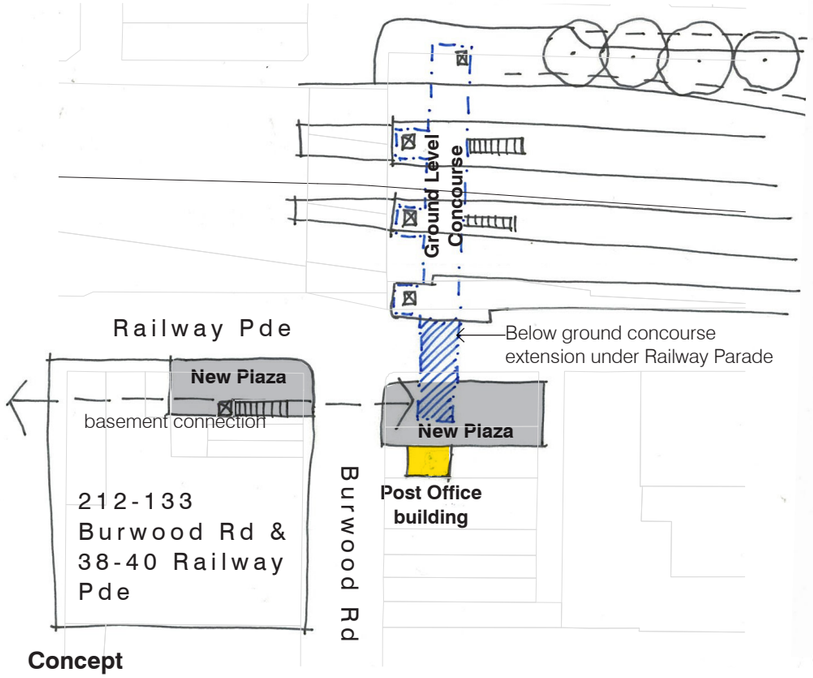
– Portal entry to new concourse extension in plaza.

– Create a new address to the Burwood Post office building

– Below ground connection through to basement of Burwood Central and through to the subject site

Comment: Below ground connection to under the rail concourse is too difficult to achieve due to physical limitations of the rail building.

Option 2: Underground connection to existing ground level concourse with new east and west plaza



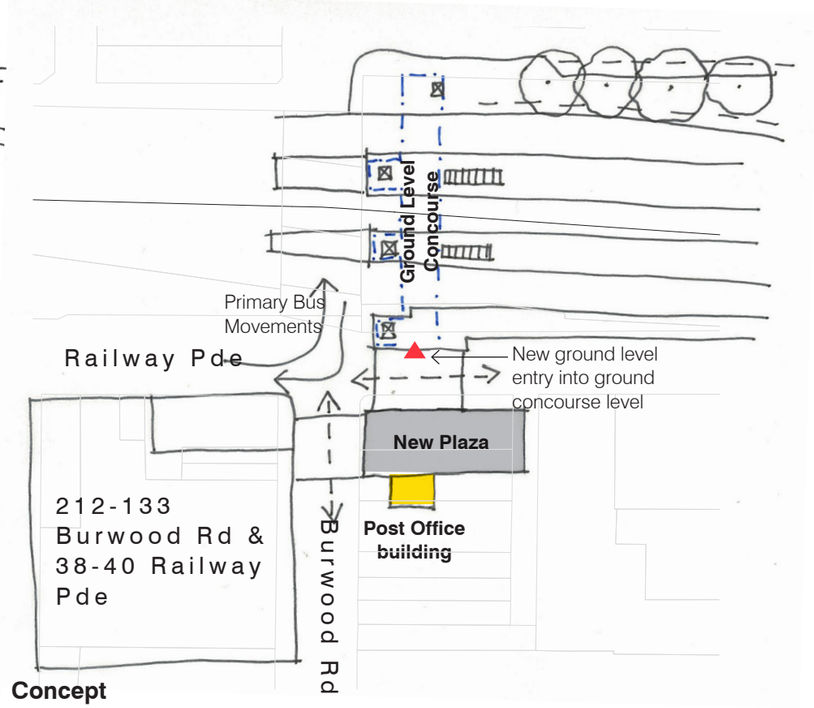
Concept

– Same as for option 1, with addition of new plaza space on south-western corner of Railway Parade and Burwood Road

– Creates significant new 'breathing space' for pedestrians and additional public entry opportunity to cross Burwood Road

Comment: Unlikely to achieve plaza at south-west corner due to heritage quality of the pub.

Option 3: New ground level entry to existing ground level concourse with new pedestrian crossings and plazas



Concept

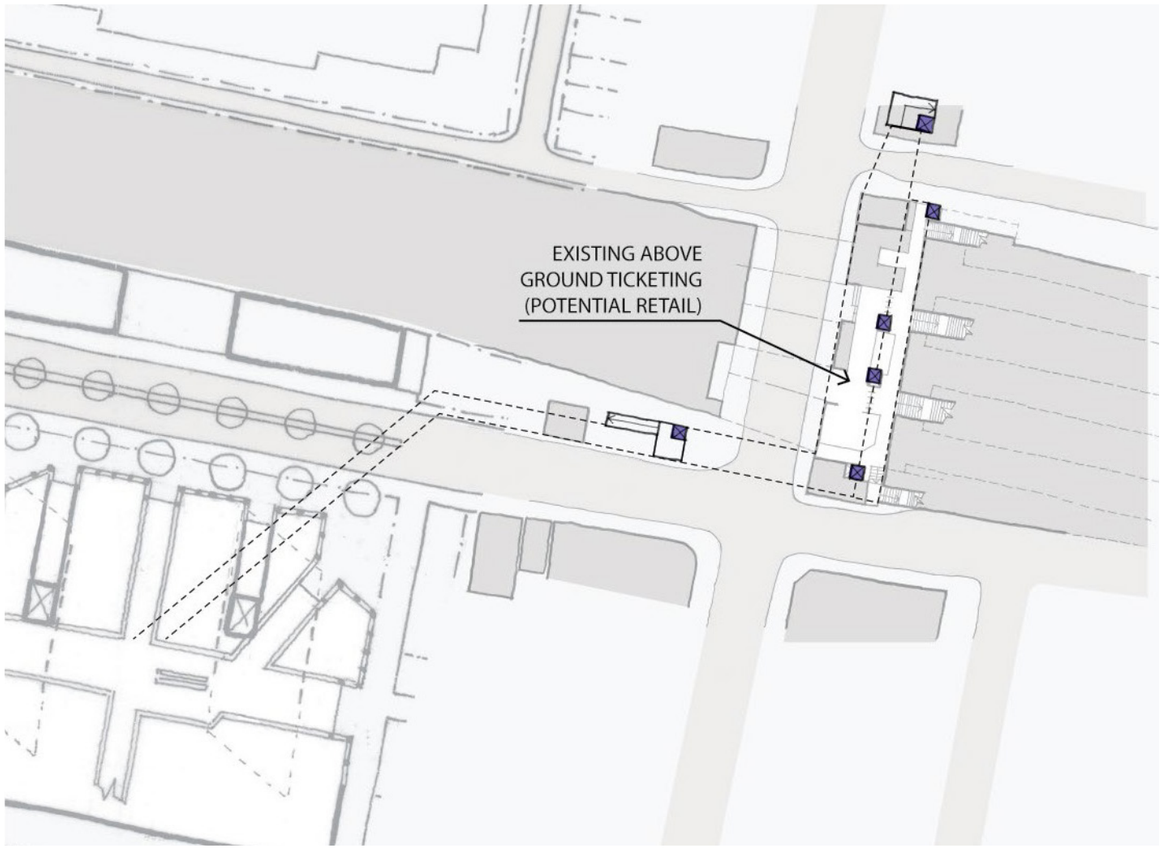
– Raised thresholds for pedestrian street level connections between two new plazas and train station

– Extend ground level concourse to street level on Railway Parade

Comment: This is the preferred option as it does not rely on underground or bridge connections that are less desirable for pedestrian access, street level activation and amenity. This option recognises that the main turning movement of buses is from/to Railway Parade west into Burwood Road north. This reduces pedestrian/vehicle conflict.

Figure 48. Connection options to Burwood Station.

Option 4: Underground connection to existing ground level concourse from the subject site



Concept

– Provides tunnel connection to the existing ground level concourse

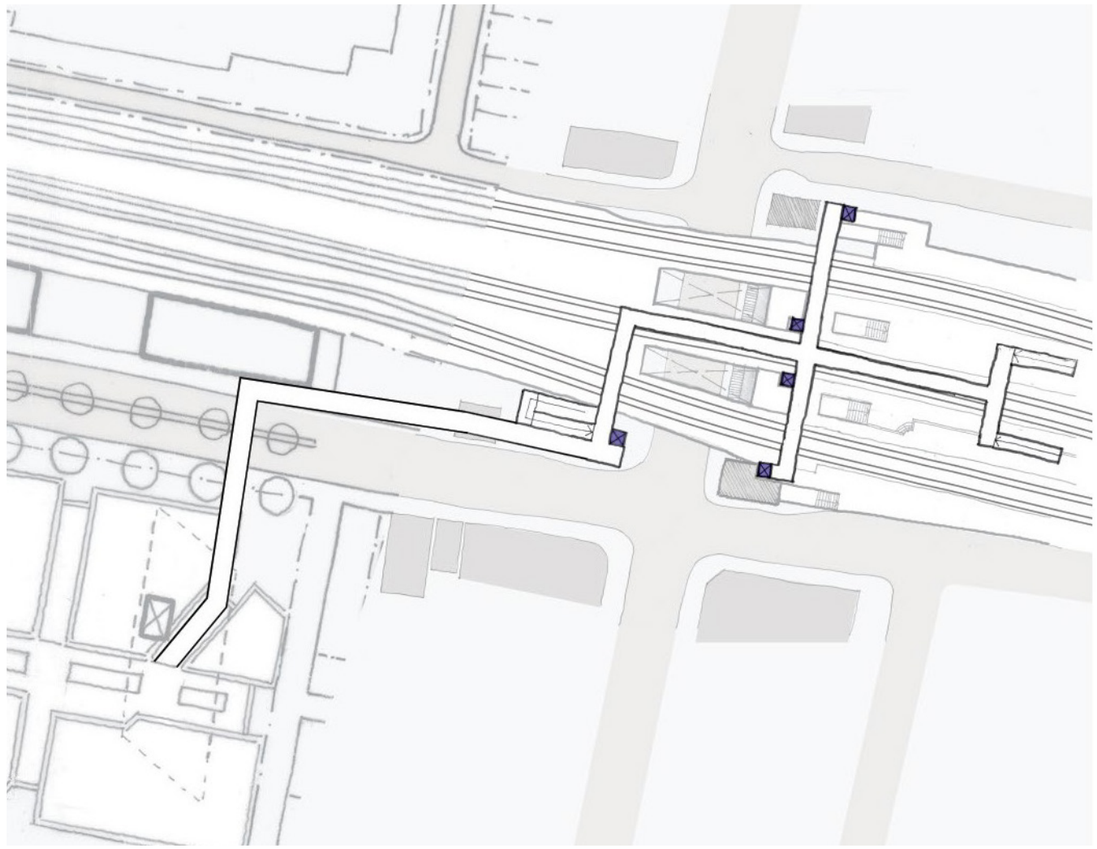
– Services on Railway Parade and Burwood Road will require relocation

– Technically achievable under public land.

– No public domain benefit and lack of street level activation

Comment: This option is not recommended because the pedestrian tunnel would be too long and difficult to activate leading to safety problems. Underpass connection to the rail station concourse is problematic because of the physical separation of the rail concourse.

Option 5: Bridge connection to existing ground level concourse with new east and west plaza



Concept

– Provides bridge connection to the upper level concourse

– Does not interrupt services within Railway Parade and Burwood Road

– Coordination issues with rail easement access and above ground poles and wires

– Impact on the public domain with multiple columns and visual impact on the street

Comment: This option is not recommended because the route is circuitous, has safety/visual surveillance issues and does not connect into other upper level activities. The bridge would need to be too high because the rail line is elevated.

Figure 49. Connection options to Burwood Station.

3.4 Site constraints summary

A summary of key issues is provided below.

Aeronautical

Aeronautical Impact Assessment has been prepared by Landrum & Brown and accompanies this PP at Attachment E.

– Recommendation from aeronautical consultants of a maximum RL of 181.5m (AHD) for permanent structures.

– Existing ground level average of RL 20m (AHD). The maximum building height is approximately 144 m with a total RL of 163.5m (i.e. approximately 42 storeys) which has recieied approval from the Department of Infrastructure, Regional development and cities

Traffic and transport

– The traffic generation of the proposed additional 740 apartments would be modest, at some 140 to 110 vehicles per hour two-way at peak times.

– With the implementation of the road works identified in the Section 7.12 plan, the small increases in traffic flows would have minor effects on the operation of the surrounding road network.

Traffic access

– It is considered that the best location for basement parking and loading access is from Railway Parade at the west of the site. Additional (access can be from Wynne Avenue either north or south boundary of the site). With development of the park on the council carpark site adjacent to the west of the site a further access point may be through a new carpark under the future park to Condor street to the west.

Easements

– As outlined in the survey plan, easements exist in favour of the site over Emerald Square that connect the site to Belmore Street. Potential additional basement vehicle access could be provided using these easements.

Drainage services in Wynne Avenue

– Underground drainage lines in Wynne Avenue include a 600mm diameter stormwater pipe and does not pose a significant constraint on the redevelopment of uses under Wynne Avenue (e.g.for basement retail and car parks below). Alternatively the stormwater pipe could be re-routed.

Overland Flow and Flooding

Refer to the report by Arcadis and accompanies this PP at Attachment H.

– Wynne Avenue is an overland flow path. The proposal can be designed to not reduce the capacity of Wynne Avenue.

– Flooding occurs on Railway Parade. The proposal is capable of avoiding 1:100 and PMF flood levels from entering the proposed basement car park and also the proposed void within Wynne Plaza that provides access to the basement retail level below.

Contamination

On the basis of the Preliminary Site Investigation report, (Refer to the report by Douglas Partners/ Attachment J) it is considered that the site can be made suitable for the proposed development by:

– Appropriate decommission and disposal of existing grease traps, oil and waste water aboveground tanks prior to demolition of site buildings; and;

– Detailed intrusive investigation (including waste classification) following building demolition.

Services on Wynne Avenue

– Basement level retail is proposed under Wynne Avenue. There are no known services that are difficult to address or relocate under Wynne Avenue.

Heritage

Refer to the Heritage report prepared by Tropman & Tropman Architects at Attachment I.

– Towers have been assessed for their visual impact from a number of view points. A comprehensive Visual Impact Assessment accompanies this report (Attachment C).

– From Burwood Road it will be difficult to see the proposed towers as the shopping and retail façades and the width of the road reduces the ability to look beyond the shopping precinct street façades.

– The visual impact on No. 5 Livingstone Street (a heritage site south of the site) will be negligible once the intervening development of Burwood Grand and Emerald Square is completed and noting the vegetation at the rear of 5 Livingstone Street.

Relationship to adjacent development land south of the site

– Redevelopment of the site will require sensitive placement of tall buildings to address overshadowing and visual bulk.

– An in depth assessment of the solar impact to Burwood Grand and Emerald Square is detailed in section 6 of this Urban Design Analysis.

Relationship to adjacent development land east of the site

– A DA for Burwood Central has been approved by Council for 121-133 Burwood Rd & 38-40 Railway Parade Burwood including a 20 storey residential tower on the land east of the site.

– Setback of 9m to the centre line of Clarendon Place is provided to the proposed eastern tower. This provides sufficient building separation to the adjacent development currently under consideration by Council for the land east of the site.

– Murray Arcade is a key pedestrian connection from Clarendon Place to Burwood Road. The master plan proposes an east-west link through the site aligned with Murray's Arcade.

Relationship to adjacent Council land to the west of the site

– Council's car park north of the existing library is a potential future development site. It is noted in the DCP as a required public car park.

– If a development was to occur on the site there is sufficient tower separation.

– This masterplan proposes a pedestrian laneway connection from the library site to Railway Parade, shared on the property boundary as an appropriate public interface.

Operation of Woolworths supermarket

– Redevelopment of the site will require a staged approach to allow continued operation of the existing Woolworths while a new supermarket location is constructed.

Existing commercial office buildings

– Redevelopment of the site will require a staged approach to allow continued operation of the existing office buildings while a new office building is constructed.

3.5 Site opportunities summary

Given the large scale of the site, the development presents a unique opportunity to develop a master plan cohesive with the surrounding existing and future built form.

Site size

– The subject site has an area of 14,363m² i.e. approximately 1.4ha. A site of this size presents an excellent opportunity to provide a well thought out built form and public domain that makes a very positive contribution to Burwood Town Centre.

– The site is also in close proximity to existing jobs.

Connectivity and Accessibility

– The site is well located in relation to existing public transport, attractions and services.

– Creation of several pedestrian links through the site will, provide a highly permeable public domain.

Railway Parade

– The site has an excellent address with frontage to Railway Parade and Wynne Avenue.

Active frontage

– Activated street frontages and space for people to gather and relax can be provided to all site edges and pedestrian links through the site.

Built form

– Provide tall and slender towers that allow daylight and sun access into open-air laneways and public domain space.

– Provide a setback to Railway Parade to provide an additional lane for buses and wider footpath.

Public Open Space

– Create a public domain space to address the lack of public open space on the south side of the railway line within Burwood Town Centre.

Mixed Use

– Provide high quality apartments and communal spaces that offer an attractive alternative to single dwellings.

Retail vision: fresh food, market place, dining

– The master plan vision for the project is founded on the principle of the Market Place. The creation of a Market Place, a collection of supermarkets and food providers, restaurants, bars and cafés, connected by a series of outdoor dining and recreation areas.

– A carefully curated retail offer to ensure that each operator appeals to the very broad and ethnically diverse trade area.

– Essential services are an important part of the offer and we see these being inter-woven in the high street design on the ground level.

Entertainment

– An Entertainment Precinct is a complimentary addition to the retail and would assist in the creation of a town square, a central hub for people to meet, eat, play, work, relax, entertain and enjoy.

Urban renewal

– Given the site's locational advantages, one of the site's key opportunities is to implement the principles of urban renewal for part of a Town Centre near a rail staion.

A mixture of land use will be incorporated within the proposed redevelopment. This will make efficient use of existing infrastructure and services, whilst encouraging sustainable living.

It also has the potential to reduce car dependency and encourage alternative methods of transport such as walking, cycling and use of public transportation.

High Profile Location

– Given the site's profile location, the development will also demonstrate the principles of design excellence by providing a high quality landmark and design outcome for the Burwood Town Centre.

Community Infrastructure

– Given the size of the site, the redevelopment has the potential of providing a "community hub" incorporating a variety of "place-making" community buildings and facilities. This is an important contribution to the sense of a community experienced by residents and occupants.

3.6 Concepts Tested

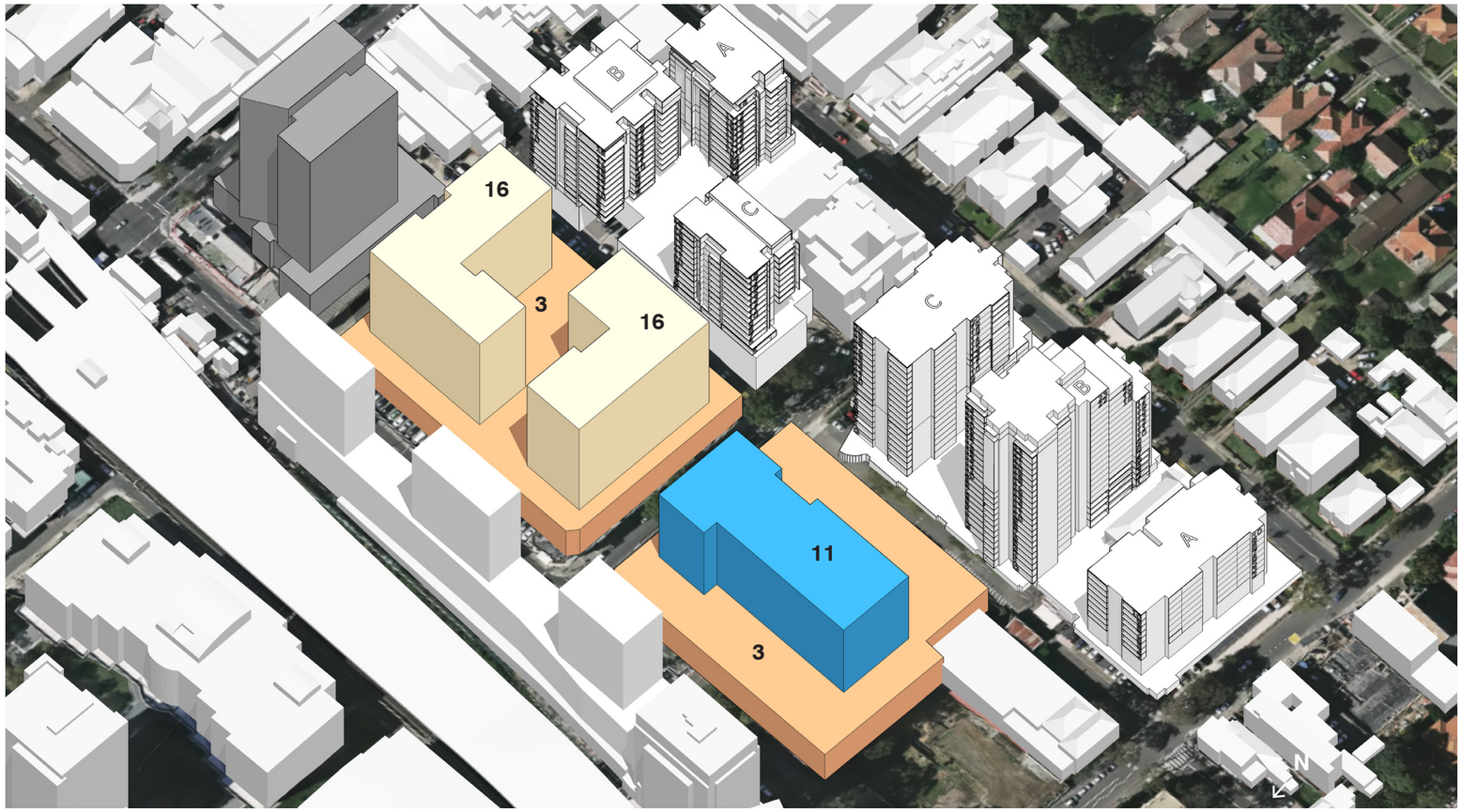


Figure 50. Concept 1 - LEP complying height and FSR.

Legend:

- Retail
- Commercial
- Residential
- Existing Buildings
- Buildings under construction / DA submitted

Concept 1 - LEP complying concept	
Site Area m²	14,363
Overall FSR	5.3 :1
Non-residential FSR	3.3:1
Residential FSR	2.0:1
GFA m²:	
Minimum non residential	47,593 m²
Maximum residential	28,860 m²
Total GFA	**76,453 m²**

Comment: It is not financially viable to build this option compared to the current operating uses on the site. Consequently, public benefits are not possible.

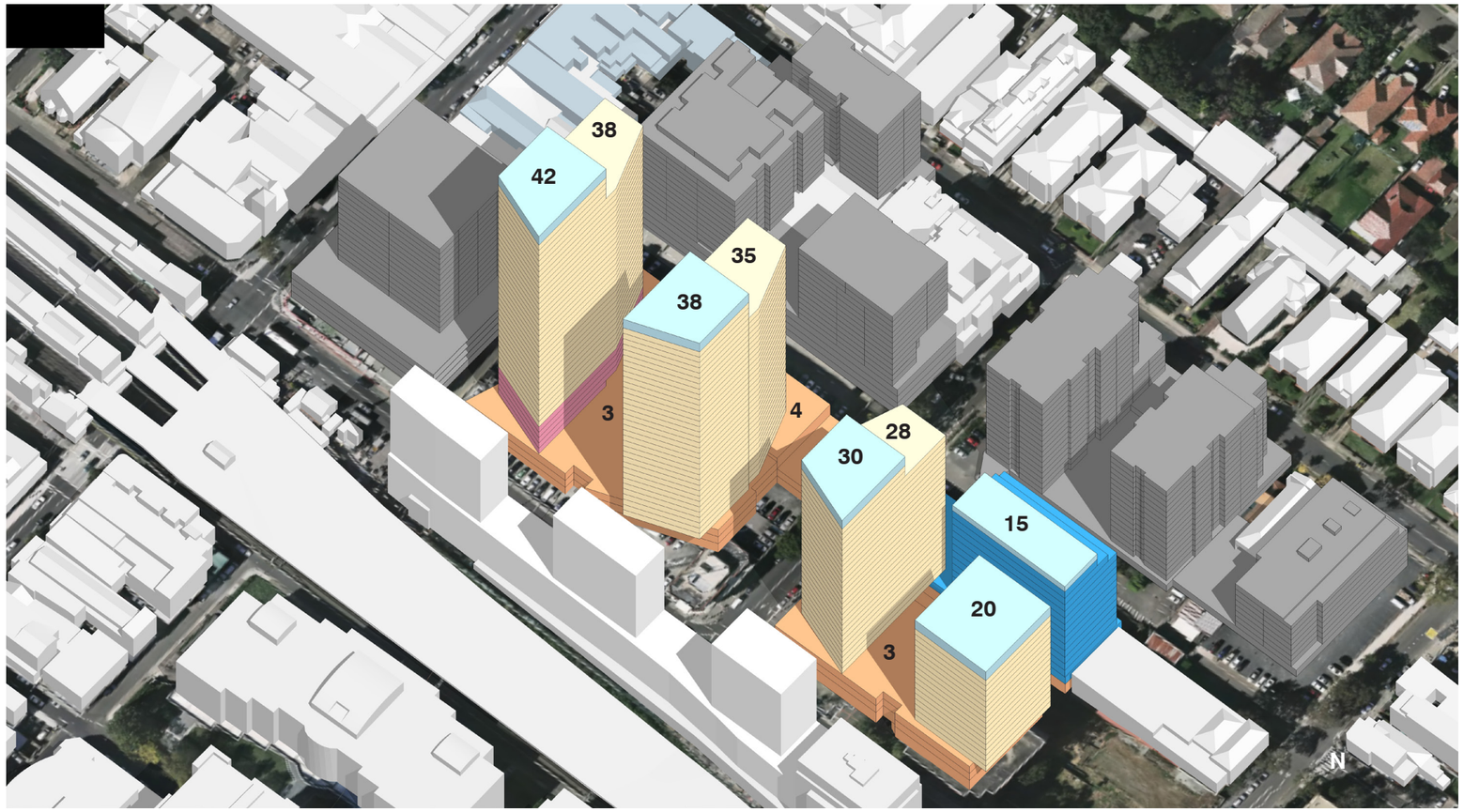


Figure 51. Concept 2 - Gateway approved concept (with towers ranging from 15-42 storeys)

Legend:

- Retail
- Commercial
- Residential
- Hotel
- Carpark podium
- Existing Buildings
- Buildings under construction / DA submitted

Concept 2 - Gateway approved concept	
Site Area m² (excluding Wynne Ave)	14,382
Overall FSR	9.9 :1
Non-residential FSR	3.37:1
Residential FSR	6.53:1
Approx. GFA m²:	
Non residential GFA	48,410m²
Residential GFA	93,972 m²
Total GFA	**142,382 m²**

Comment: This concept provides variety in built form, a visually interesting skyline and maximises the public benefits that could be achieved such as improved streetscapes, creative public open spaces and pedestrian thoroughfares. It creates a landmark, gateway entrance for the Burwood Town Centre.

Note: The shadow impacts to the developments to the south of this concept are compared to a complying development (concept 1) with taller slender towers widely spaced compared to lower broader buildings of concept 1.

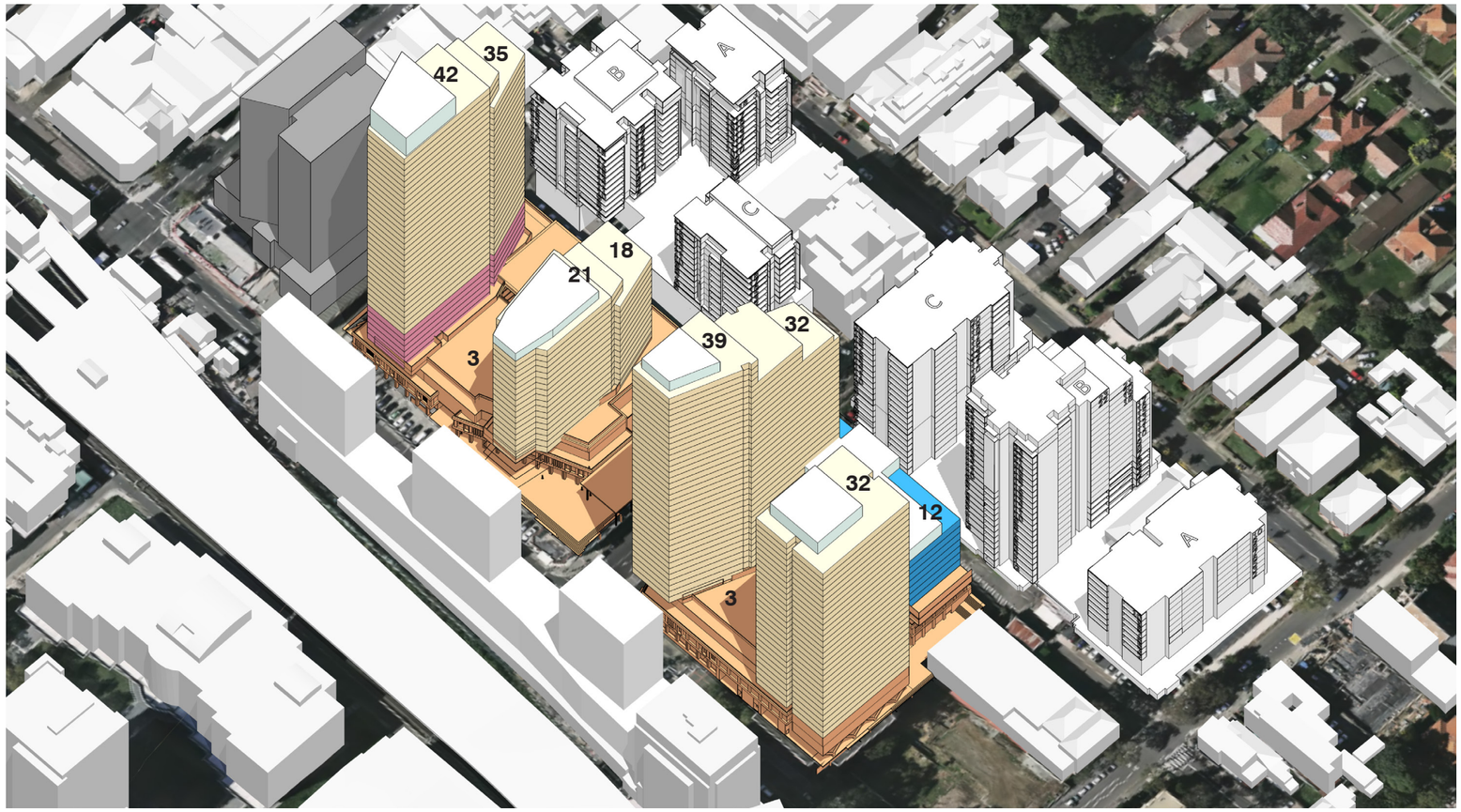


Figure 53. Concept 3 - Amended planning proposal (with towers ranging from 12 - 42 storeys.

Legend:

- Retail
- Commercial
- Residential
- Hotel
- Existing Buildings
- Buildings under construction / DA submitted

Concept 3 - Amended planning proposal	
Site Area m² (excluding Wynne Ave)	14,363
Overall FSR	10.54:1
Non-residential FSR	3.374:1
Residential FSR	7.161:1
Approx. GFA m²:	
Non residential GFA	48,467m²
Residential GFA	102,858 m²
Total GFA	**151,325 m²**

Comment: Following council feedback, this concept varies the building heights of concept 2 to increase with sunlight access to the recently constructed developments to the south.

3.7 Discussions with Council

Preliminary options were presented to Council on the 20th of March 2015.

Council responded with the following issues in a letter dated 26th May 2015, and our response to these issues is provided below:

Council land at 2-4 Condor Street

– Council's land has been excluded from the PP. Nevertheless, there is potential for the carpark to be replaced by parkland with the carpark beneath. The PP enables this to occur by providing the appropriate interface.

Burwood Local Environmental Plan (BLEP) 2012

– Council raised equity issues for redevelopment of the subject site in excess of permissible LEP controls. Redevelopment of the subject site presents the opportunity to provide substantial public benefits for the Burwood Town Centre that would otherwise be unachievable. There are few sites in The Burwood Town Centre large enough to provide the scale of development required or the public benefits. The development capability analysis in this report shows why two small sites that may be sufficiently large to produce similar quality development. Its is unlikely that other sites can be amalgamated to achieve a site area of more than 5,000m^2 given the controls of strata titles, heritage or lot fragmentation.

Impact on surrounding land

– Council raised concerns of overshadowing to residential areas and development to the south of the subject site that is currently under construction. **It is noted that compared to a complying development for Burwood Place, solar impacts on the developments to the south are similar despite the increase in density and height. This is because of the careful separation of the proposed towers and their slenderness. Further the amended PP ensures greater solar access to the south.**

– This PP will improve the amenity by providing a high quality built form in close proximity to public transport

No adverse impacts have been identified as a result of this PP.

Centres hierarchy

– Council raised concern that the proposed FSR would breach the centres hierarchy (by matching that of Parramatta). Parramatta City Centre is FSR 11.5:1 *for the entire city centre*. The proposal at 10:54 FSR would be the highest in Burwood for a single site, not representative of the whole of Burwood City Centre. Other Strategic Centres in Sydney are delivering comparable or higher FSRs on key sites close to rail stations - for example St Leonards (FSR 17:1) and North Sydney (FSR 20:1).

Road Widening

– Council advised of a 3m minimum road widening on Railway Parade, 3m minimum widening on Clarendon Place and for Wynne Avenue to maintain vehicle access to properties that currently have access from Wynne Avenue. In all cases, the proposal complies with the above.

Traffic Impact

– Council requested a traffic, parking and pedestrian impact report be prepared to determine the impact of the proposal on the Burwood Town Centre network. Refer to the accompanying reports which are summarised in detail in other sections of this report:

  – Attachment F: Traffic Modelling (by Road Delay Solutions)

  – Attachment G: Strategic Transport Planning Assessment (by AECOM)

Service adjustments and relocations

– Council requested all underground and overhead services and utilities be documented. In particular, underground services in Wynne Avenue were noted as containing major service lines. A full survey has been prepared and a review of the existing services on Wynne Avenue and can be addressed in the design and suitably relocated.

Stormwater catchment analysis

– Council noted that the intersection of Wynne Avenue and Railway Parade is a localised low point. A stormwater investigation and catchment drainage study has been prepared by Arcadis and the proposal is capable of addressing flooding and overland flow issues.

Way forward

– The master plan presented in this proposal addresses all of the issues raised by Council's letter.

Following a Gateway determination it is anticipated that extensive community consultation would be undertaken in conjunction with Council to inform the community of this proposal and its public benefits.

Review of Burwood Town Centre Controls

Presentations and discussions have been held with Council during the preparation of this PP. During these discussions, Council has advised that they are planning to commence a review of the planning controls within the Centre.

The proponent is presently ready to immediately progress with this urban renewal project. As such, we request that allowance is made for suitable development sites to proceed in parallel with Council's review, as this development has the potential to act as a catalyst for quality benchmark developments within the remainder of the Centre.

In order for this to be achieved, it is important that this PP does not conflict with Council's review. As such, this PP has been prepared in accordance with a series of objectives which will encourage a sustainable and cohesive approach for development within the Centre.

These objectives include:

– To maintain and enhance the relevance of the Burwood Town Centre as a Strategic Centre in the Greater Sydney Region Plan;

– To ensure that any increase in height or FSR allows appropriate levels of sunlight, privacy and broader amenity protection to residential properties surrounding the Centre;

– Employment floorspace in the centre is not reduced and ideally increased to maintain jobs;

– That traffic generated for any increased yield is minimised with reduced parking close to the train station being encouraged and consistent urban design and planning principles for Town Centre Urban Renewal development near railway stations;

Figure 54. Initial options presented to Council (20.03.2015) showing how major redevelopment could deliver significant public benefits.

– That any increase in height or FSR of buildings exhibits design excellence.

This PP satisfies all of the above objectives. Council may however have additional objectives which they envisage for the area. We therefore encourage further consultation with Council and the community during the assessment of this PP, post the Gateway process. This will ensure the aims and objectives of this PP are aligned with Council's envisaged urban form for the evolving nature of the Centre. In this respect the proponent is willing to undertake extensive community consultation post Gateway.

4.0 The master plan

4.1 Urban Design principles for development of the site

The following urban design principles for the development of the site derive from the site/context analysis, consultant team input and early discussions with Council.

Public domain

– Create new activated street edges and public laneways. The laneways should have a more intimate, urban character.

– Public spaces should have good solar access, particularly between 12pm and 2pm to encourage workers to sit outside and have lunch.

– Break up the large lot with through site pedestrian connections.

– Consider how the design of the retail centre can create open, publicly accessible laneways, rather than an internalised mall space.

– Consider the opportunities for open space and retail/ entertainment uses on the rooftops of the planned buildings.

– Consider the adjoining sites, which are likely to be redeveloped for mixed uses at some stage. The public domain strategy should be in the context of a co-ordinated approach for the broader precinct.

– Development may occur underneath Wynne Avenue, and potentially converted into a shared way/ plaza as part of a future DA, as permissible under current development controls.

Built form

– Respect the existing street grid ensuring that the tower locations and building separation are aligned with the Burwood Town Centre street grid pattern to maximise opportunities for views through the development.

– Ensure that the master plan allows for views deeply into and through the site for visual interaction and connection.

– Building sustainability: maximise opportunities for non-mechanical ventilation, passive heating and cooling to reduce ongoing energy consumption.

– Any towers are to be slender so as to minimise overshadowing and visual impacts. Tall, slender towers with height variety and low street walls are a superior built form outcome compared to a consistent 20-storey building height.

– A street wall height of 3-4 storeys will provide for an urban, and pedestrian building scale while allowing sun / daylight access into the laneways.

– Towers to be well separated consistent with SEPP 65.

– Built form should minimise overshadowing and therefore the slender towers should be on a north/south axis.

– Car parking should be located in basements where possible to minimise the impact on the public domain.

– Create a landmark development for the centre, incorporating the principles of design excellence.

Land use

– Encouraging a mixture of different land uses in an appropriate location

– The retail area should logically connect to and interact with the existing pedestrian desire lines and street frontages.

– Residential towers should be appropriately separated from retail uses on the ground and first levels.

– The master plan should create “open space” and public laneways to facilitate access, natural light and a welcoming space for visitors to enjoy restaurants and cafés.

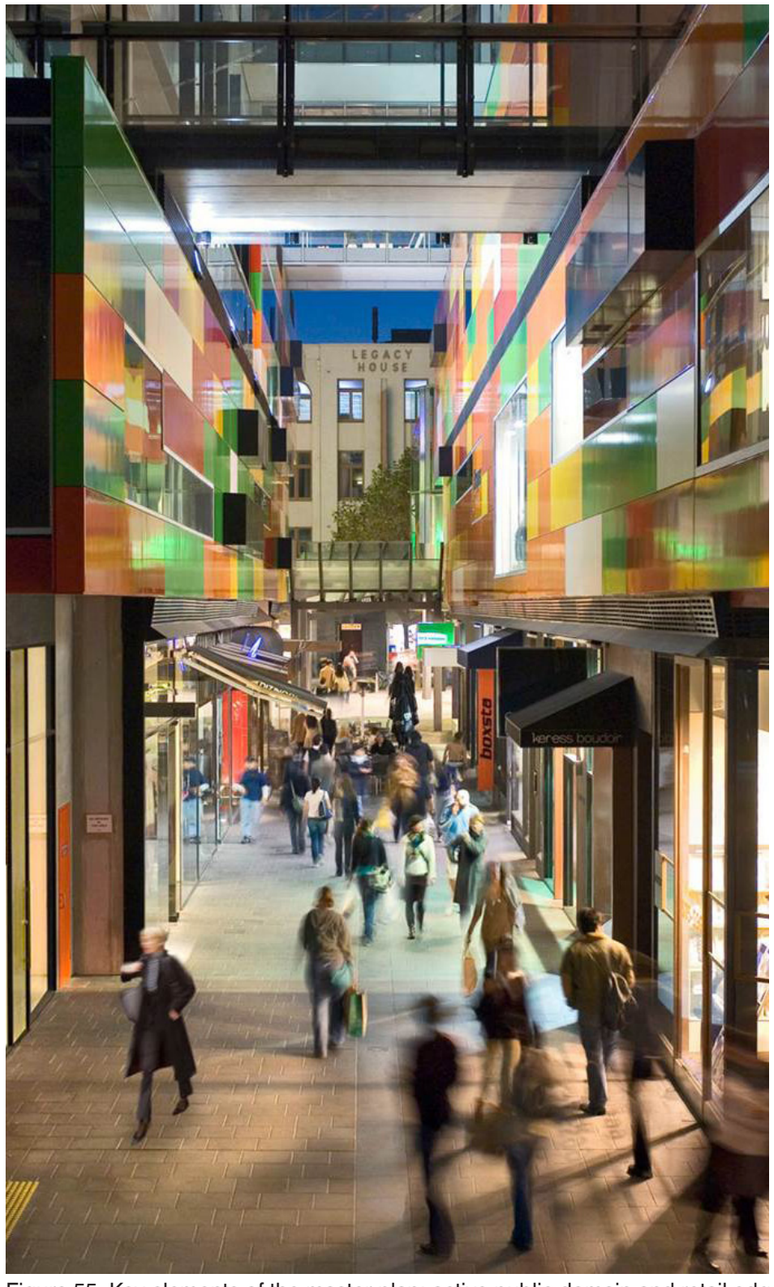


Figure 55. Key elements of the master plan: active public domain and retail edges.

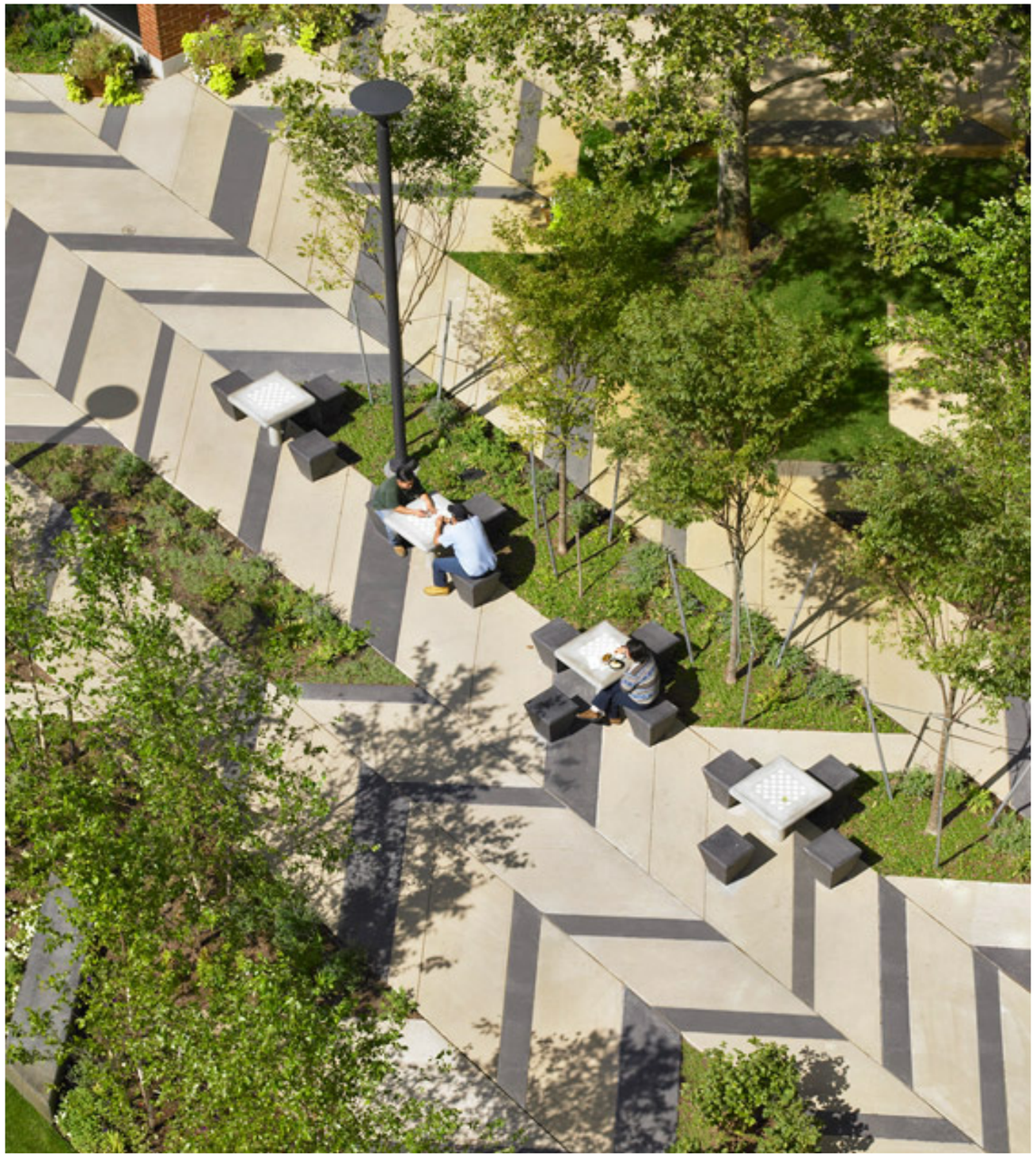


Figure 56. Key elements of the master plan: public plaza.

4.2 Retail vision

Retail vision and concept

Refer to the Burwood Retail Masterplan by Bonnefin and Associates at the Attachment B.

The vision for the project is founded on the principle of the “Market Place”. A collection of supermarkets and food providers, restaurants, bars and cafés, connected by a series of outdoor dining and recreation areas.

Every day needs and services are an important part of the offer and the concept see these being inter-woven in the high street design on ground level.

An Entertainment Precinct is an extremely complimentary addition to the concept and would assist in the creation of a town square, a central hub for people to: “meet, eat, play, work, relax and entertain”.

Activation of the ground floor plane through a series of wide open streets and centred around a central open air piazza will enhance the ambience and vibe of the residential and commercial components and will be seen as a great benefit to the project.

The proposed retail component will complement the existing retail hierarchy already established within Burwood.

Figure 57. Retail Vision.

Small operators, Lane Way Retail and Street Hawker Style Food

Café/Bakery

Potential Choices for Fresh Food

Butcher

Best Ugly Bagels (NZ)

Charcutrie

Bakery/Cafe

Ice Cream and Desserts

Asian Bakery

Asian Grocery Market

Cafe with Gourmet Food

Organic Grocer and Cafe

Ice Cream

Seafood

Wine

4.3 The master plan

Key features of the Master Plan:

– A vibrant mix of uses, including high density residential (with up to 1,100 apartments), to create an extended hours urban retail centre for this strategic site within Burwood Town Centre;

– Commercial floorspace (approx. 1,832 jobs).

– Retail activation at ground level of Railway Parade and Wynne Avenue;

– Through site links and public laneways to break up the large block and increase pedestrian permeability;

– Provide much needed urban plaza space taking advantage of its northerly aspect 4,100m^2 of public space;

– Transition of buildings heights with a 3 storey street wall with tall, slender towers;

– Location and orientation of towers to maximise views, minimise overshadowing and maximise separation with the neighbouring tall buildings potential and under construction; and

– Location of car parking and loading in the basement (no above ground car parking) for approx 2,000 - 2,200 car spaces.

Master Plan data	
Site Area m^2 (excluding Wynne Ave)	14,363
Overall FSR	10.54 :1
Non-residential FSR	3.374:1
Residential FSR	7.161:1
Approx. GFA m^2:	
Non residential GFA	48,467m^2
Residential GFA	102,858m^2
Total GFA	**151,325m^2**

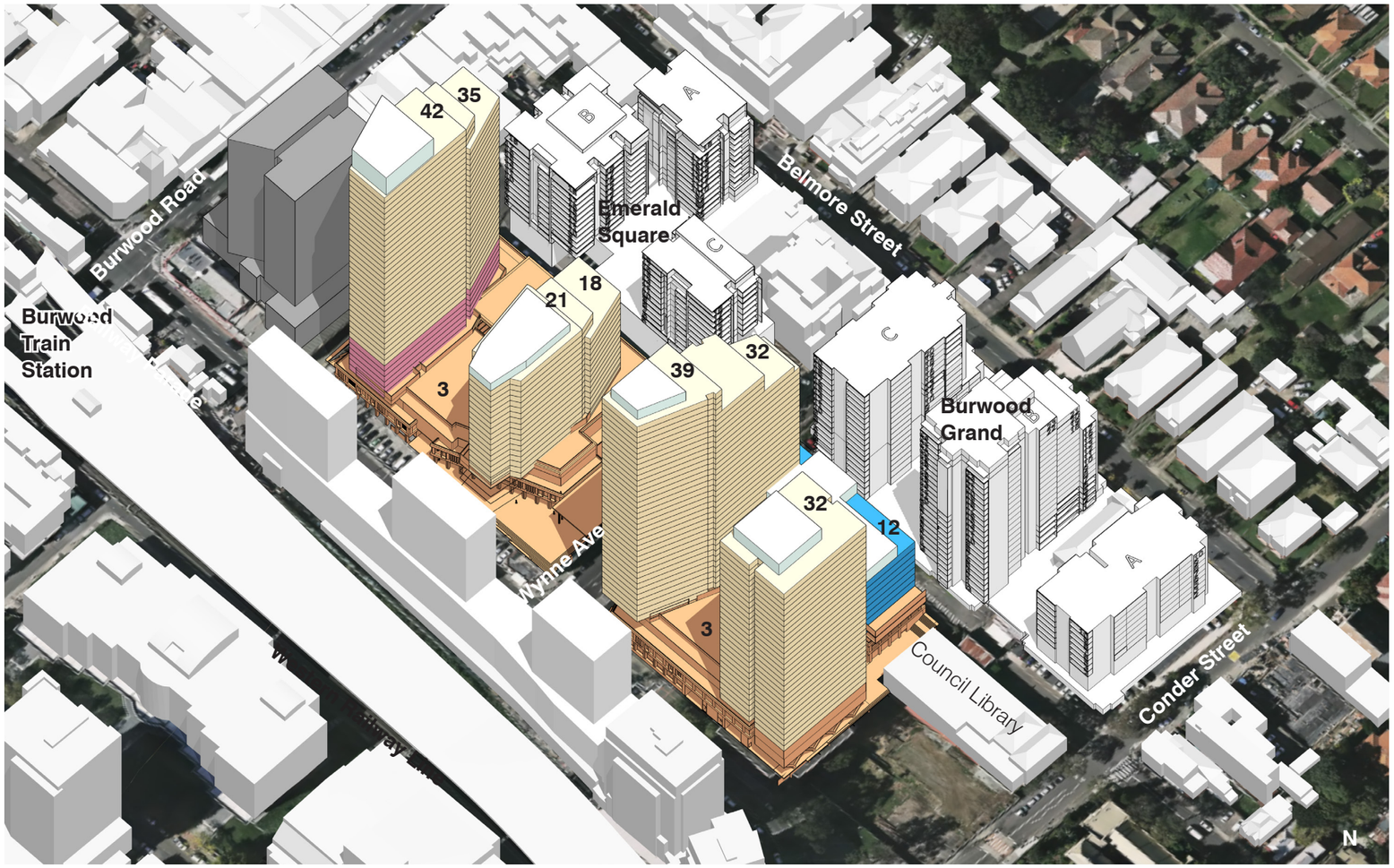


Figure 58. The proposed master plan building envelopes with building height in storeys (excluding plant and lift overrun). This view shows the variety of building heights above the three storey podium with towers varying from 15-42 storeys stepping up towards the rail station.

Legend:

- Retail
- Commercial
- Hotel
- Residential
- Plant / lift overrun
- Existing Buildings
- Buildings under construction / DA submitted

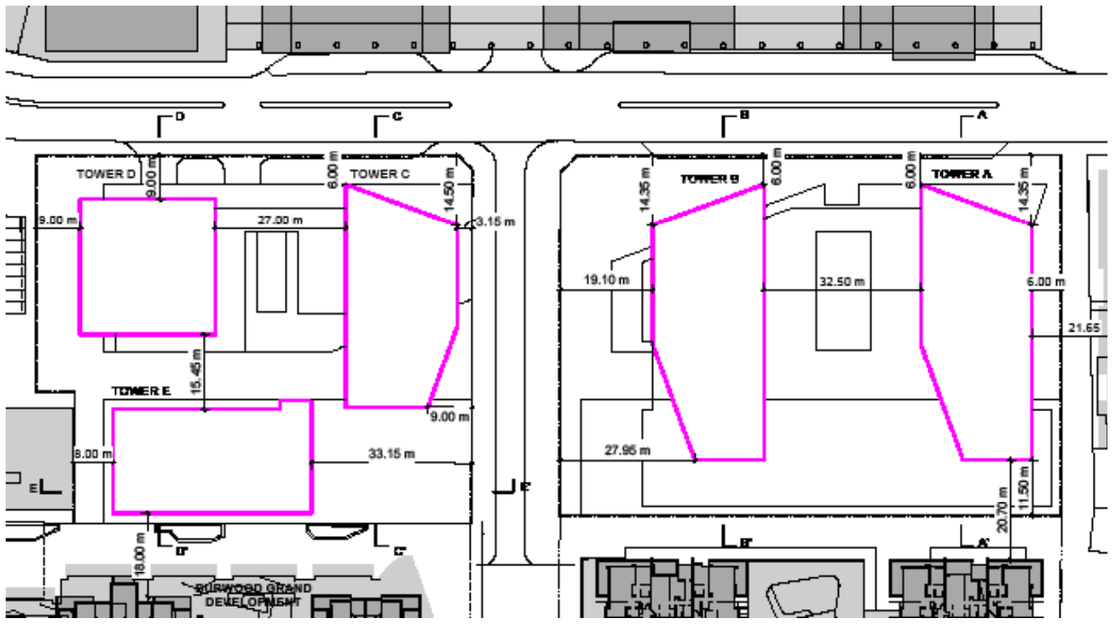
Figure 59. Indicative visualisation of the proposed master plan - view from Railway Parade looking south to public domain, which will be a major civic focal point and meeting area for the Burwood Town Centre which is lacking south of the rail line.

4.4 Tower envelope evolution

A - October 2016 built form (Approved at Gateway)

Tower Evolution

A chronological summary of the tower evolution. These design changes were made after discussions with Council and updates to the brief requirements & further study/ investigation to the sites constrictions and reducing the proposals impact to developments to the south of the subject site.



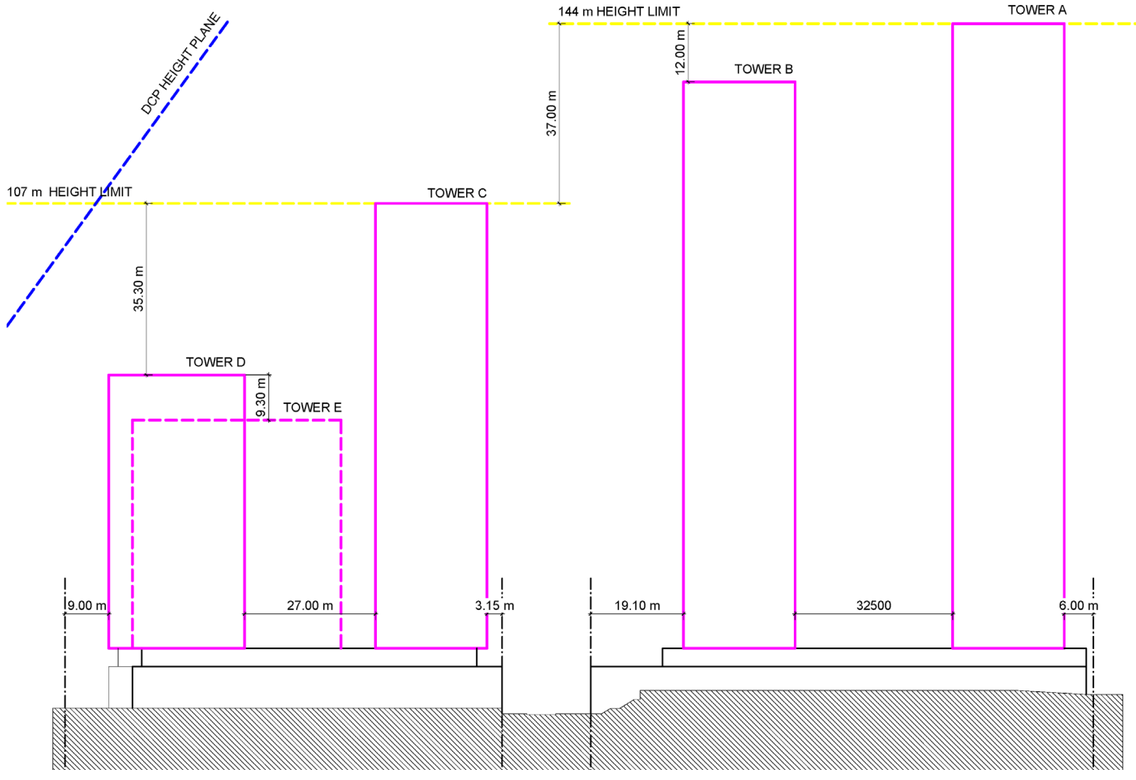
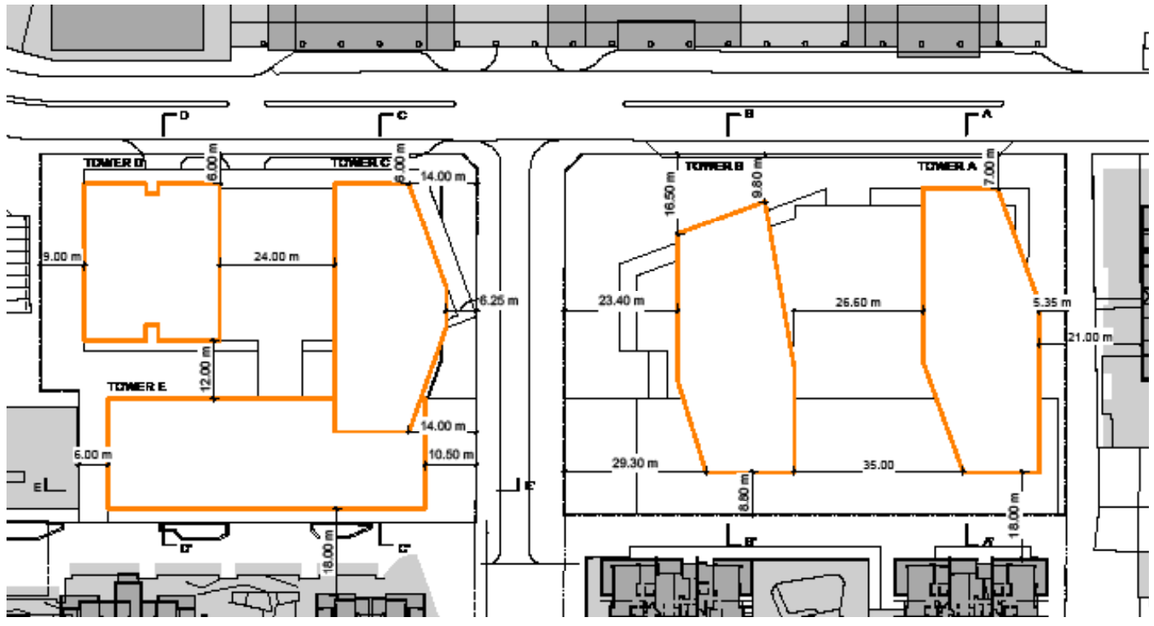
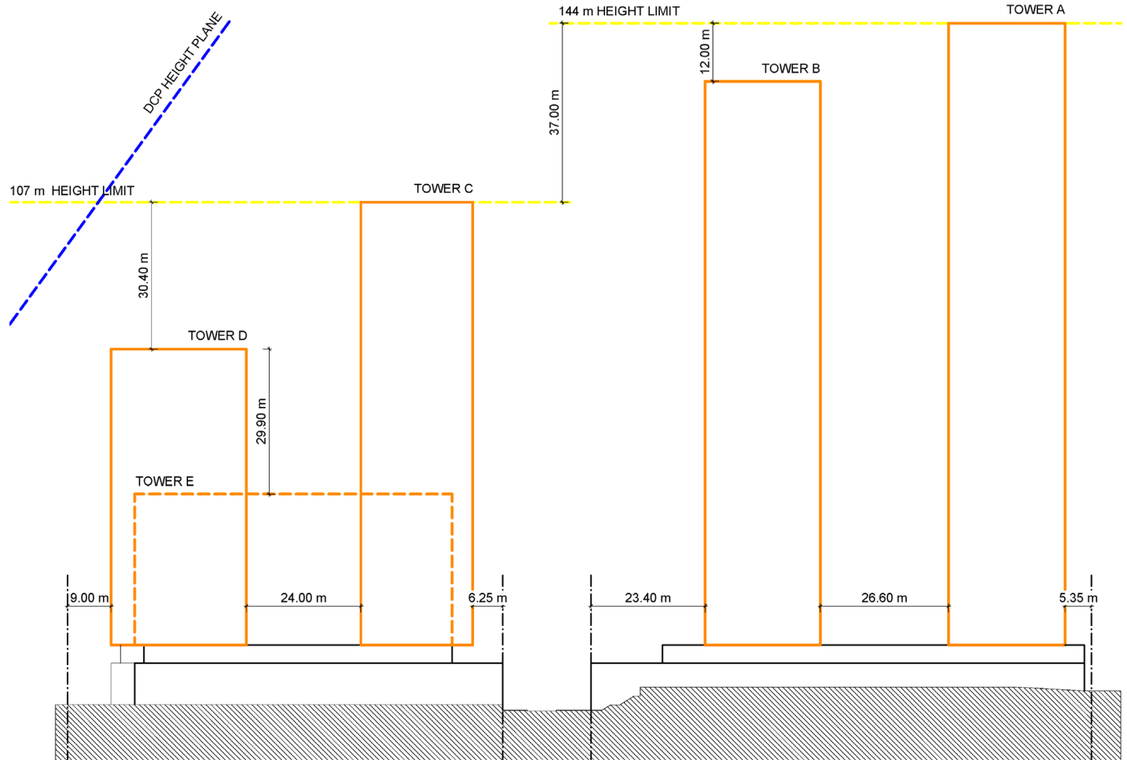


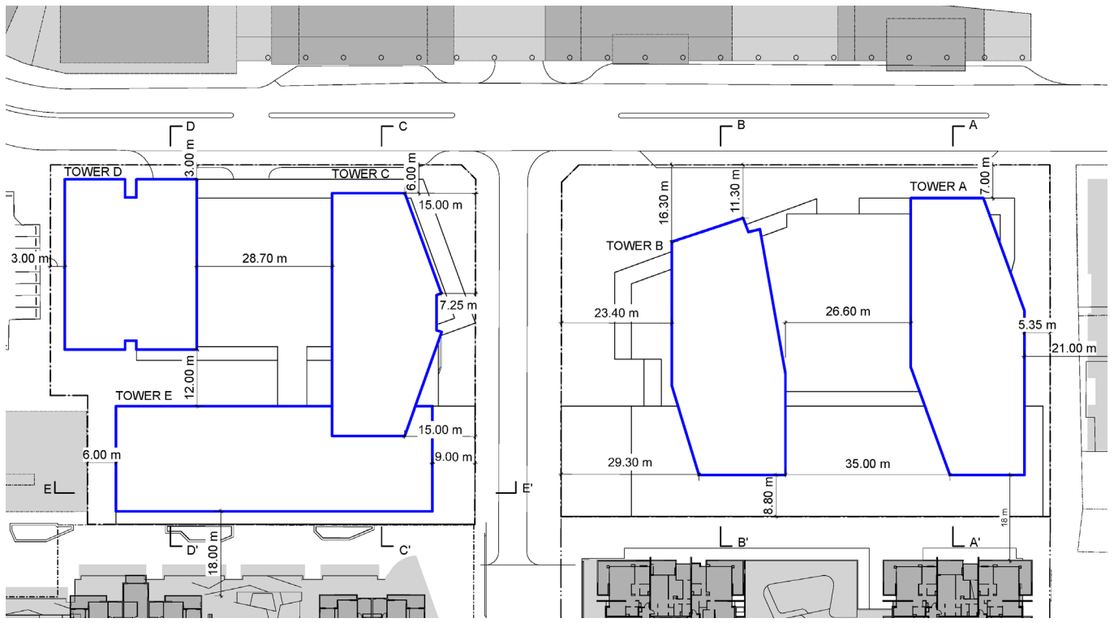
Figure 60. Tower evolution

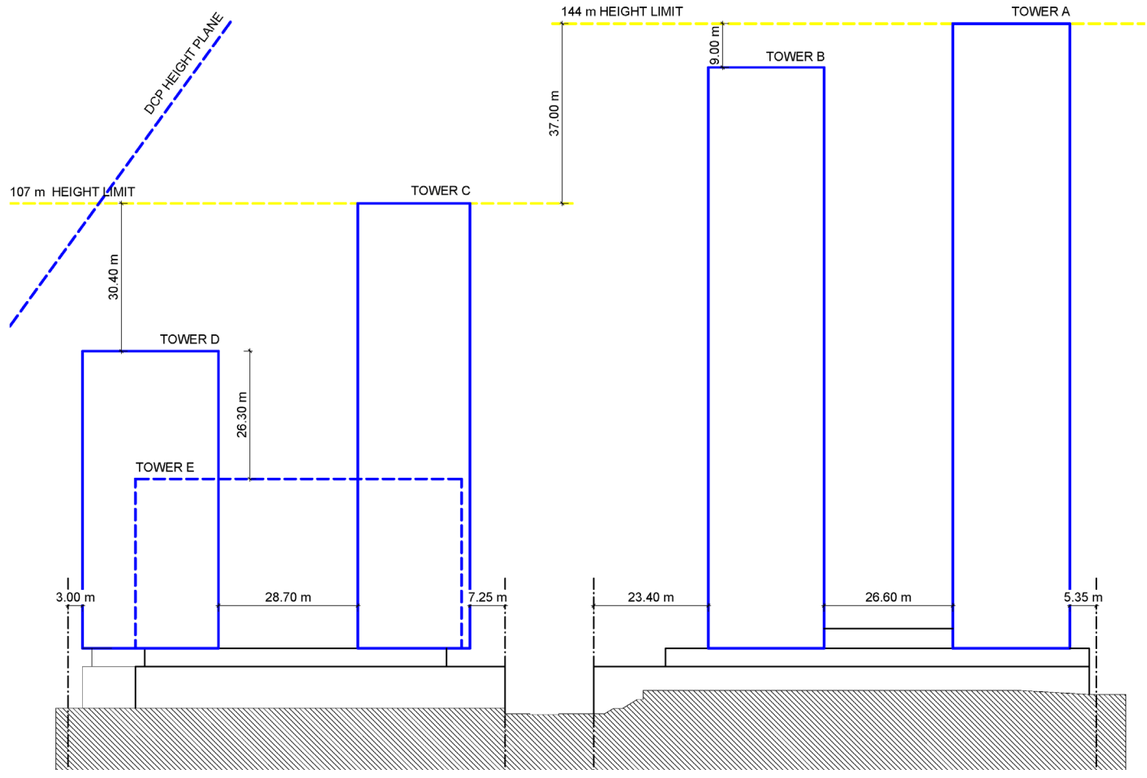
B - November 2017 built form (further tested forms)



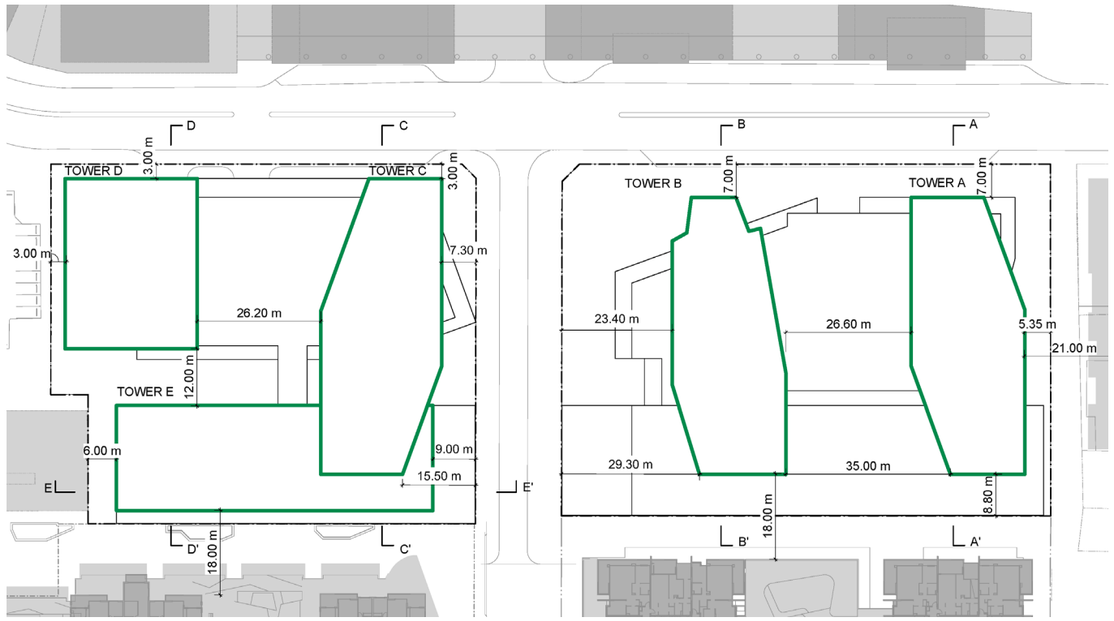


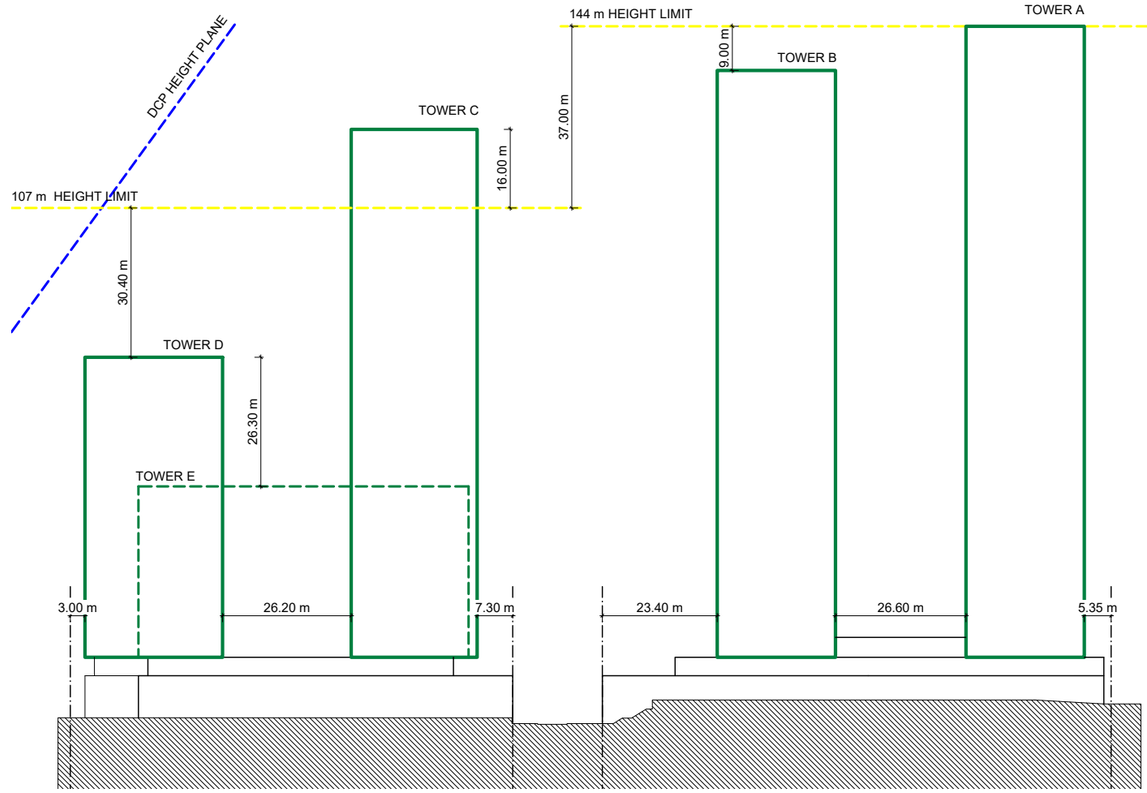
C - April 2018 built form (further tested forms)



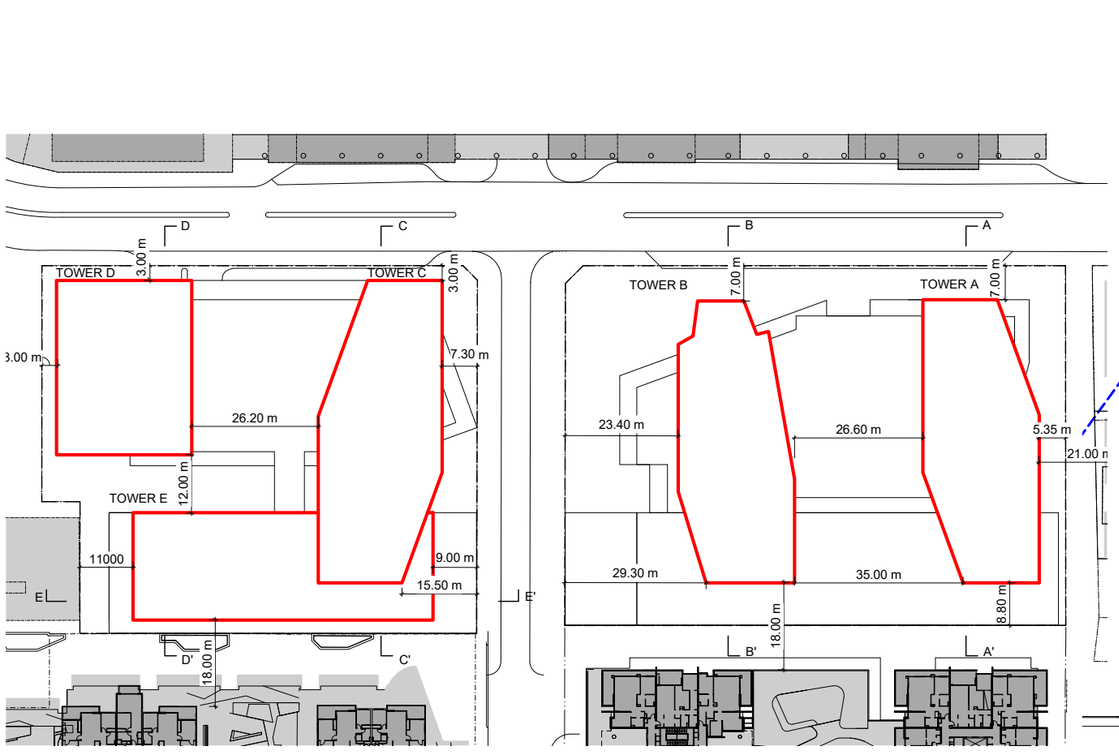


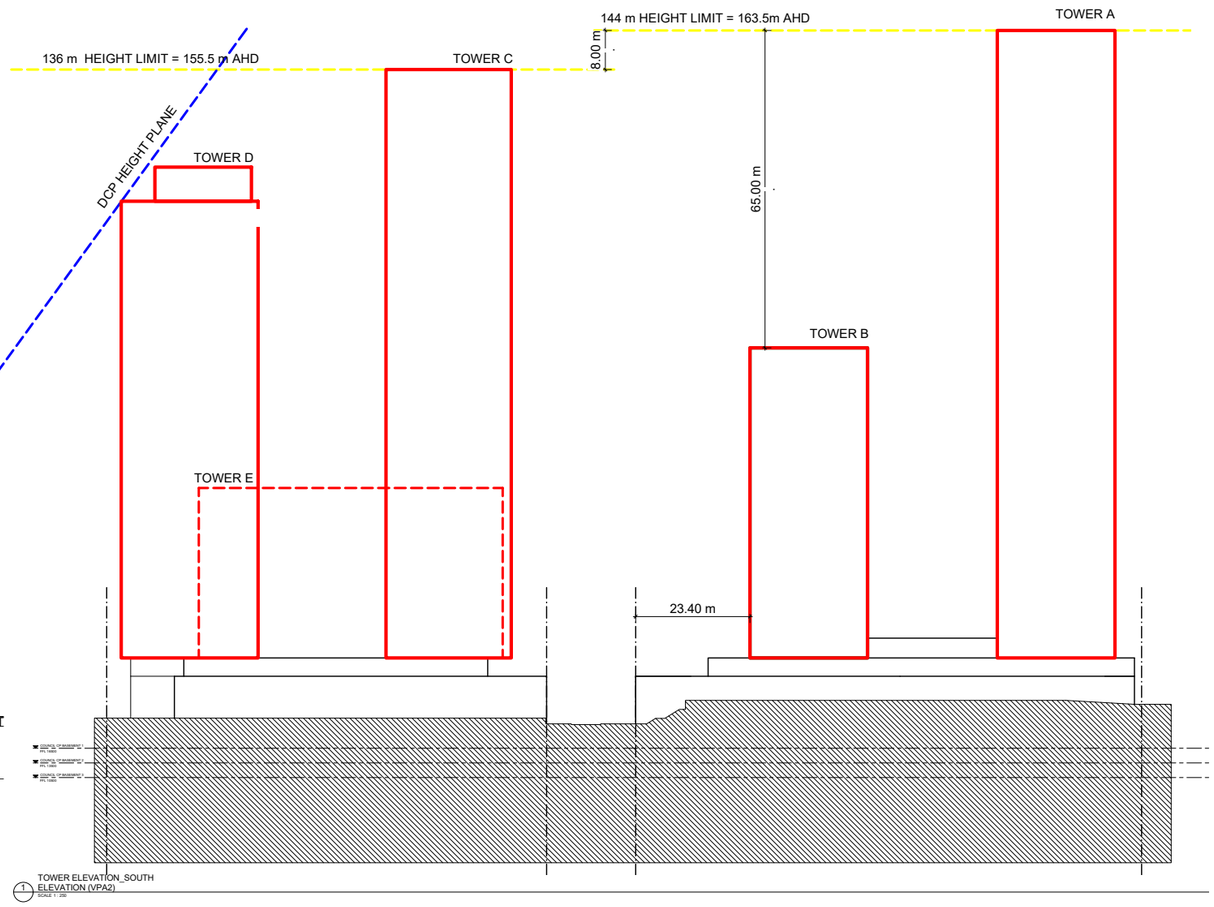
D - June 2018 built form (Re-lodged Planning Proposal - additional 9,000sqm GFA)



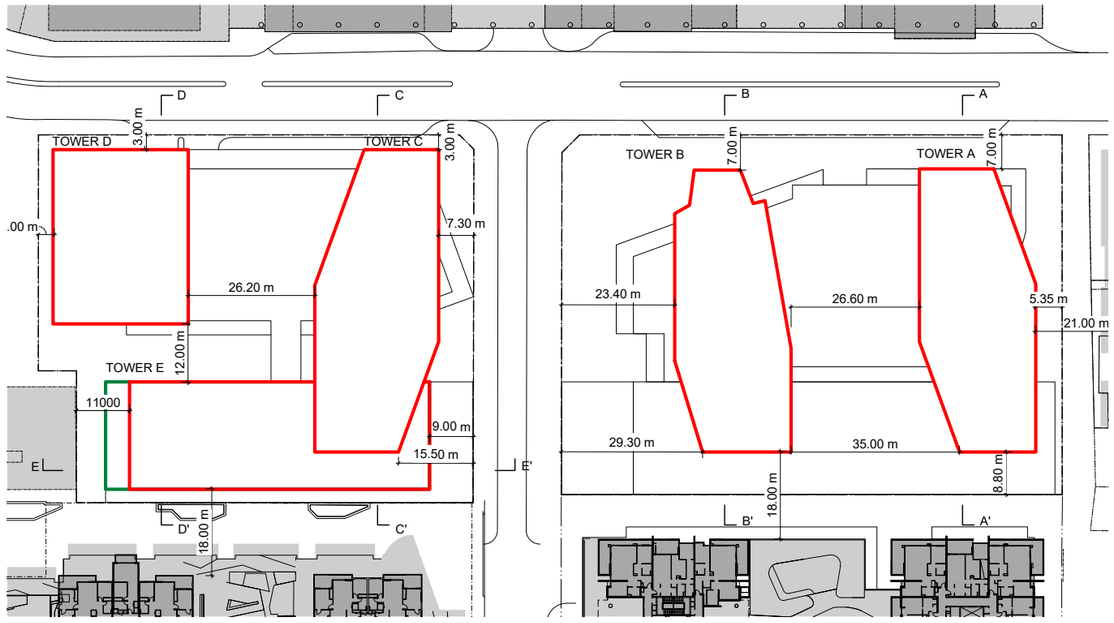


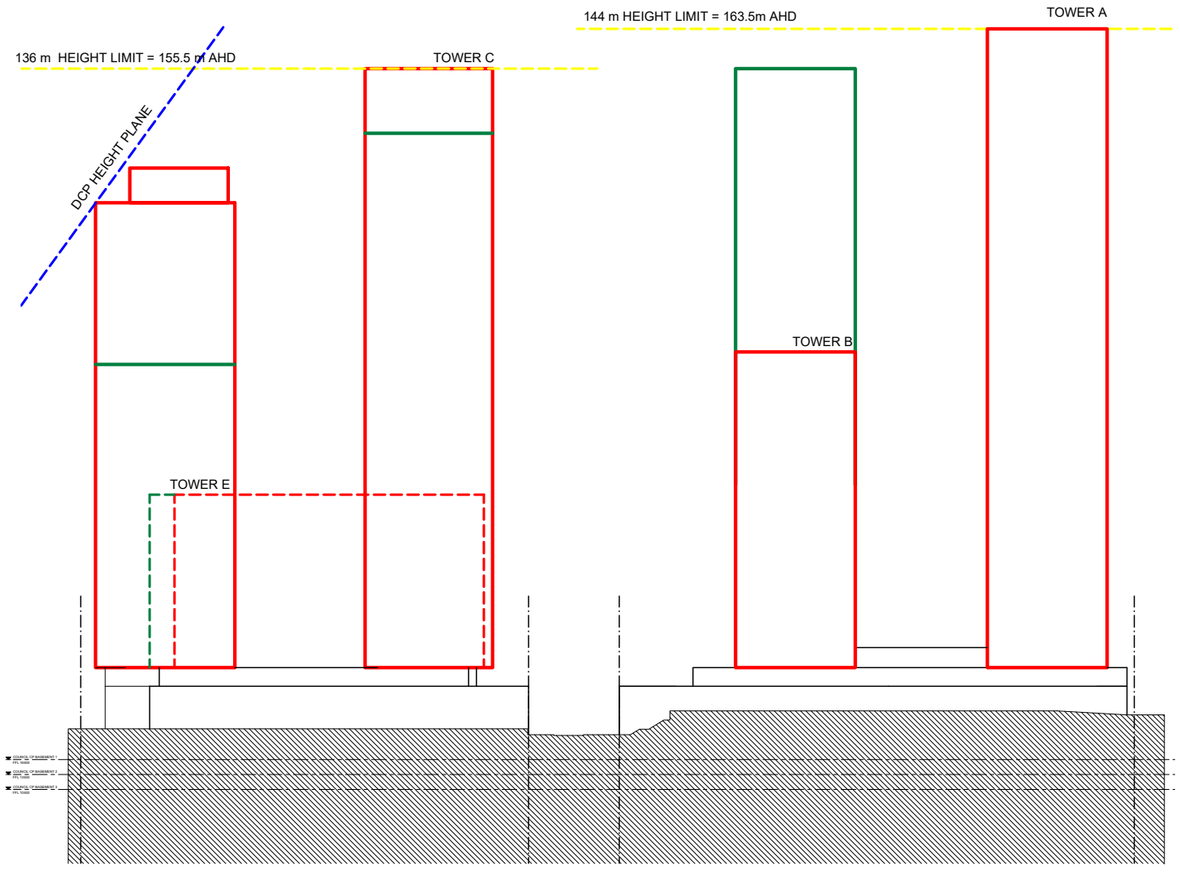
E - July 2019 built form - (Amended Planning Proposal - amended heights to improve solar access)





F - Comparison of June 2018 Re-lodged Planning Proposal and July 2019 (Amended Planning Proposal) built form





June 2018 built form lines

July 2019 built form lines

4.5 Public Domain Plan

As outlined in the Planning Proposal (PP) and as confirmed by Council, Wynne Avenue is not included within the boundary of this PP. As outlined in the traffic modelling investigations Wynne Avenue could be transformed into a partially closed thoroughfare accommodating pedestrian access, two (2) traffic lanes for vehicle movement and public domain improvements (at ground level and above ground level). This arrangement is illustrated in the plan prepared by Road Delay Solutions and is subject to further refinement which may be progressed at Development Application stage, subject to obtaining owner's consent from Council.

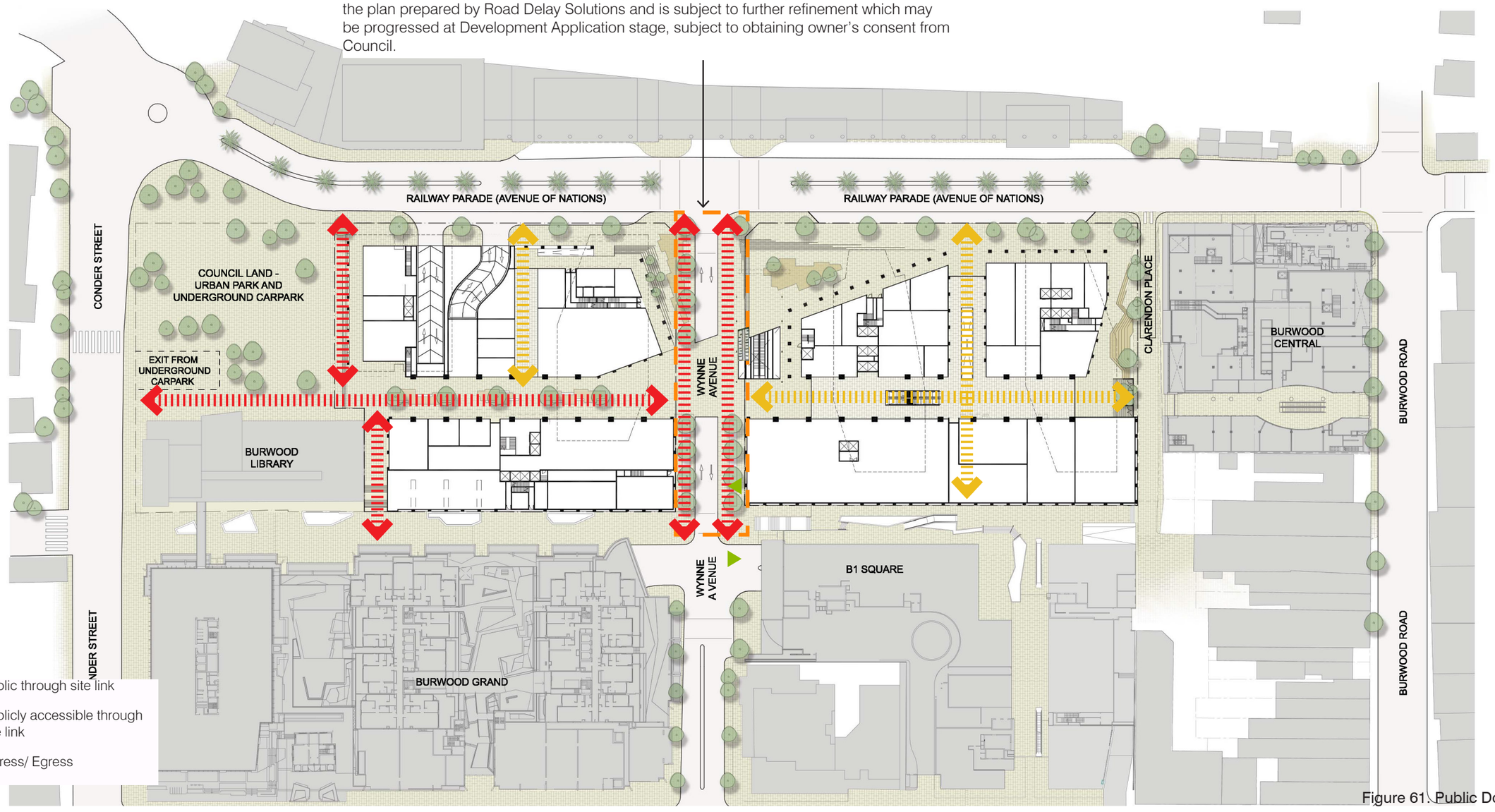


Figure 61. Public Domain Plan

4.6 Public Domain Plan on Private Land

As outlined in the Planning Proposal (PP) and as confirmed by Council, Wynne Avenue is not included within the boundary of this PP. As outlined in the traffic modelling investigations Wynne Avenue could be transformed into a partially closed thoroughfare accommodating pedestrian access, two (2) traffic lanes for vehicle movement and public domain improvements (at ground level and above ground level). This arrangement is illustrated in the plan prepared by Road Delay Solutions and is subject to further refinement which may be progressed at Development Application stage, subject to obtaining owner's consent from Council.

Figure 62. Public Domain Plan on private land.

The proposal provides 4,100m² of public accessible area within the site.

There is a potential for a partial closure or pedestrianisation of Wynne Avenue, this could allow the provision of a large plaza space and pedestrian links and thoroughfares. The site area of Wynne Avenue is presently 1,338m². With the enlarged Wynne Ave plaza through site links and setback to Railway Pde, the total potential public domain area could be 5,438m².

4.7 Proposed building envelope plan

Figure 63. Plan of the proposed master plan building envelopes with building height in storeys (excluding plant and lift overrun)

Legend:

- Retail
- Commercial
- Residential
- Hotel
- Existing Buildings
- Buildings under construction / DA submitted

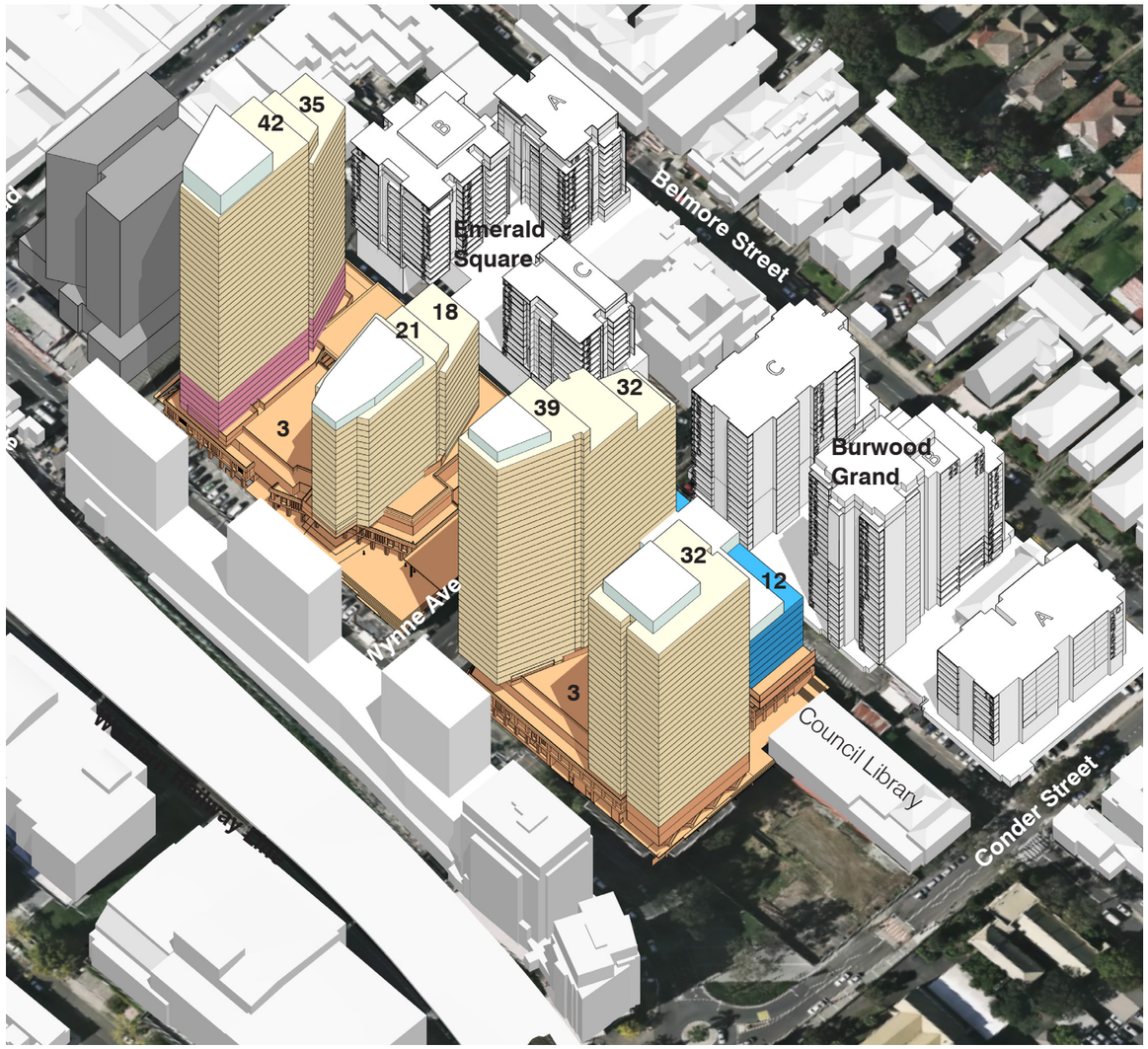


Figure 64. View of the proposed master plan building envelopes with building height in storeys (including plant and lift overrun envelope, coloured in light blue).

Proposed building heights. It should be noted that the building envelopes outlined shows building heights of up to 12 storeys and 42 storeys. The Planning Proposal includes additional 4 metres in all the towers in order to allow for design flexibility at DA stage, but regardless of the height in metres any proposal would still need to comply with Council's existing Building Height Plane control. The maximum proposed height of 144 metres equates to 163.5m AHD.

4.8 Floor Space Ratio and GFA calculations

July 2019 (amended PP)	
Site Area m² (excluding Wynne Ave)	14,363
Overall FSR	10.54 :1
Non-residential FSR	3.374:1
Residential FSR	7.161:1
Approx. GFA m² :	
Non residential GFA	48,467m²
Residential GFA	102,858 m²
Total GFA	**151,325 m²**

Note: The data remains unchanged compared to the approved Gateway Planning Proposal.

As outlined in the above table, the proposed controls maximises the development potential of the site.

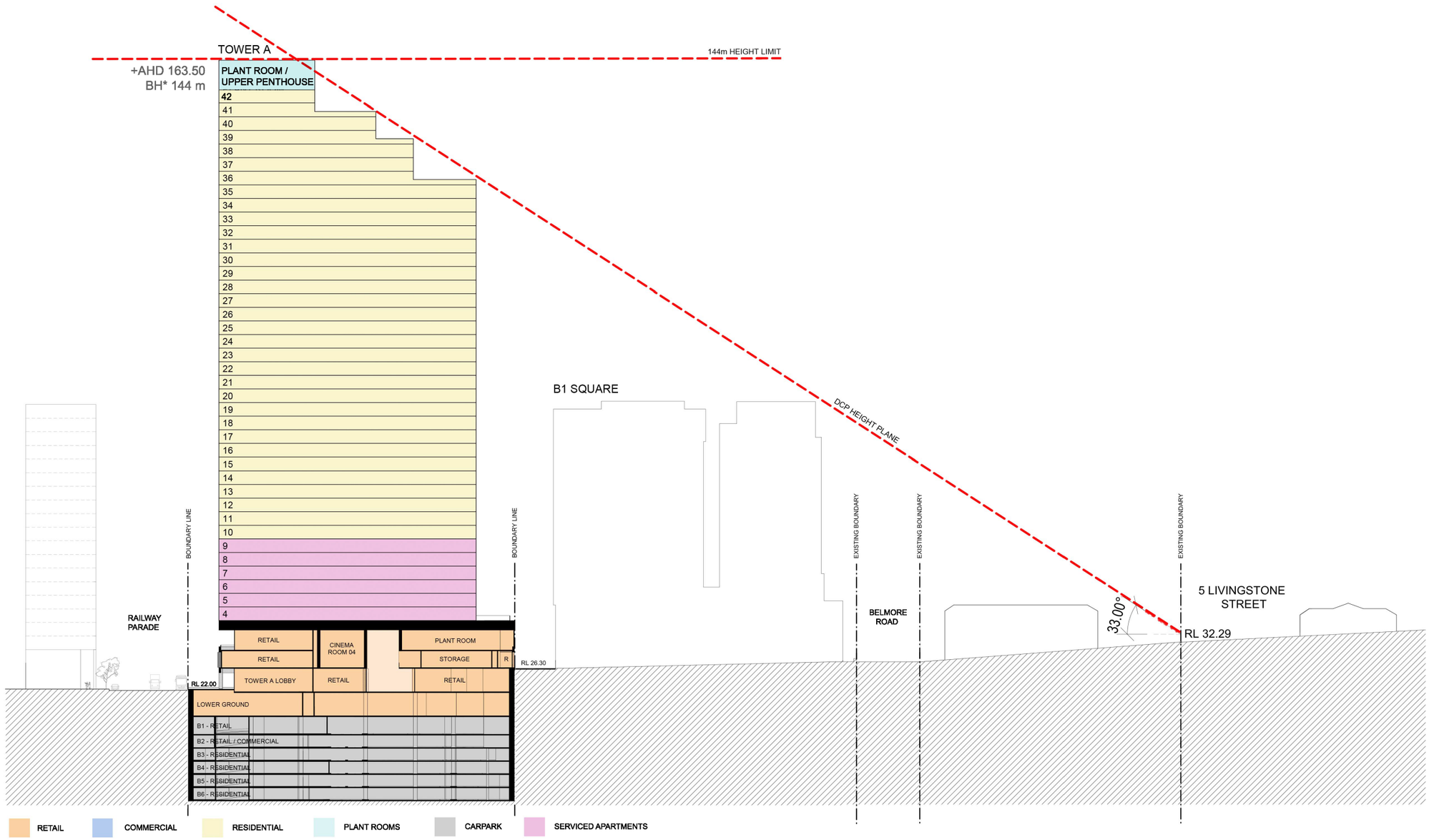
When compared with the complying concept, the proposed controls equate to an additional 74,872m² of GFA (the same GFA as approved Gateway Planning Proposal).

The proposed built form will reinforce Burwood's role as a Strategic Centre, provide a landmark entrance to Burwood, whilst assisting Council in meeting its housing and employment targets.

Comparison with complying concept

LEP complying concept	
Site Area m²	14,363
Overall FSR	5.3 :1
Non-residential FSR	3.3:1
Residential FSR	2.0:1
GFA m²:	
Minimum non residential	47,593
Maximum residential	28,860
Total GFA	**76,453**

4.9 Proposed north-south section and height plane control

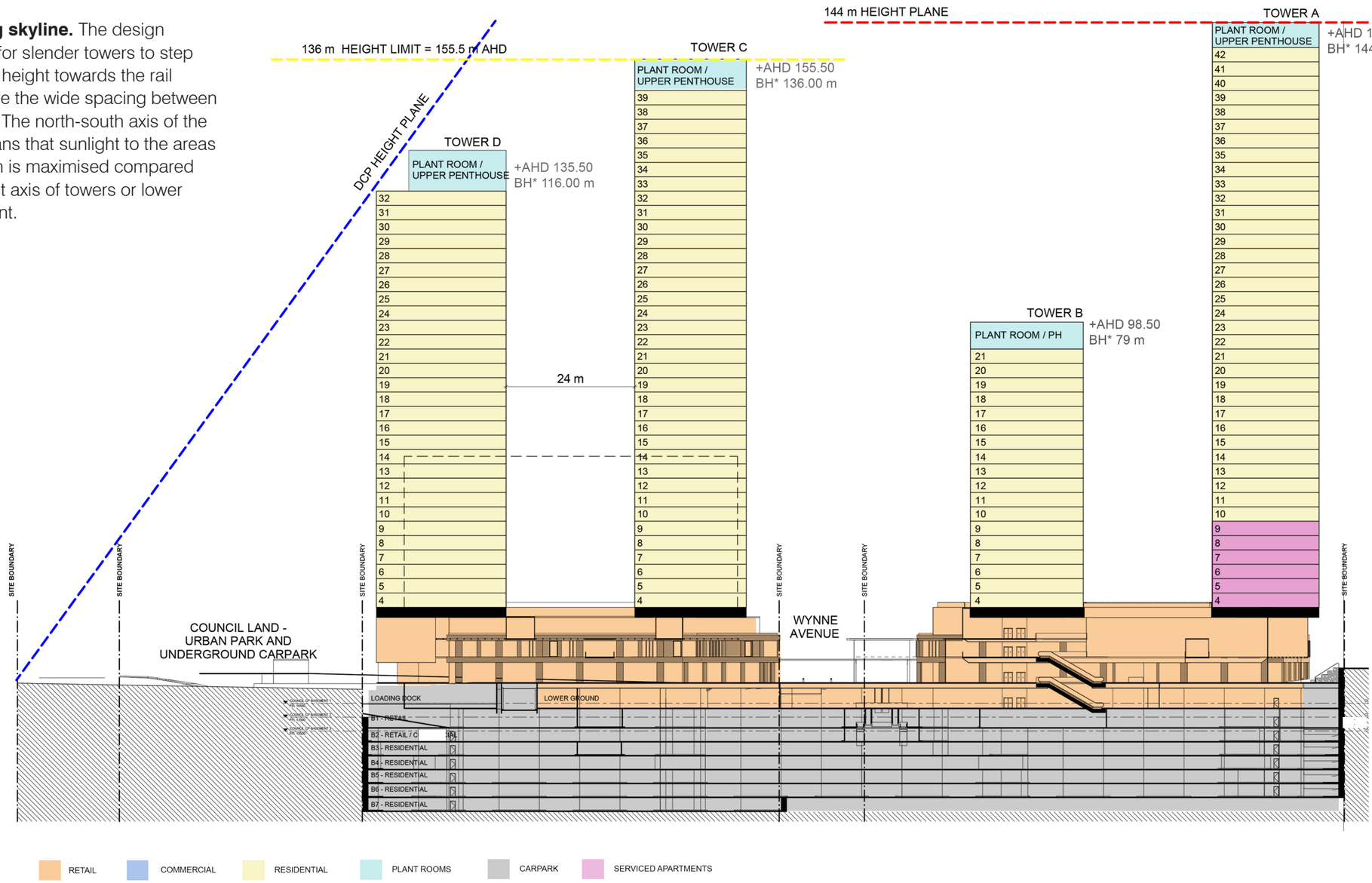


*BH: Building Height

Figure 65. Proposed north-south section. This diagram shows the maximum building height limit of the PP AT rl 163.5 (note the aviation height limit is 181.5 RL). There is an existing angled building height plane from Council's DCP (which springs from the site boundary of the rear yards of properties fronting Livingstone Street). It can be seen that the building heights proposed by the Master Plan is within the height plane. Note that the current height limit is 20 storeys on the site. The Master Plan seeks higher heights consistent with the underlying principle of the angled height plane.

4.10 Proposed east-west section

Interesting skyline. The design concept is for slender towers to step upwards in height towards the rail station. Note the wide spacing between the towers. The north-south axis of the towers means that sunlight to the areas to the south is maximised compared to east-west axis of towers or lower development.



Note 1:
As outlined in the Planning Proposal (PP) and as confirmed by Council, Wynne Avenue is not included within the boundary of this PP. As outlined in the traffic modelling investigations Wynne Avenue could be transformed into a partially closed thoroughfare accommodating pedestrian access, two (2) traffic lanes for vehicle movement and public domain improvements (at ground level and above ground level). This arrangement is illustrated in the plan prepared by Road Delay Solutions and is subject to further refinement which may be progressed at Development Application stage, subject to obtaining owner's consent from Council.

Figure 66. Proposed east-west cross-section of the Master Plan. The idea is for slender towers to step upwards in height towards the rail station. Note the wide spacing between the towers. The north-south axis of the towers means that sunlight to the areas to the south is maximised compared to east-west axis of towers or lower development. This section shows four levels of retail, fresh food and entertainment uses including a basement level for a large supermarket and a small supermarket. There is also 6 basement levels of parking provided. It is important that there is no above ground parking. This scheme opens up the retail areas to good sunlight, daylight and retail ventilation. Note the DCP Building Height Plane rising from Conder Street is not infringed by the proposal.

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5.0 Indicative architectural concept

The purpose of this section is to show a workable scheme within the building envelope and proposed planning controls.

Approval for the indicative architectural concept is not being sought at this stage.

5.1 Indicative plans

Basement car park

There are six (6) basement carpark levels, for approx 2,000-2,200 car park spaces. This plan shows the top basement carpark level with access points at the north-west and south-west corners, location of lift cores and location of travelators to the retail level above. The division of retail parking and residential parking is subject to further study - an indicative division is shown.

Garbage waste and loading for the apartment towers may be handled at this level. The south-west access point is subject to discussions with the owner of the site to the south. The site does have the benefit of an easement for vehicle assess through the site. There are advantages to both parties to reach agreement.

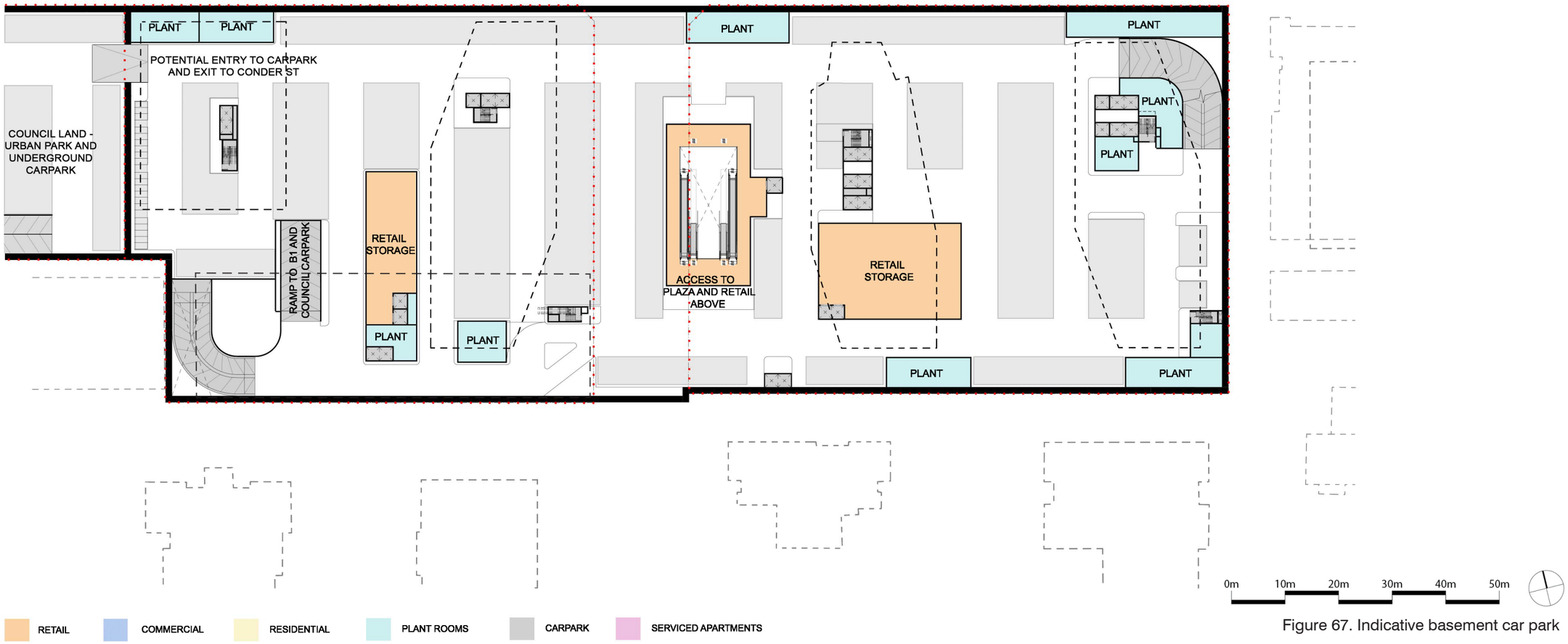


Figure 67. Indicative basement car park

Basement Retail Level

The lower ground or basement level provides 10,686m² of retail GFA which provides for a large full time supermarket (4,000m²) and a small supermarket (1,400m²) with some speciality shops (combined 5,286m²). This level is also the main loading dock level for retail uses, main vehicle access is to Railway Parade at the north-west of the site, with car access and truck access separated.

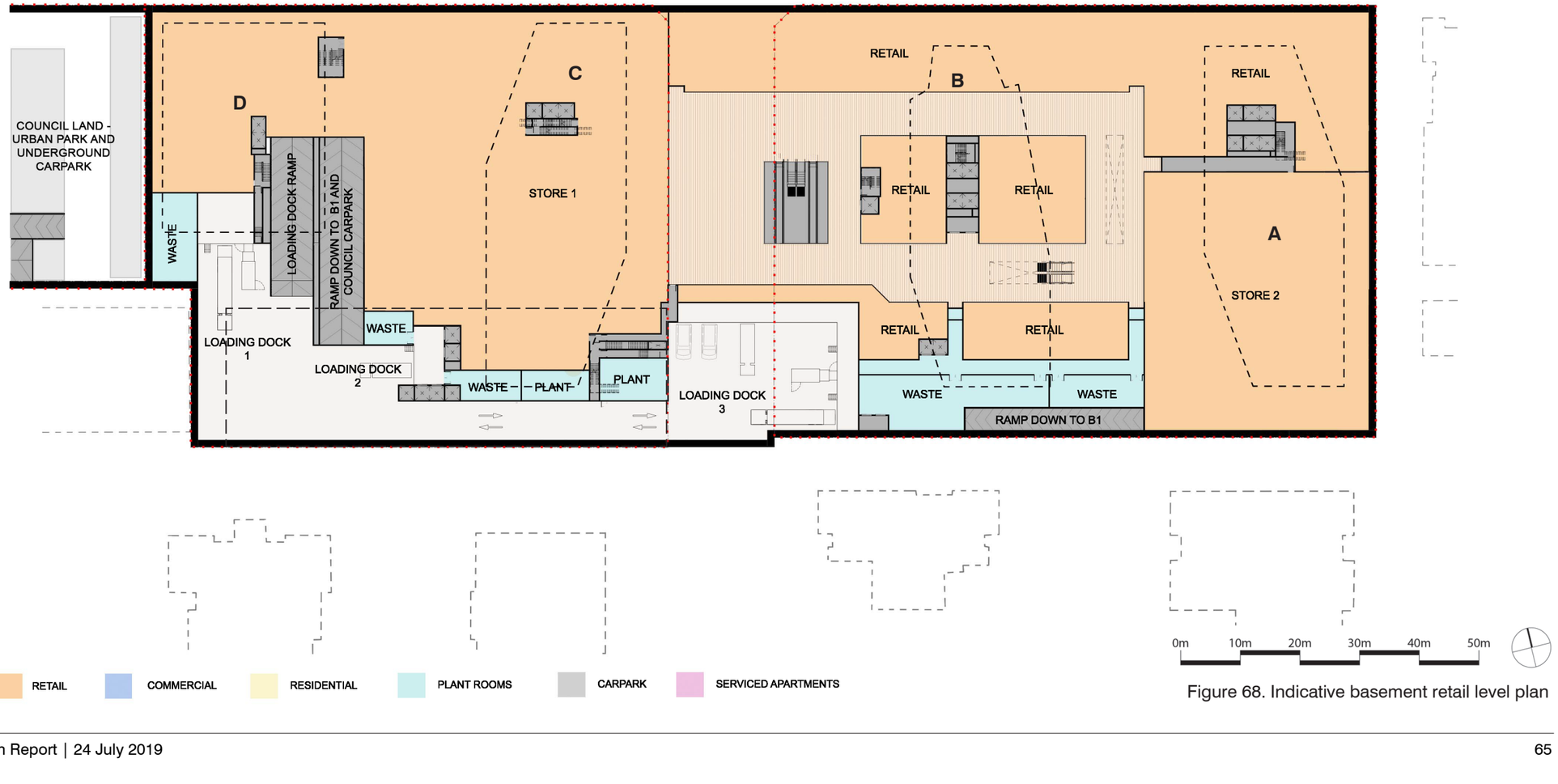


Figure 68. Indicative basement retail level plan

Indicative Layout - Ground Level

The ground level is the main retail level in the form of an open marketplace with a high level of pedestrian permeability with a potential new civic space at Wynne plaza (subject to a future DA) with 5,800m² retail floorspace. Walking westwards along Railway Parade you will see an entry via Claredon Place and see along the angled building to Wynne Plaza. Retail will activate all edges of the site including a new lane along the western boundary to the Council library, a new lane extending Hornsey St along the south boundary of the site, a new east-west lane/arcade through the site which will align with Murray Arcade east of the site and one north/south connection through the site. The development provides a 3m bus parking lane along Railway Parade and a 5m footpath suitable for outdoor dining. Options for residential lobbies are shown.

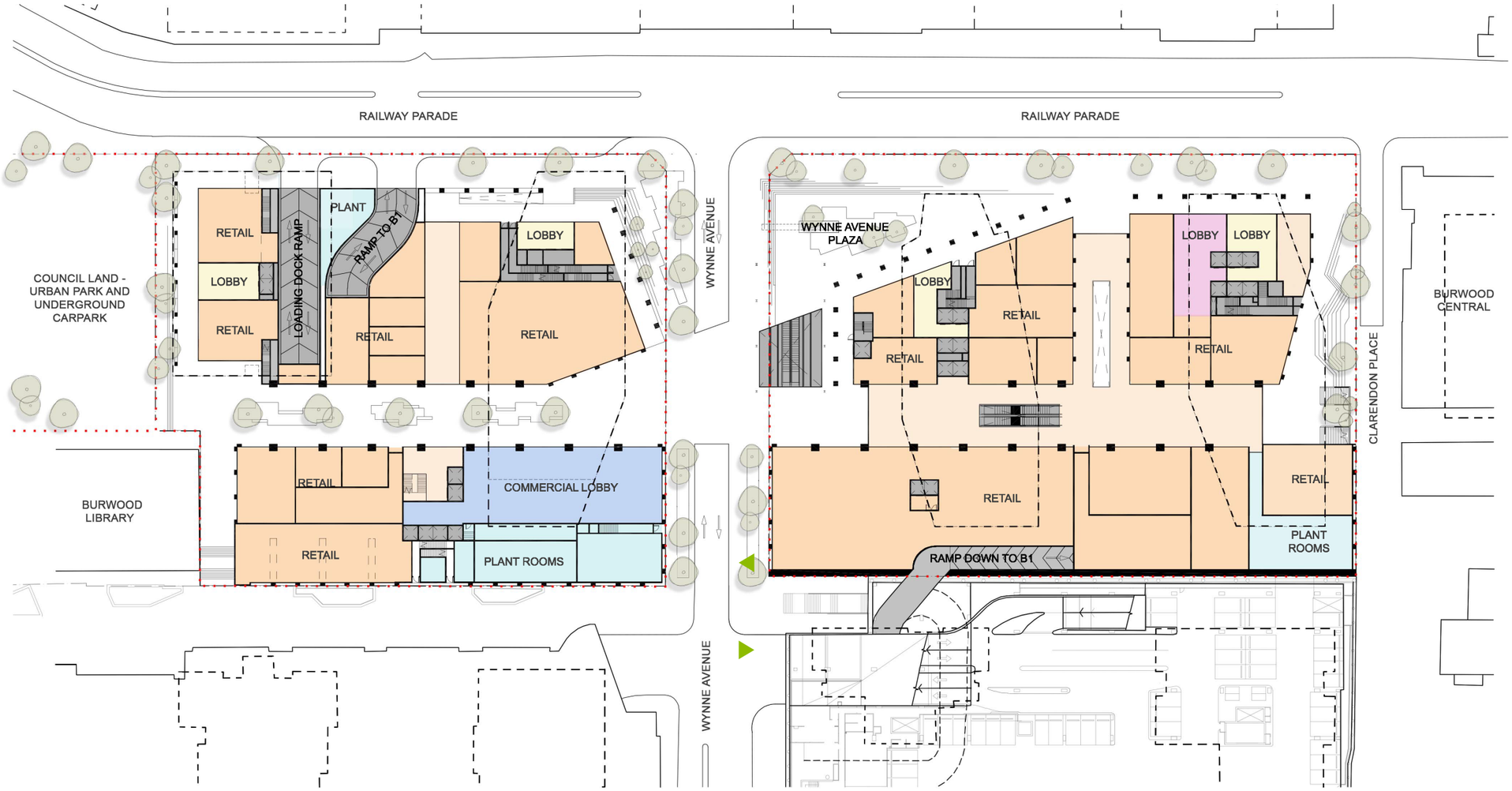


Figure 69. Indicative ground level plan

Indicative Layout Plan - Podium Level 1

The first floor or upper ground floor retail is suited for speciality shops and services, with a total of 8,600m² of retail floorspace (with a cinema). The western tower at this level facing the Council car park (future park) is suited to cultural and civic or retail uses, the commercial building at the south-west corner of the site would relocate tenants from the existing office buildings on the site in the first stage of the construction of the development.

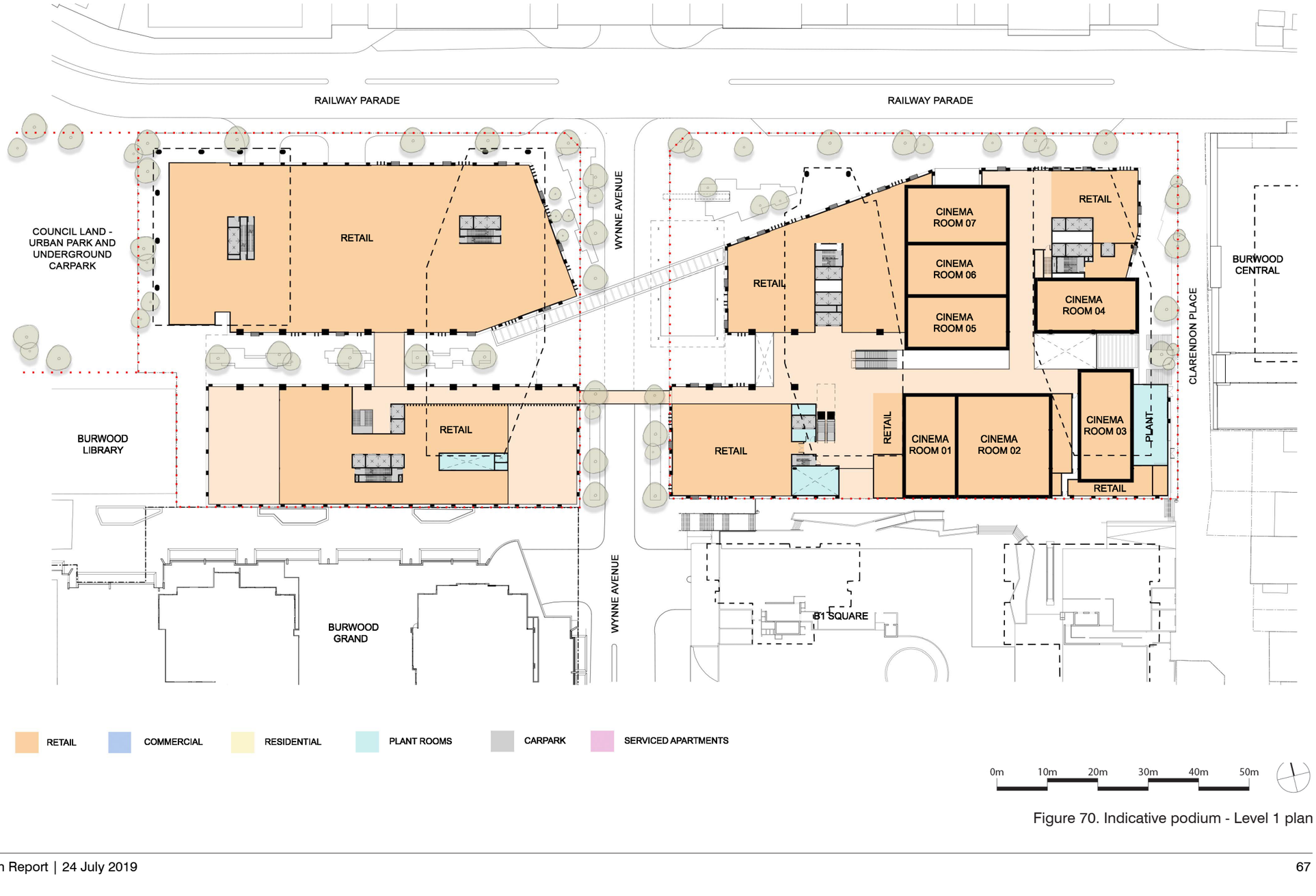


Figure 70. Indicative podium - Level 1 plan

Indicative Layout Plan - Podium Level 2

The third storeyhas 1,680m² of retail GFA and is suited to restaurants, entertainment uses and health/ gymnasium. The western site total podium area of 3,455 m² is dedicated to commercial floorspace.

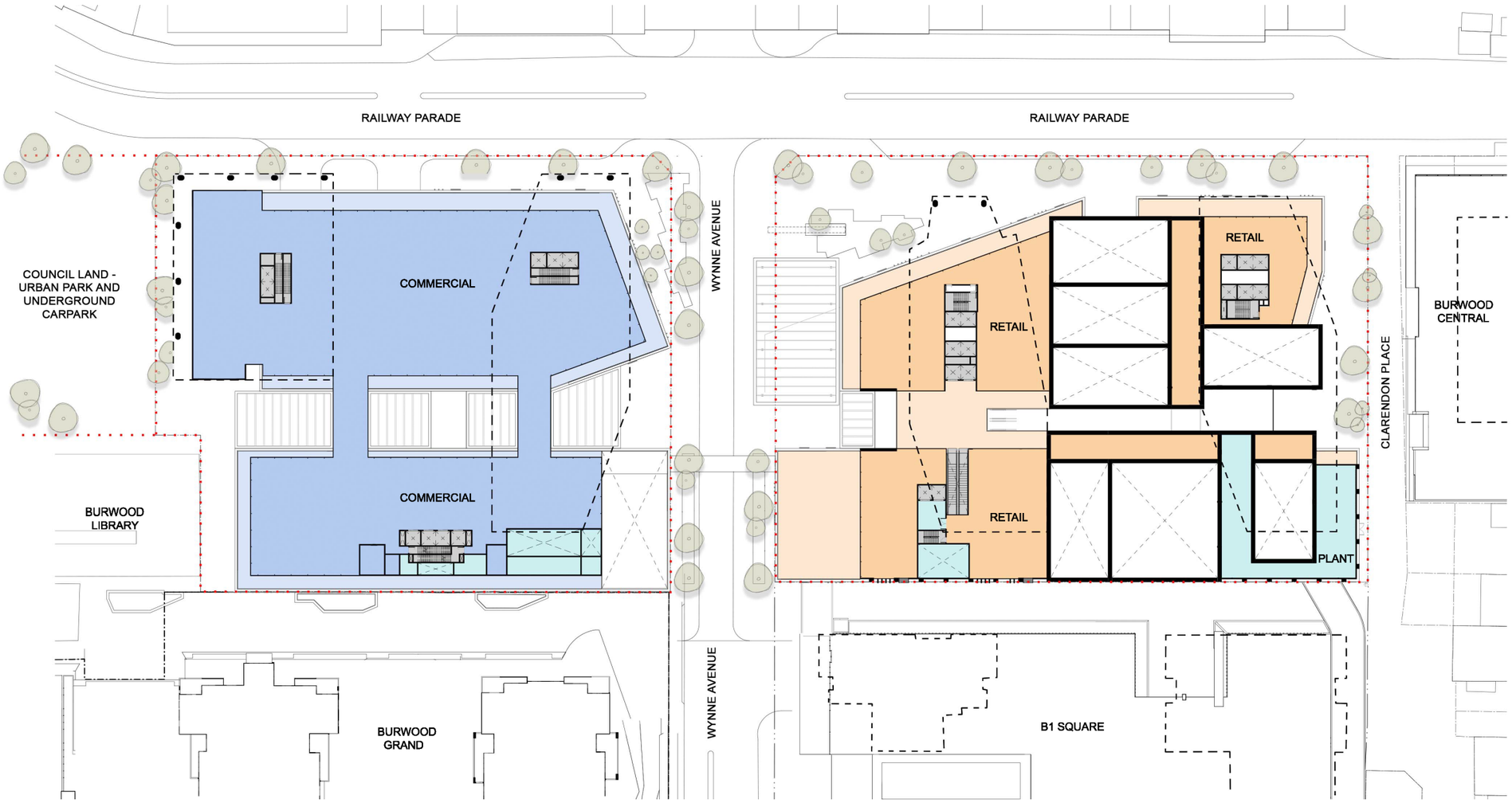


Figure 71. Indicative podium - Level 2 plan

Indicative Layout - Tower Level

The typical tower floorplate levels from the fourth floor upwards show a range of floorplates that would be further developed by future architectural design. Built form would be articulated for visual impact as to help breakdown the visual scale of the towers.

– Total of 102,858m²
(approx. 1,100 apartments)

– 15,429m² commercial

– Total of 5,536m² of approx 100
hotel rooms/ serviced apartments

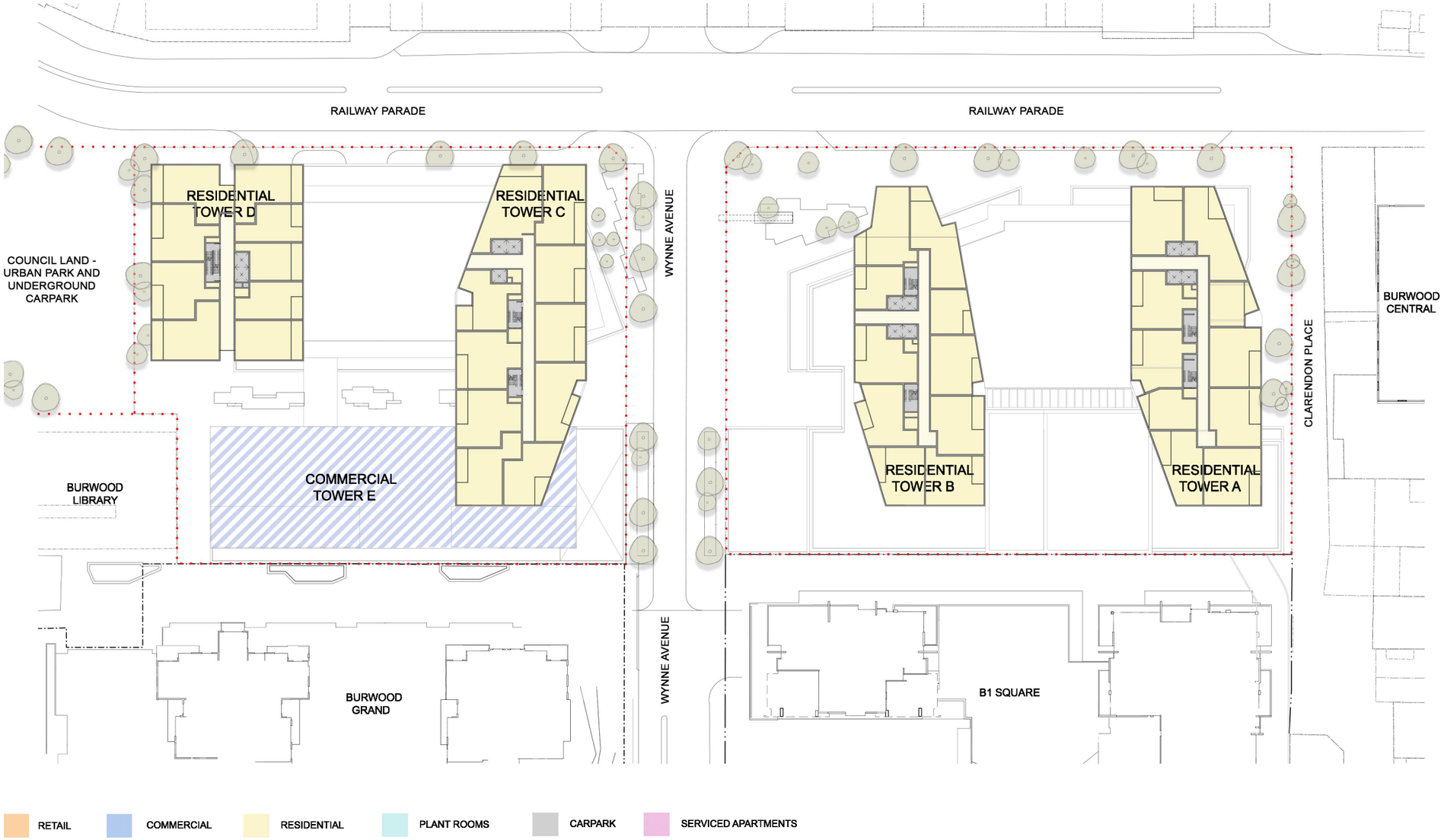
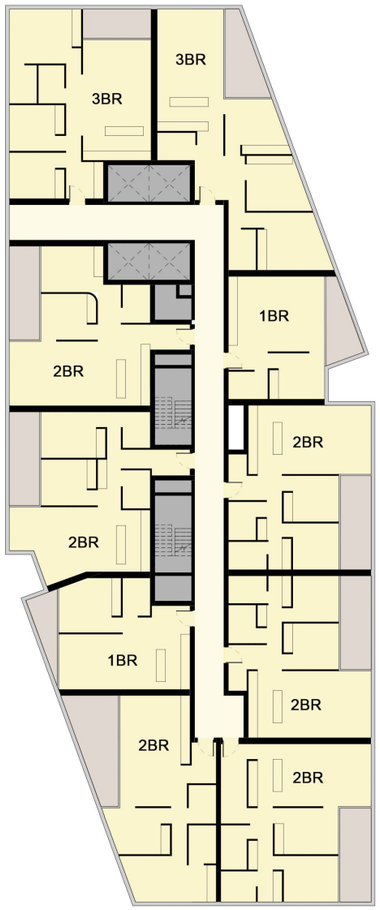


Figure 71. Indicative typical tower level

5.2 Indicative typical residential tower floor plan

These floorplate tests layouts show that the floorplates are workable and can accommodate the diversity of apartment type and size with good amenity and exposure to the outdoor common areas. The test floorplates show efficiencies of GFA (Gross Floor Area) to Building Envelope Area net is achievable at 80% efficiency. The floor plates have been designed to ensure no balconies or living spaces are south facing.



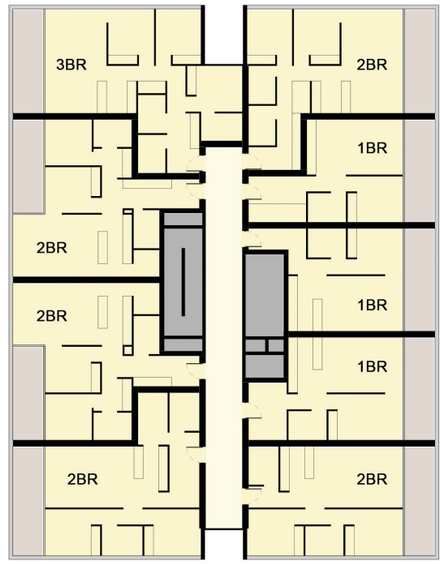
Tower A

TYPICAL LOWER LEVEL

Envelope	=	1137m2
GFA	=	948m2

1137m2 Envelope

80 % efficiency	915m2	
Apartment mix:		
	1 Bed	x 2
	2 Bed	x 5
	3 Bed	x 2



Tower B

TYPICAL LOWER LEVEL

Envelope	=	956m2
GFA	=	797m2

956m2 Envelope

80 % efficiency	797m2	
Apartment mix:		
	1 Bed	x 3
	2 Bed	x 5
	3 Bed	x 1

1:400 0 4 8 12 16 20M

Figure 72. Indicative typical residential tower floor plan

5.3 Building setout

This building setout plan shows the building envelope setbacks and tower separation distances. The Apartment Design Guide encourages towers to be separated by 24m which is generally exceeded by the Masterplan. The towers are carefully sited in relation to the apartment development south of the site as well as the proposed residential on the site.

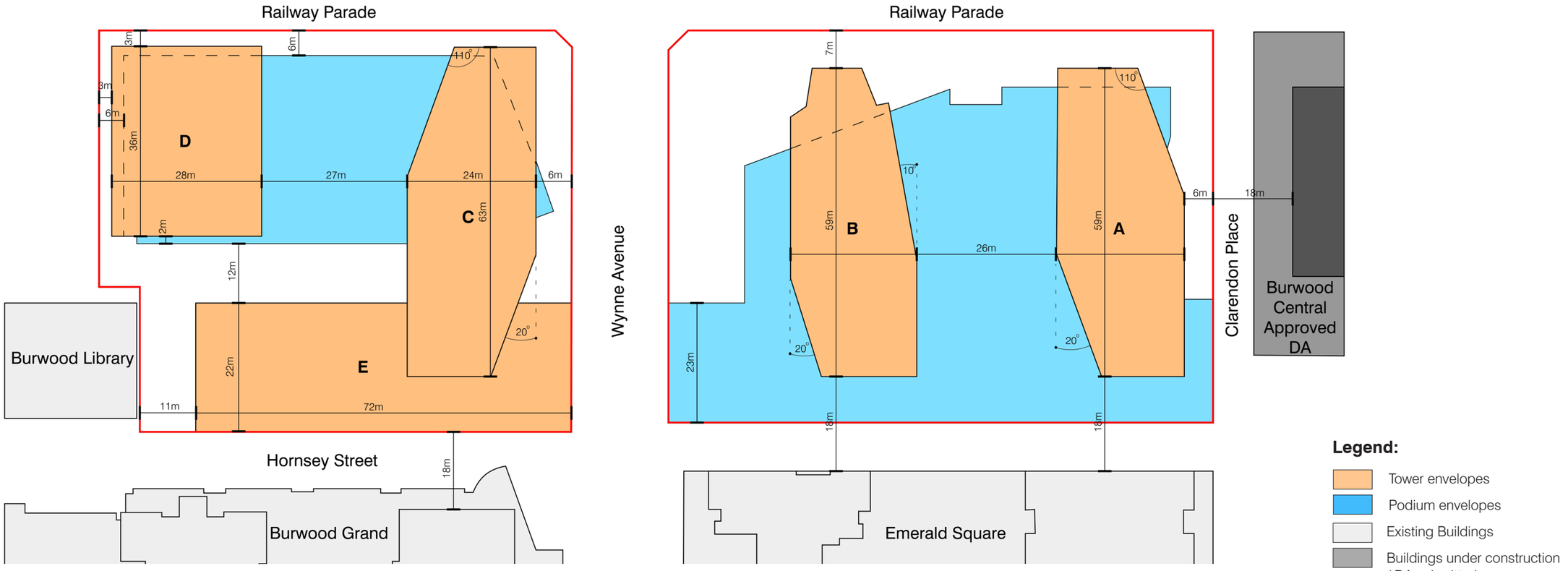


Figure 73. Building set out plan

5.4 Journeys around and through the indicative proposal

The visualisation sequences below provide a visual impression of what the walking experience would be like.

First journey - rail station to Wynne Plaza via laneways

1. View from Burwood Rd/ Railway Parade near the rail station along Railway Parade.

2. Approaching the site the first view will be along Claredon Place where the angled building form leads you to an entry to the site.

3. Moving along Claredon Place, the entry to the east - west arcade is revealed.

4. The east - west arcade viewed from Claredon Place. This arcade aligns with Murray Arcade behind this viewing point.

5. Along the arcade you can see through to Wynne Plaza.

6. Wynne Plaza opens up to view as you can see along to the Council land west of the site.

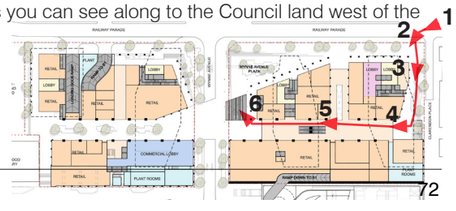


Figure 74. Indicative journey from Burwood train station to Wynne Ave

Second Journey - Station to Wynne Plaza via Railway Parade

1. Starting from the same point as the fist journey, this walk is along Railway Parade where you can see the activity of Wynne Plaza.

2. Approaching close to Wynne Plaza the buildings angle to allow a better view of Wynne Plaza and invite you to the site and civic space.

3. At Wynne Plaza you can see upper levels of activity, you can see down to the retail below and you can have a sense of connection across both sides of the plaza.

4. Walking into the plaza your eye catches the east-west “lane” through the site and you can follow the activity.

5. At the end of the entertainment “lane” you can see the Council Library at a low angle view of the sky which helps orient you.

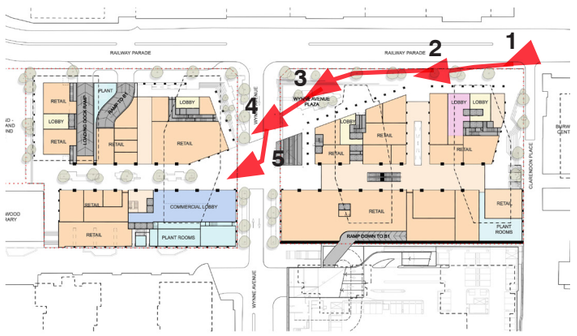


Figure 75. Indicative journey from Wynne plaza to Railway Parade

Third Journey - library to station via laneways

1. Starting outside the Council Library you see the podium development with towers above. The pedestrian way at lower levels of the first tower have community/ civic uses. You can see through eastwards to Wynne Plaza.

2. The proposal provides a good interface with the Council land with interesting activity at lower levels.

3. Walking eastwards along the east - west “lane” your eye experiences a variety of activity:

   – angled through to Railway Parade and Wynne Plaza,

   – straight ahead to the east - west lane aligned with Murray Arcade; and

   – in the foreground, the activities of Wynne Plaza.

4. Walking from the Council building eastwards along the East/West link to Wynne Plaza.

5. Looking East to Wynne Plaza.

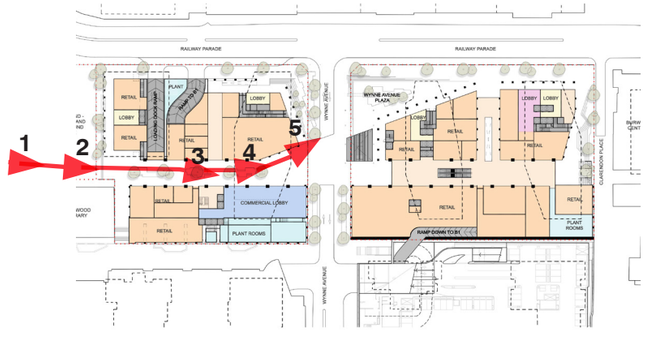


Figure 76. Indicative journey from Burwood library to station via laneway

Fourth Journey - library to station via ‘Avenue of Nations’ (Railway Parade)

1. Starting from the west of Railway Parade opposite the library you appreciate the interface/ activity with the Council land and the walk along Railway Pde.

2. As you walk along Railway Pde, Wynne Plaza opens out to view.

3. View southbound for Railway Parade through Wynne Plaza.

4. Wynne Plaza the angle of the built form leads you towards the rail station.

5. Glancing right you can see one of the north - south “laneway” routes, full of activity. The ground level is to be open to view as much as possible through all retail level tenancies.

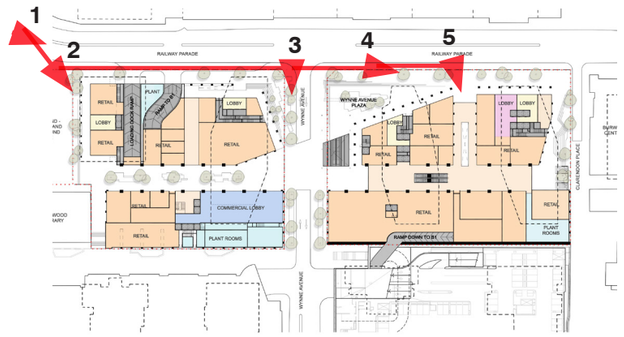


Figure 77. Indicative journey from library to station via railway Parade

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6.0 Assessment

6.1 Solar access to the public domain and adjoining areas

Summary:

Winter Solstice

– Although the towers cast long shadows at 9am and 3pm, no part of any one area is overshadowed by more than a short period of time.

Spring & Autumn Equinox

– Shadowing is very much less of an issue

Summer Solstice

– Shadowing is no issue.

Summary of Shadow Impacts	Western Residential Area	Western Transitional Area	Southern Middle Ring Area	Southern Transitional Area	Southern Residential Area	Eastern Transitional Area	Eastern Residential Area
Winter Solstice 9am	No impact	Approx. 5 houses and 4 residential apartments affected	See detailed study for further impacts	Approx. 5 houses and 9 residential apartment blocks affected	Approx. 15 houses affected	No impact	No impact
12pm	No impact	No impact	See detailed study for further impacts	Approx. 4 residential apartment block and 2 houses affected	No impact	No impact	No impact
3pm	No impact	No impact	Approx. 15 lots fronting Burwood Road affected	Approx. 2 residential apartment block and 2 houses affected	No impact	Approx. 15 lots fronting Burwood Road and 13 residential apartment blocks	No impact
Spring Equinox 9am	No impact	No impact	See detailed study for further impacts	No impact	No impact	No impact	No impact
12pm	No impact	No impact	See detailed study for further impacts	No impact	No impact	No impact	No impact
3pm	No impact	No impact	Approx. 5 lots fronting Burwood Road affected	No impact	No impact	No impact	No impact
Summer Solstice 9am	No impact	No impact	No impact	No impact	No impact	No impact	No impact
12pm	No impact	No impact	No impact	No impact	No impact	No impact	No impact
3pm	No impact	No impact	No impact	No impact	No impact	No impact	No impact

Winter Solstice shadows

9am **12pm** **3pm**

Figure 78. Winter solstice shadows

While the tower shadows are long at 9am and 3pm at the end of the daily time frame in midwinter, it can be seen that no part of any one area is overshadowed by more than a short period of time. This is anecdotally known as a “fast moving shadow” which is an advantage of tall, slim buildings compared to lower slab buildings. All single house properties to the south retain 3 hours or more of sunlight per day in midwinter between 9am and 3pm - consistent with residential development standards.

Conclusion

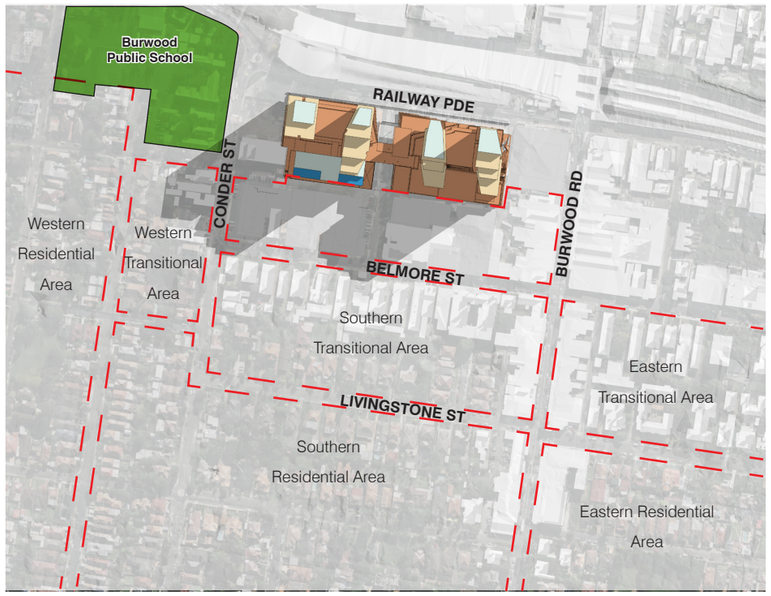
The solar analysis demonstrates the following:

– All single houses south of the proposed development receive 3 hours or more sunlight between 9am-3pm during the winter solstice.

– There is no solar impact of the proposed development to Burwood Public School located to its west.

Spring and Autumn Equinox shadows

9am



12pm

3pm

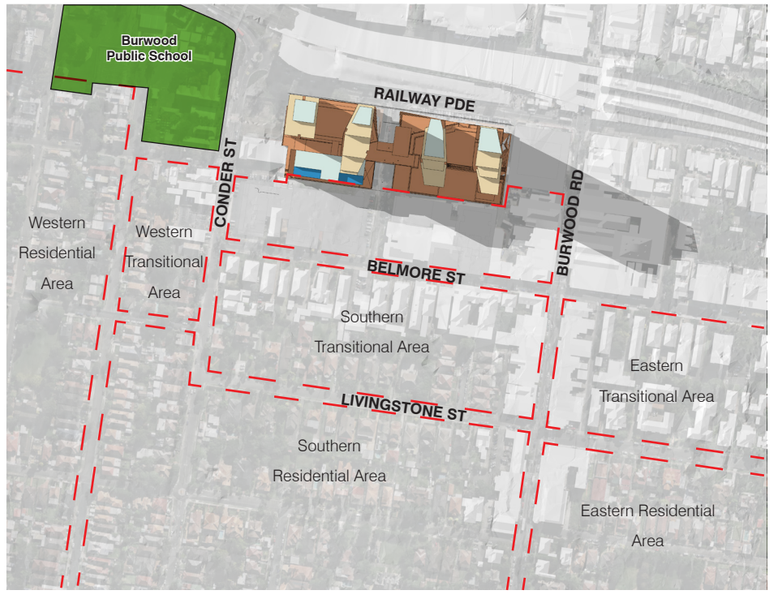


Figure 79. Spring and Autumn equinox shadows

Summer Solstice shadows

9am

12pm

3pm

Figure 80. Summer solstice shadows

6.2 Solar access to Wynne Avenue

Winter Solstice day

Key Findings:

– During the winter solstice, approximately 50% of Wynne Avenue receives a minimum 2 hours of direct sunlight.

– The proposal's tower orientation, separation and slender tower proportions mean that sunlight access is appropriately addressed.

11am winter solstice

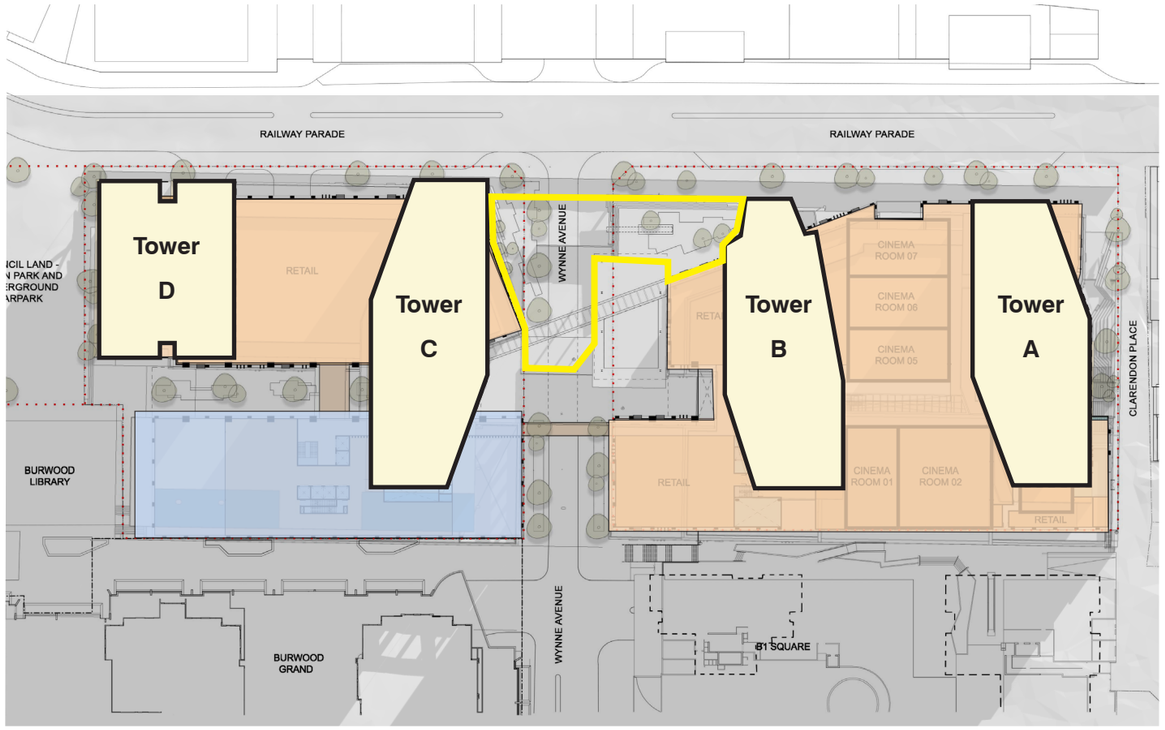


Figure 81. Wynne Plaza & Wynne Ave winter solstice 11am shadow

12 noon winter solstice

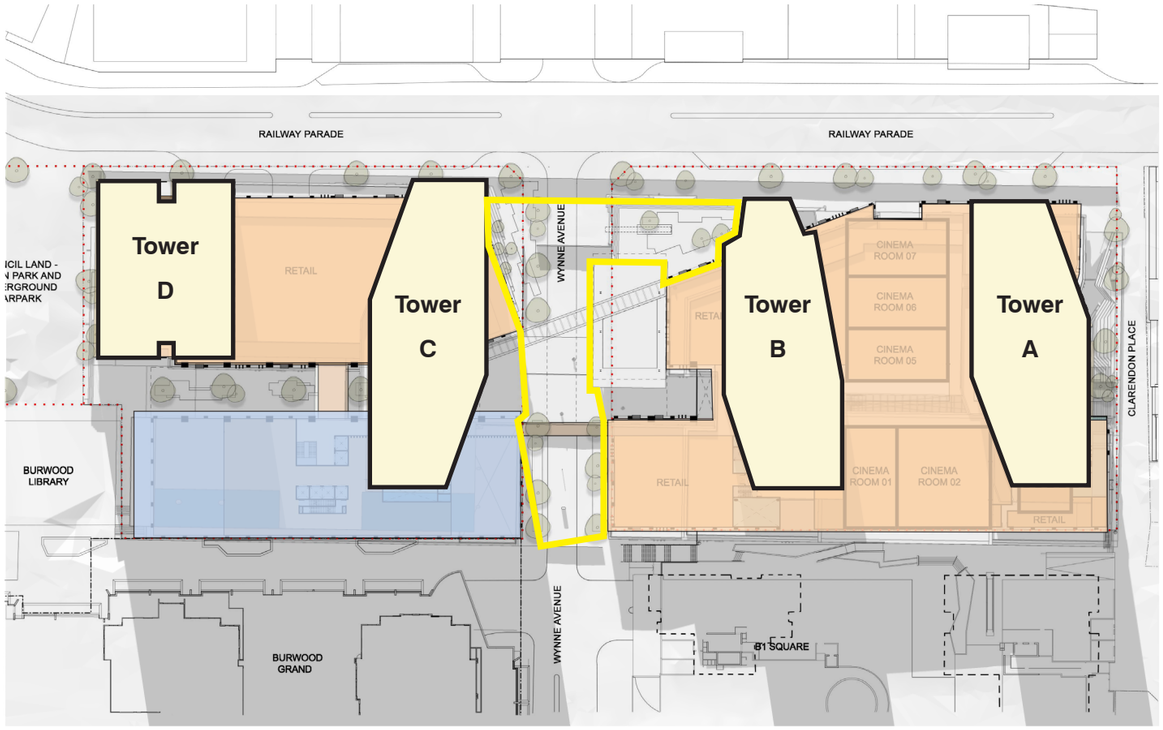


Figure 82. Wynne Plaza & Wynne Ave winter solstice 12 noon shadows

1pm winter solstice

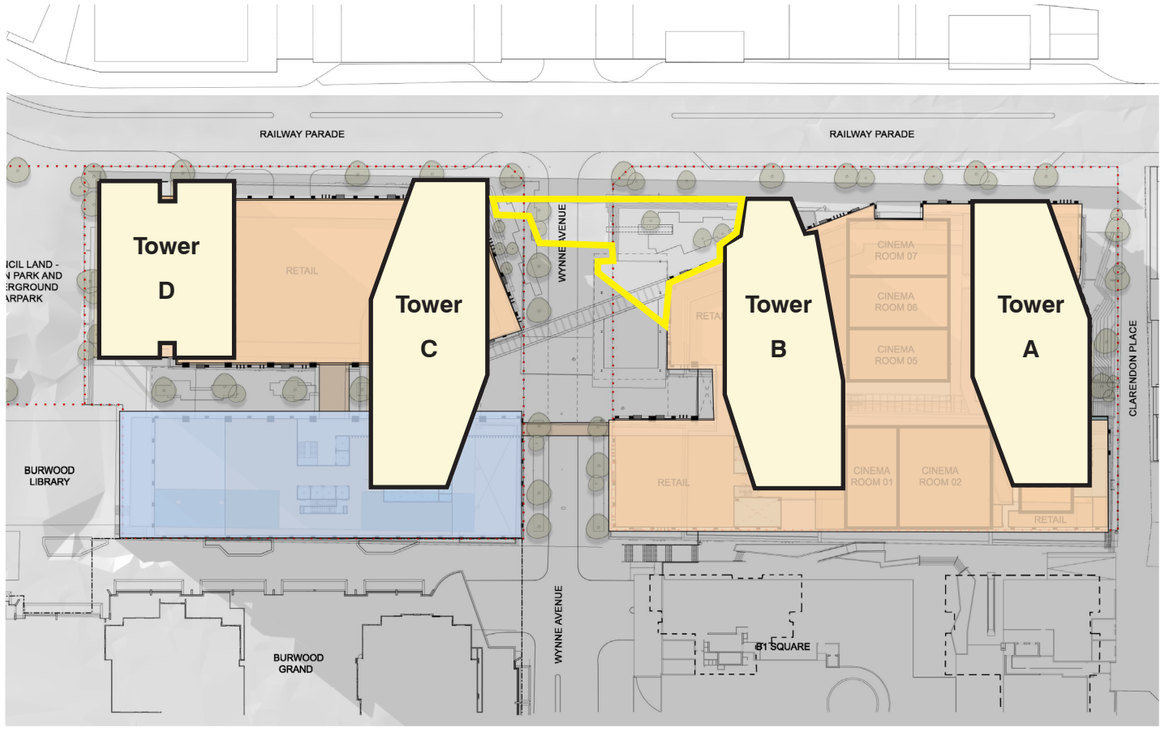


Figure 83. Wynne Plaza & Wynne Ave winter solstice 1pm shadows

Solar access to plaza

Spring & Autumn Equinox day

Key Findings:

– During the spring and autumn equinox, Wynne Avenue plaza receives a minimum 2 hours of direct sunlight.

– The proposal's tower orientation, separation and slender tower proportions mean that sunlight access is appropriately addressed with optimal sunlight during lunchtime.

11am Spring & Autumn Equinox

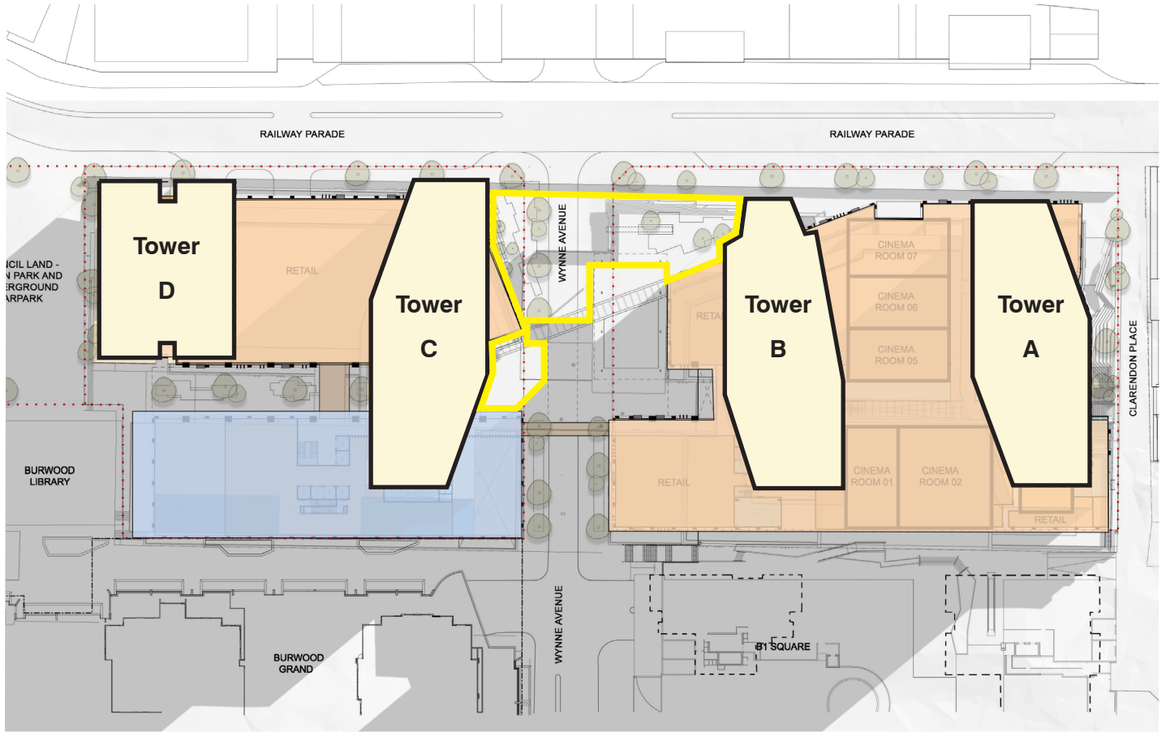


Figure 84. Wynne Plaza spring and autumn equinoxe 11am shadow

Solar access to plaza

12 noon Spring & Autumn Equinox day

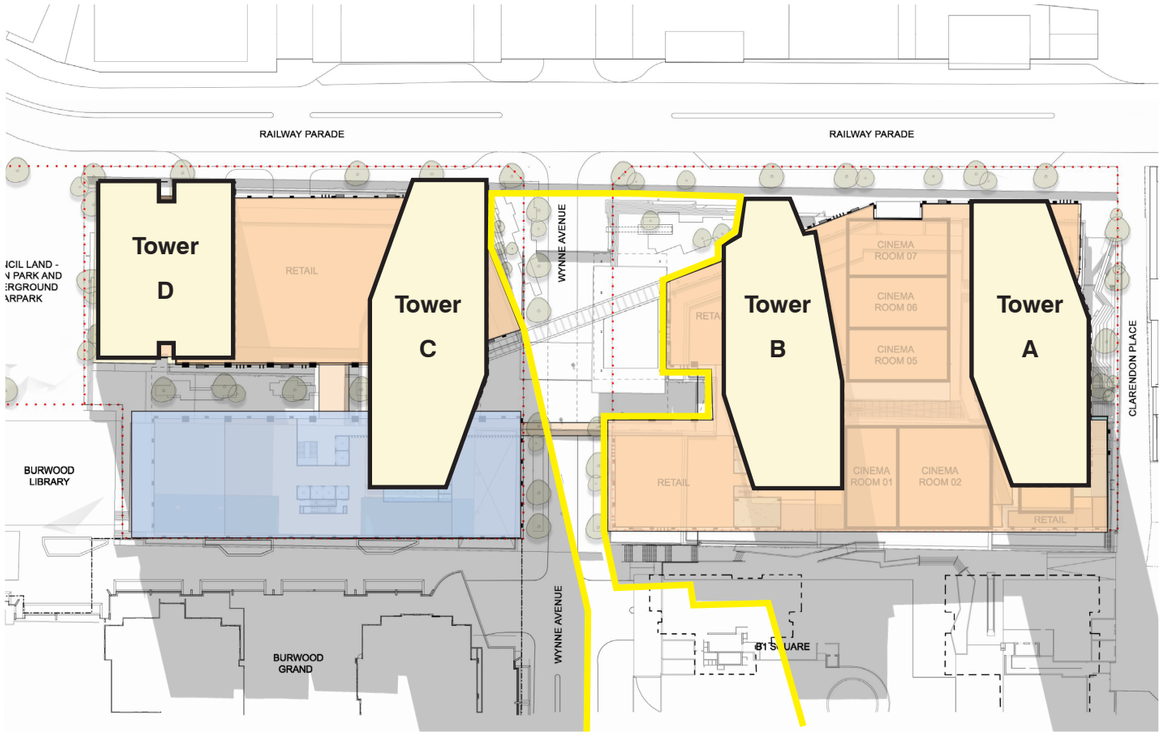


Figure 85. Wynne Plaza spring and autumn equinox 12 noon shadows

1pm Spring & Autumn Equinox

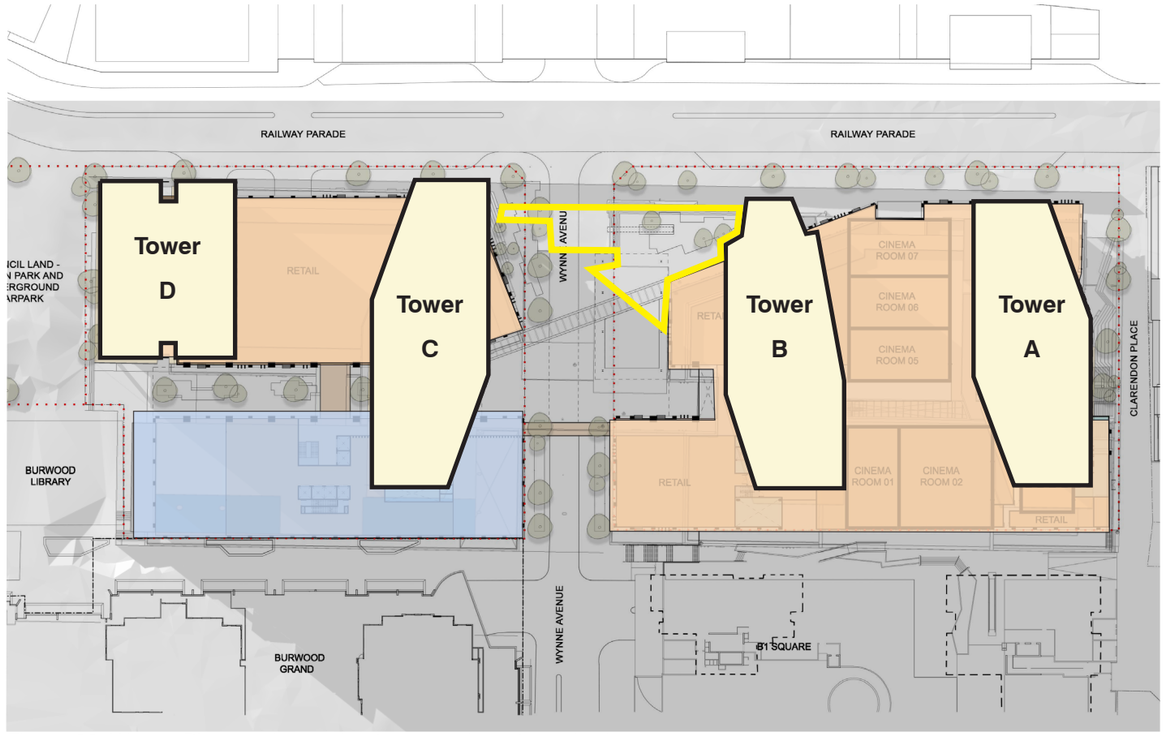


Figure 86. Wynne Plaza spring and autumn equinox 1pm shadows

Solar access to plaza

6.3 Solar ‘views from the sun’ assessment

1. Background/assumptions

The Planning Proposal for Burwood Place was compared to a complying scheme that achieves the current height and FSR controls (the complying scheme was based on the AJC Architects scheme that accompanied the sales document for Burwood Plaza except with underground parking) – Architectus considers that the complying scheme is an example of what might be developed under the current planning controls and that it is a reasonable basis for comparing solar access impacts. The same basis is now used to compare the proposed Amendment to the PP.

– The Burwood Central development (at the corner of Burwood Rd and Railway Parade) has since had an approved DA and is shown in the solar analysis.

– The solar analysis for the amended PP now includes room layouts of Emerald Square development and Burwood Grand development (which were not available at the time of the PP).

– Burwood Grand development has changed information with additional levels of development which is now included in the analysis.

– Solar access impacts analysis is done on a development basis - consistent with the ADG – not on a building by building basis.

– Burwood Place development proposes 1,100 apartments, Emerald Square development has 210 apartments and Burwood Grand development has 499 apartments.

2. Results from the solar impact analysis

On a precinct basis the amended Burwood Place, Emerald Square and Burwood Grand have a combined solar access of 71% of the total 1,772 apartments that receive 2 hours or more of sunlight between 9am and 3pm midwinter.

A complying development at Burwood Place (under the current planning controls) results in:

a) Emerald Square - 46% without Burwood Central (42% with Burwood Central)

b) Burwood Grand - 53%

For comparison, the 2016 Planning Proposal is:

a) Emerald Square - 39% without Burwood Central

b.Burwood Grand - 59%

Amended Proposal is as follows:

a) Burwood Place - 81.7%

b) Emerald Square - 52%

c) Burwood Grand - 53%

The amended Planning proposal achieves solar access of 53% to Emerald Square and Burwood Grand combined. The tested complying scheme only achieved 48%, the original Planning Proposal (May 2016) achieved 69.9%, note the 2016 planning proposal did not include DA approved Burwood Central in the testing nor did it use assess detailed plans of Burwood Grand and Emerald Square as they were not available at the time of testing. The methodology used in the May 2016 Planning Proposal based solar access outcomes on facade heat maps, the methodology improvised in this Planning Proposal uses 1 minute by 1 minute intervals with views of the sun referencing detailed floor plans of Emerald Square and Burwood Grand. Testing for the amended Planning Proposal during the winter solstice (including the additional height of Burwood Grand) confirmed an overall solar access of 53%. Architectus tested a base scenario with no development on the subject site and included the DA approved Burwood Central proposal and found Emerald Square achieved 66% and Burwood Grand 74% solar access. The ADG allows a 20% reduction in solar access from new developments to existing/approved development. The amended Planning Proposal achieves a better solar outcome to the complying scheme and is an improvement to the original May 2016 Planning Proposal.

3. Comments

– The additional 9,000sqm GFA has little effect on solar access impact.

– Information to be taken into account since the PP has changed – see background/assumptions above.

– On a Precinct basis the area performs very well for solar access given the urban density near a rail station.

– On a development basis, there is variability between developments - as would be expected in a built-up area.

– It is noted that compared to a complying development for Burwood Place, solar impacts on the developments to the south are similar despite the increase in density and height. This is because of the careful separation of the proposed towers and their slenderness.

– The taller well separated towers of the Proposal and amended Proposal provide far better outlook and views from more apartments in Emerald square and Burwood Grand compared to a complying development to the south.

– On balance, the Amended Planning Proposal, being better than a complying development and in consideration of the overall precinct solar access of all major developments combined, is recommended.

Solar ‘views from the sun’ at 9am - amended planning proposal

Winter Solstice shadows

Complying concept

Amended planning proposal

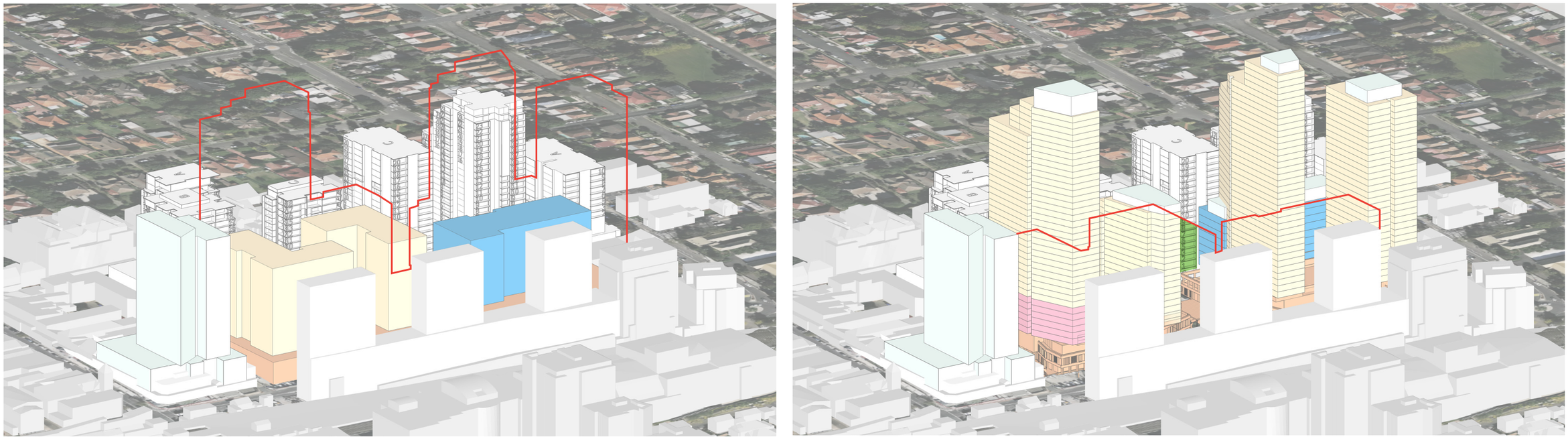


Figure 87. Solar views from the sun 9am

Notes: The coloured envelopes represent the complying concept building form, and the red outline indicates the amended planning proposal building form.

Key

- Existing buildings / approved DA / under construction
- Residential
- Commercial
- Retail
- Hotel
- Plant/ lift overrun

Plan showing additional shadow impacts to single dwelling houses & heritage items

Notes: The coloured envelopes represent the amended planning proposal building form, and the red outline indicates the complying concept building form.

- Amended planning proposal
- Heritage items
- Burwood Public School

Solar ‘views from the sun’ at 9am - amended planning proposal

Winter Solstice shadows

Gateway approved

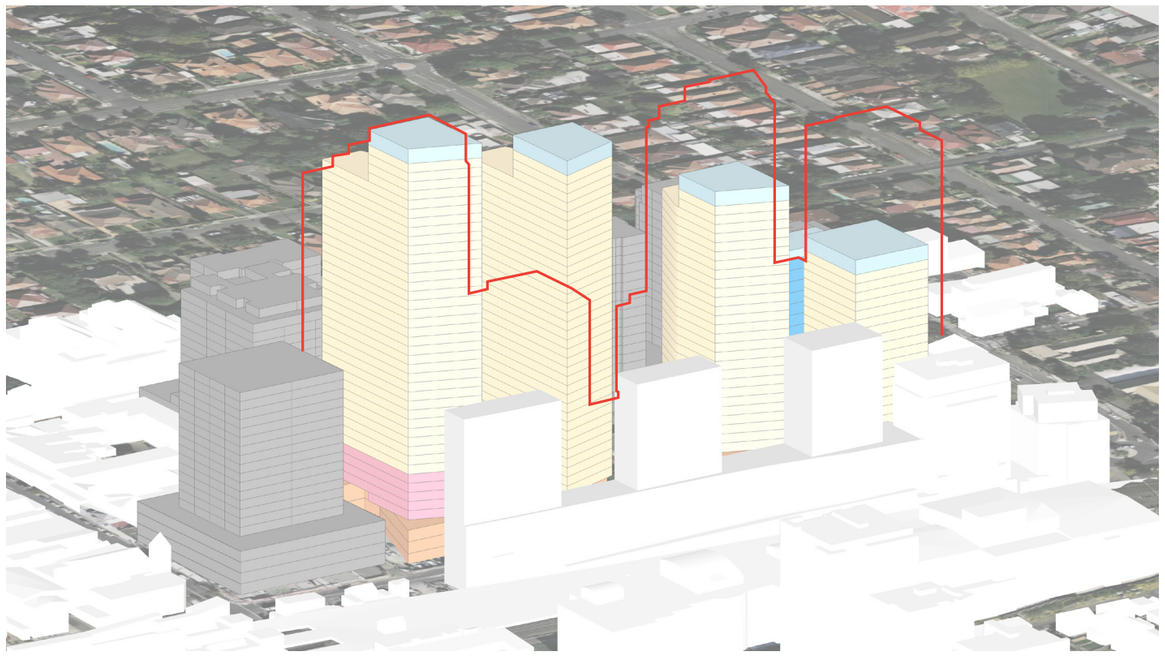
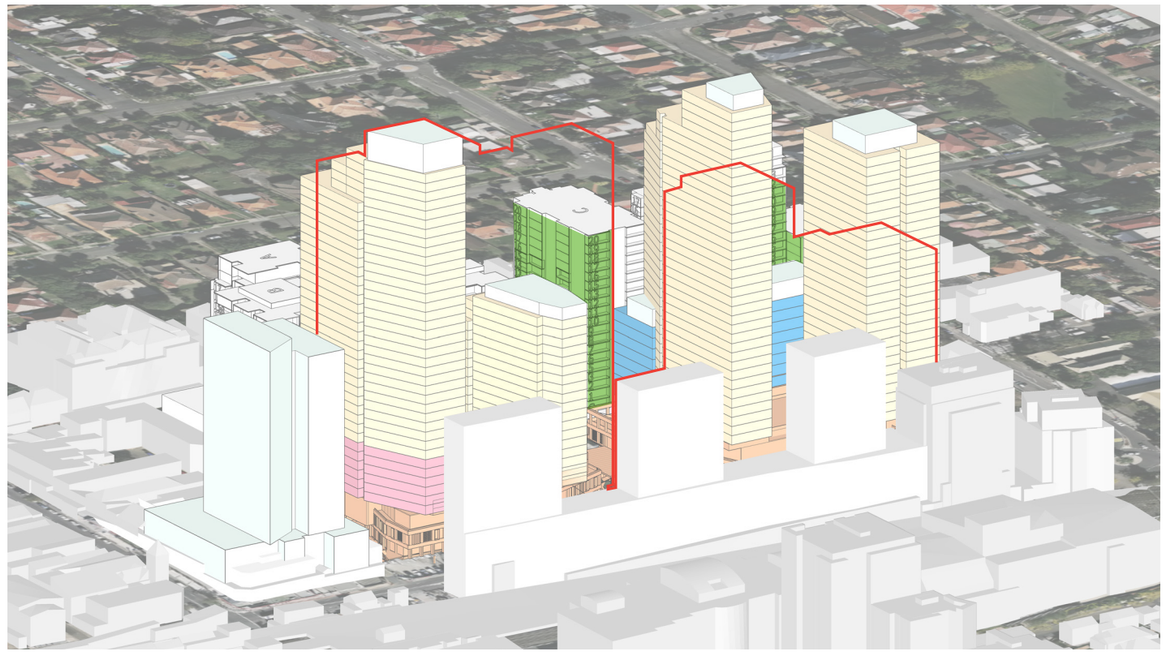


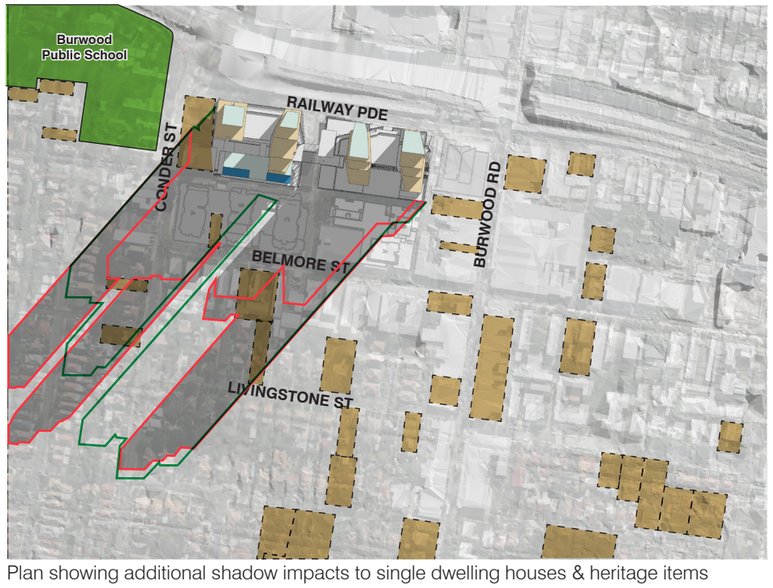
Figure 87. Solar views from the sun 9am

Notes: The coloured envelopes represent the gateway approved building form, and the red outline indicates the amended planning proposal building form.

Amended planning proposal



Notes: The coloured envelopes represent the amended planning proposal building form, and the red outline indicates the gateway approved building form.



Plan showing additional shadow impacts to single dwelling houses & heritage items

Key

- Existing buildings / approved DA / under construction
- Residential
- Commercial
- Retail
- Hotel
- Plant/ lift overrun

- Amended planning proposal
- Gateway approved
- Heritage items
- Burwood Public School

Solar ‘views from the sun’ at 10am - amended planning proposal

Winter Solstice shadows

Gateway approved

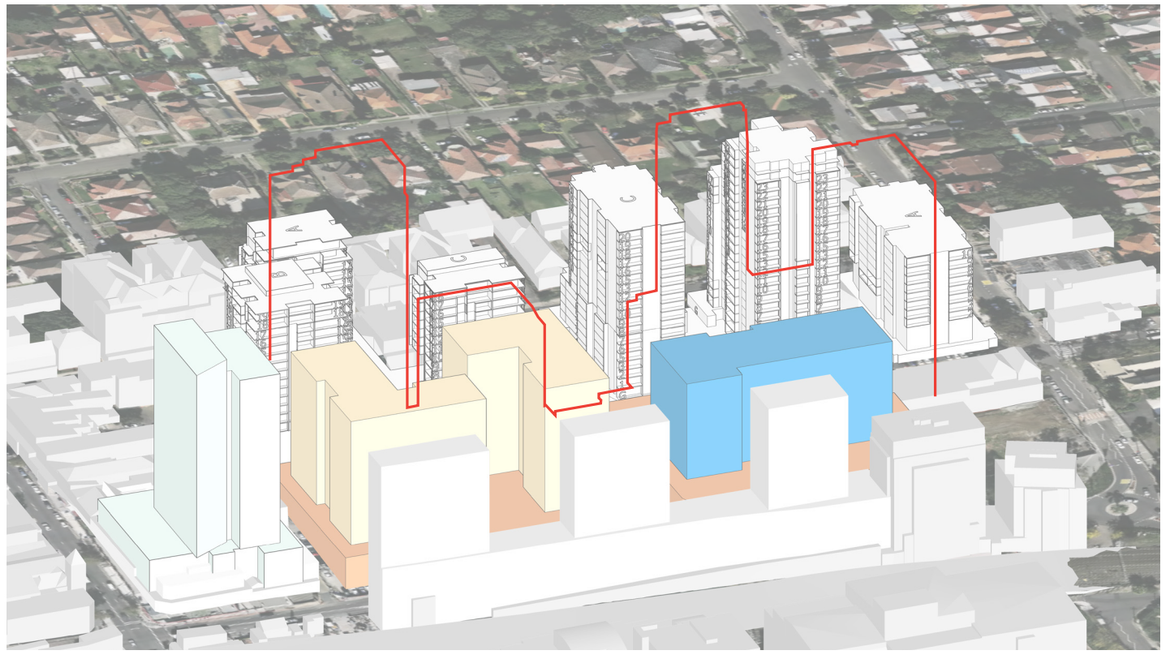
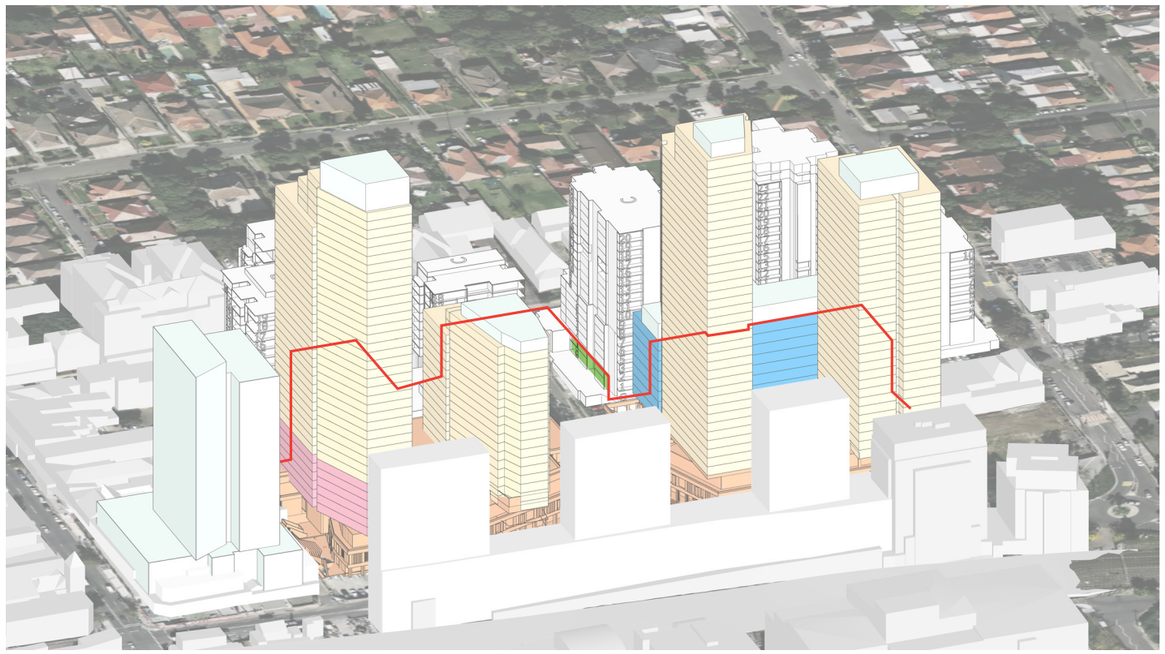


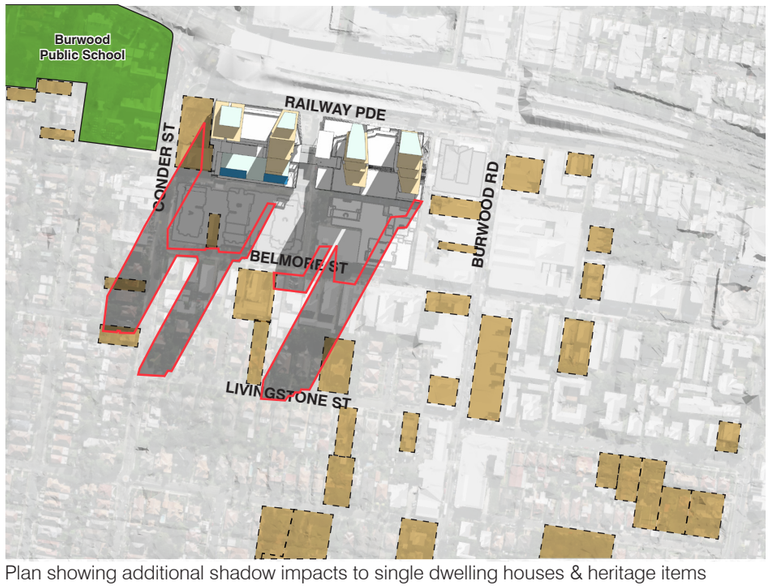
Figure 88. Solar views from the sun 10am

Notes: The coloured envelopes represent the complying concept building form, and the red outline indicates the amended planning proposal building form.

Amended planning proposal



Notes: The coloured envelopes represent the amended planning proposal building form, and the red outline indicates the complying concept building form.



Plan showing additional shadow impacts to single dwelling houses & heritage items

Key

- Existing buildings / approved DA / under construction
- Residential
- Commercial
- Retail
- Hotel
- Plant/ lift overrun

- Amended planning proposal
- Heritage items
- Burwood Public School

Solar ‘views from the sun’ at 10am - amended planning proposal

Winter Solstice shadows

Gateway approved

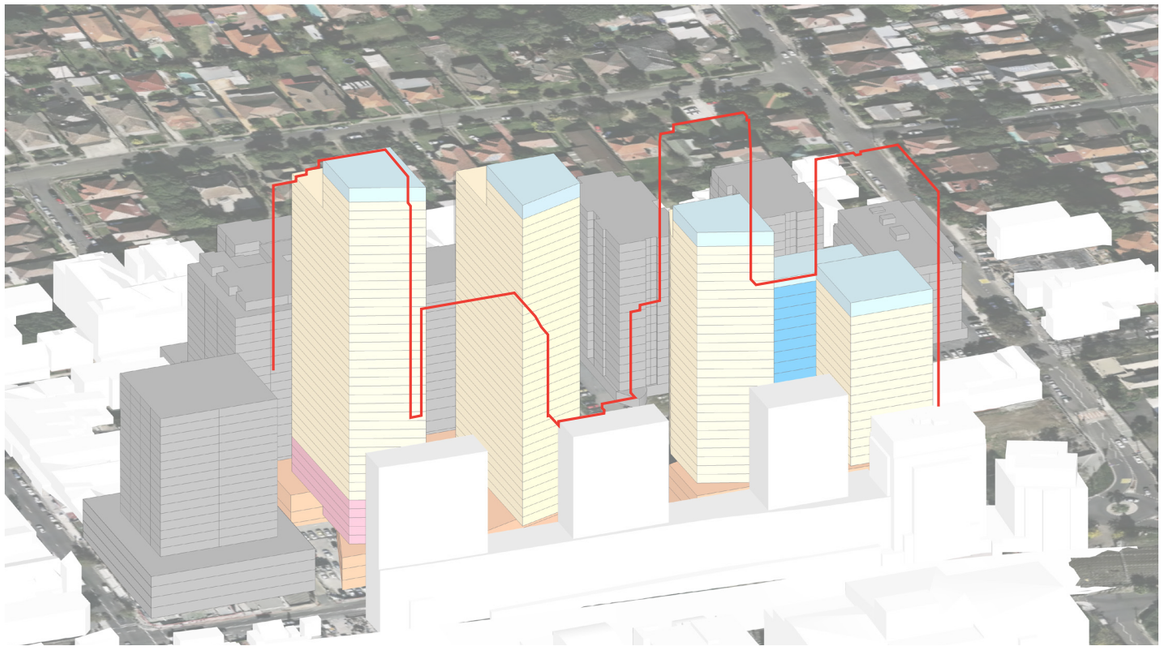
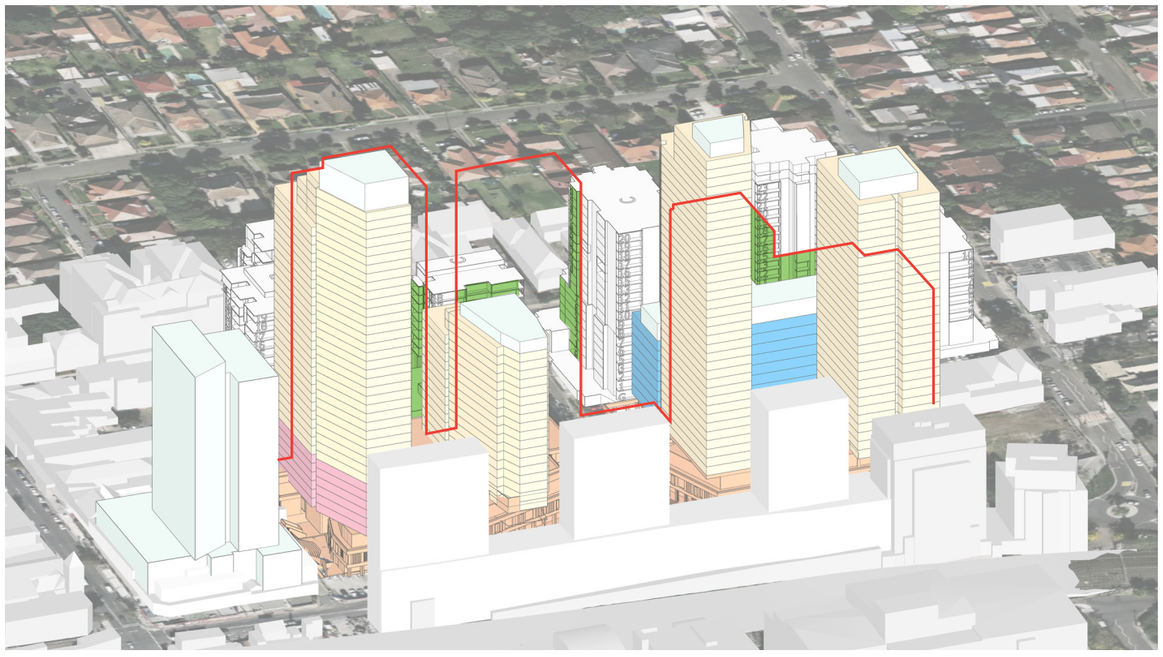


Figure 88. Solar views from the sun 10am

Notes: The coloured envelopes represent the gateway approved building form, and the red outline indicates the amended planning proposal building form.

Amended planning proposal



Notes: The coloured envelopes represent the amended planning proposal building form, and the red outline indicates the gateway approved building form.

Plan showing additional shadow impacts to single dwelling houses & heritage items

Key

- Existing buildings / approved DA / under construction
- Residential
- Commercial
- Retail
- Hotel
- Plant/ lift overrun

- Amended planning proposal
- Gateway approved
- Heritage items
- Burwood Public School

Solar ‘views from the sun’ at 11am - amended planning proposal

Winter Solstice shadows

Gateway approved

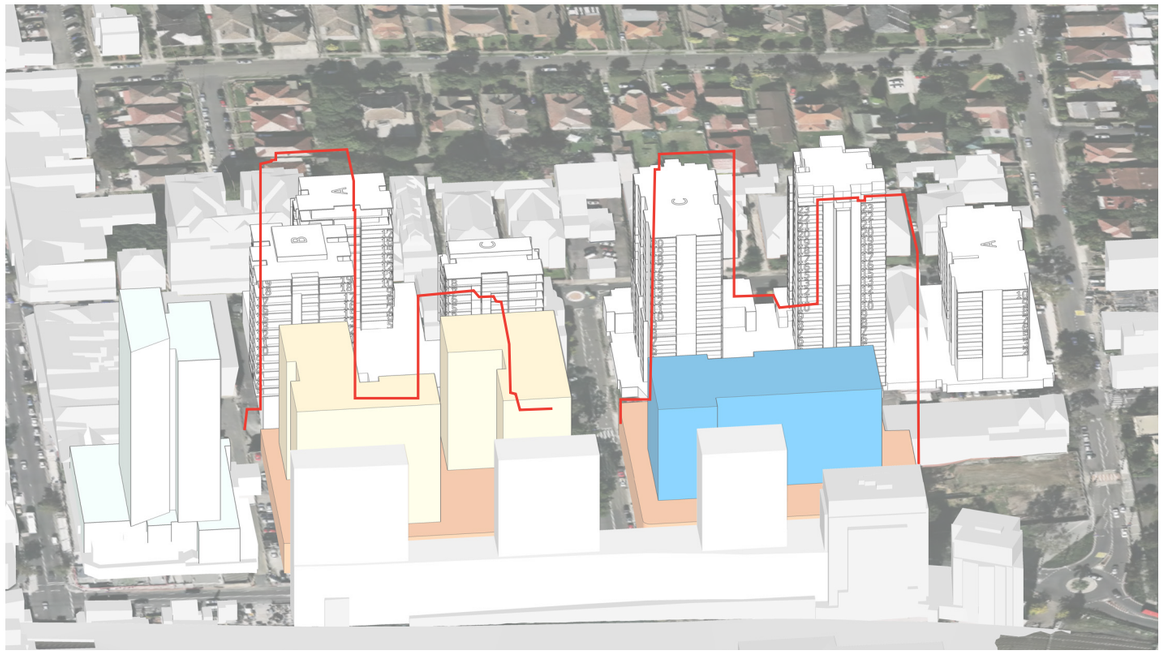
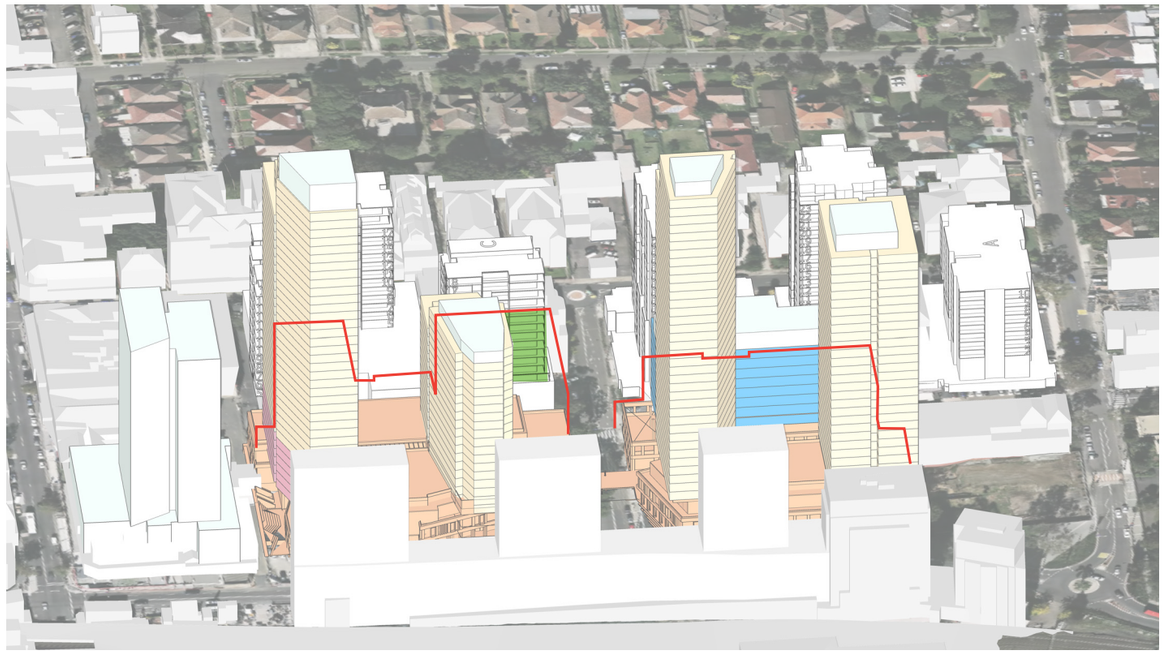


Figure 89. Solar views from the sun 11am

Notes: The coloured envelopes represent the complying concept building form, and the red outline indicates the amended planning proposal building form.

Amended planning proposal



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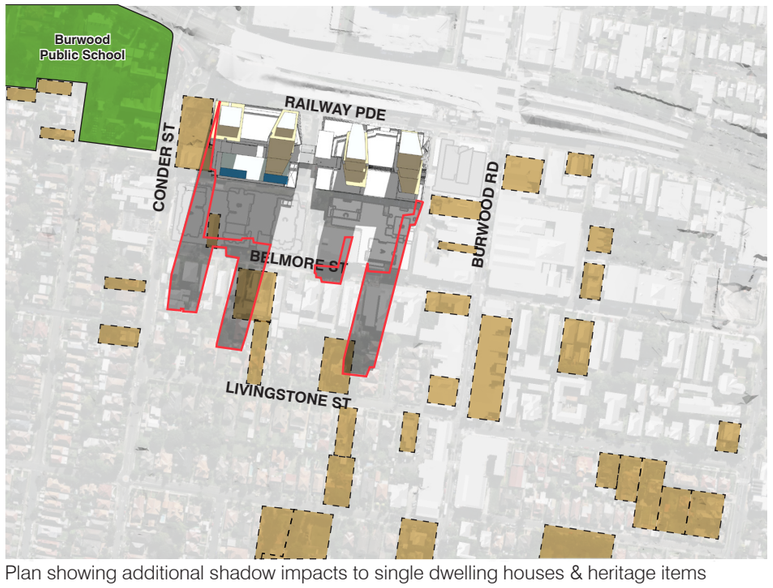
Key

- Existing buildings / approved DA / under construction
- Residential
- Commercial
- Retail
- Hotel
- Plant/ lift overrun



Plan showing additional shadow impacts to single dwelling houses & heritage items

- Amended planning proposal
- Heritage items
- Burwood Public School

Solar ‘views from the sun’ at 11am - amended planning proposal

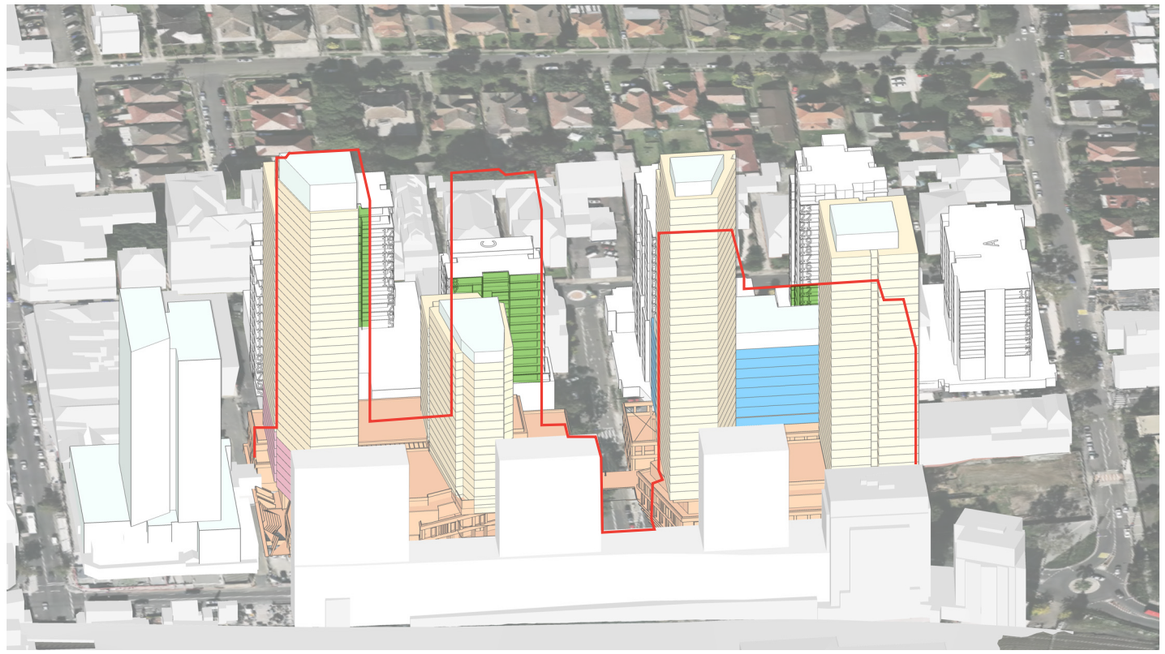
Winter Solstice shadows

Gateway approved

Figure 89. Solar views from the sun 11am

Notes: The coloured envelopes represent the gateway approved building form, and the red outline indicates the amended planning proposal building form.

Amended planning proposal



Notes: The coloured envelopes represent the amended planning proposal building form, and the red outline indicates the gateway approved building form.

Key

- Existing buildings / approved DA / under construction
- Residential
- Commercial
- Retail
- Hotel
- Plant/ lift overrun

Plan showing additional shadow impacts to single dwelling houses & heritage items

- Amended planning proposal
- Gateway approved
- Heritage items
- Burwood Public School

Solar ‘views from the sun’ at 12pm - amended planning proposal

Winter Solstice shadows

Gateway approved

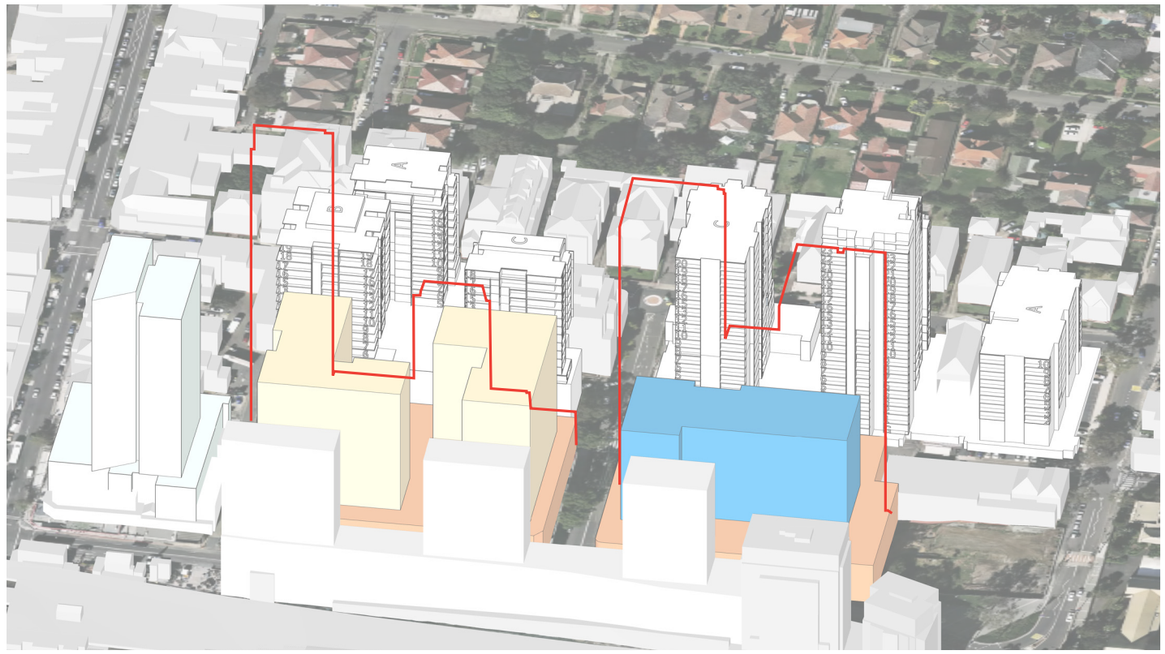
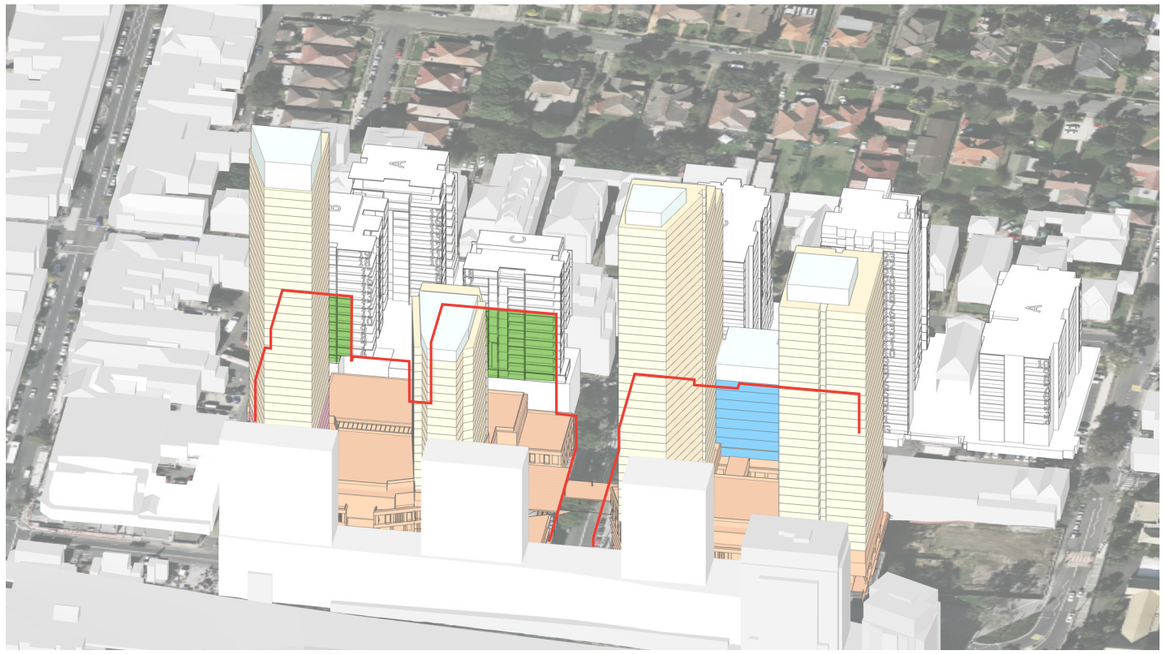


Figure 90. Solar views from the sun 12pm

Notes: The coloured envelopes represent the complying concept building form, and the red outline indicates the amended planning proposal building form.

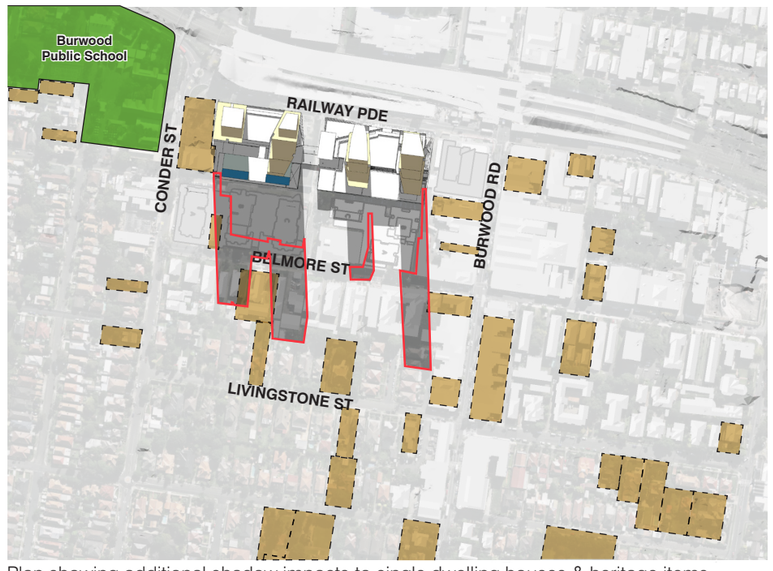
Amended planning proposal



Notes: The coloured envelopes represent the amended planning proposal building form, and the red outline indicates the complying concept building form.

Key

- Existing buildings / approved DA / under construction
- Residential
- Commercial
- Retail
- Hotel
- Plant/ lift overrun



Plan showing additional shadow impacts to single dwelling houses & heritage items

- Amended planning proposal
- Gateway approved
- Heritage items
- Burwood Public School

Solar ‘views from the sun’ at 12pm - amended planning proposal

Winter Solstice shadows

Gateway approved

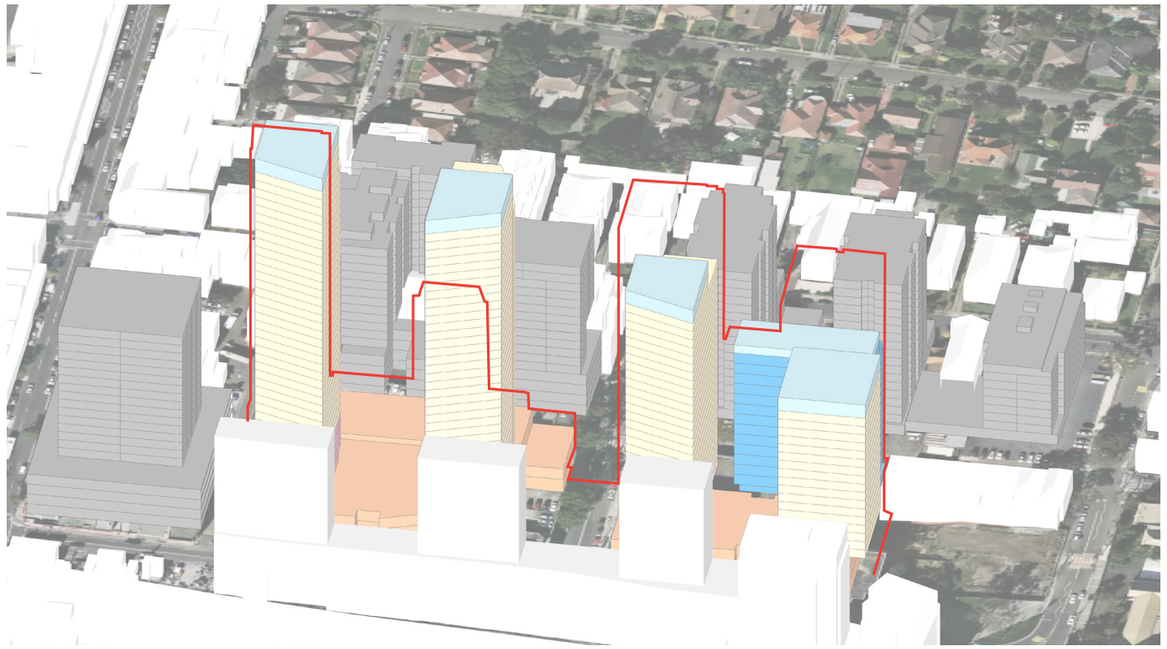
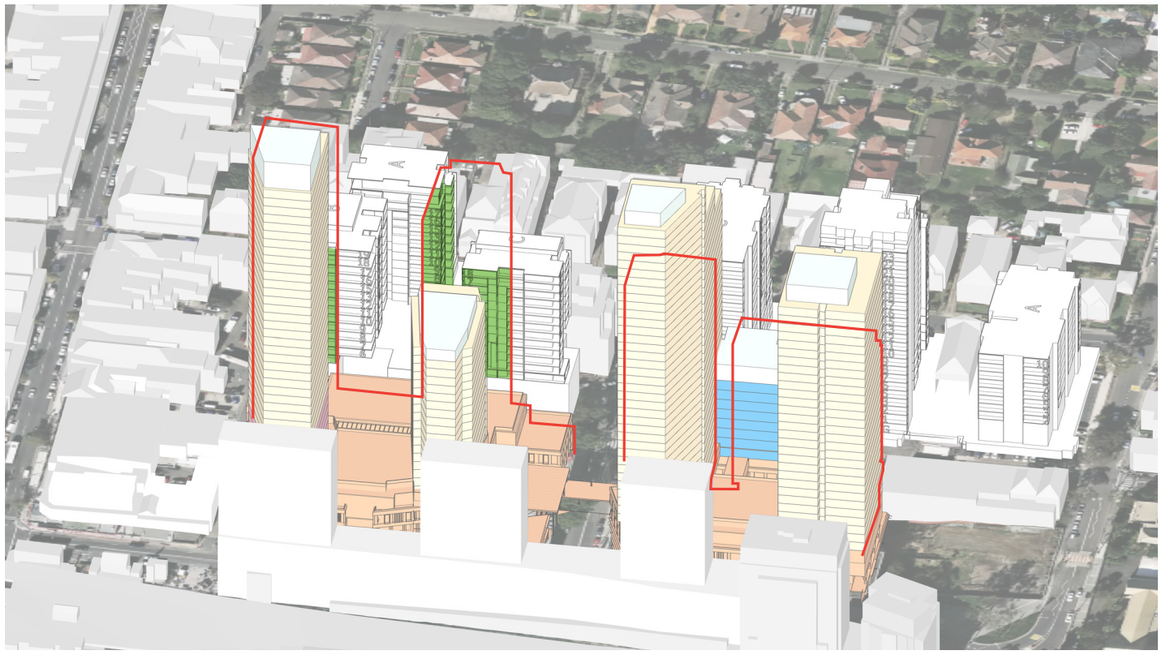


Figure 90. Solar views from the sun 12pm

Notes: The coloured envelopes represent the gateway approved building form, and the red outline indicates the amended planning proposal building form.

Amended planning proposal



Notes: The coloured envelopes represent the amended planning proposal building form, and the red outline indicates the gateway approved building form.

Plan showing additional shadow impacts to single dwelling houses & heritage items

Key

- Existing buildings / approved DA / under construction
- Residential
- Commercial
- Retail
- Hotel
- Plant/ lift overrun

- Amended planning proposal
- Gateway approved
- Heritage items
- Burwood Public School

Solar ‘views from the sun’ at 1pm - amended planning proposal

Winter Solstice shadows

Gateway approved

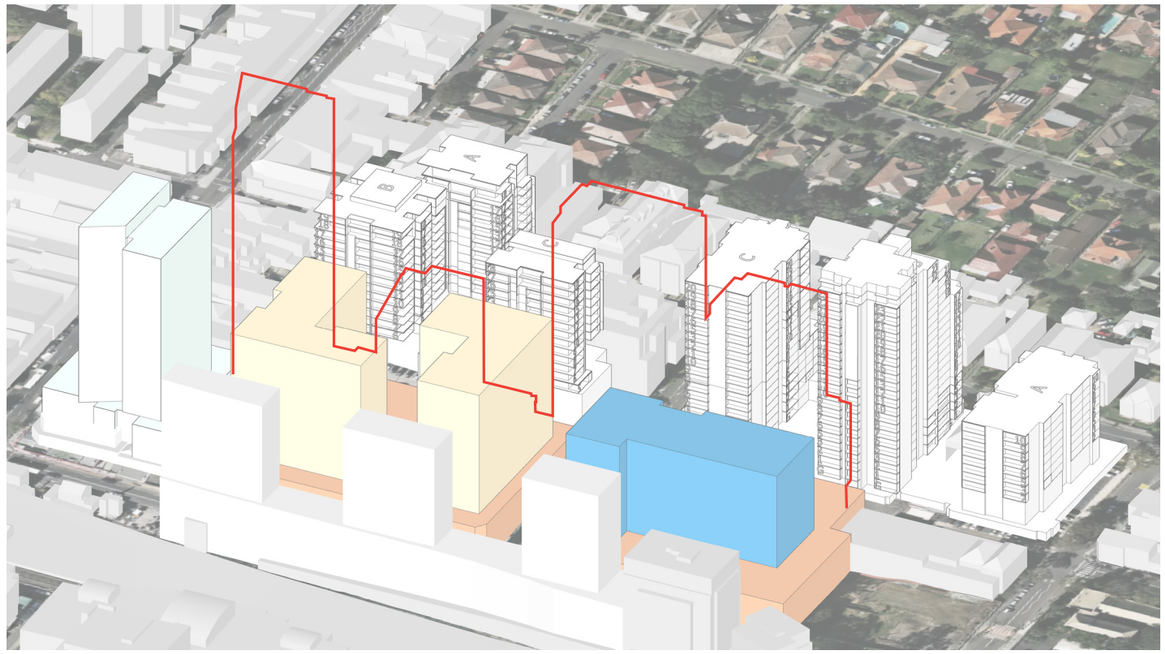
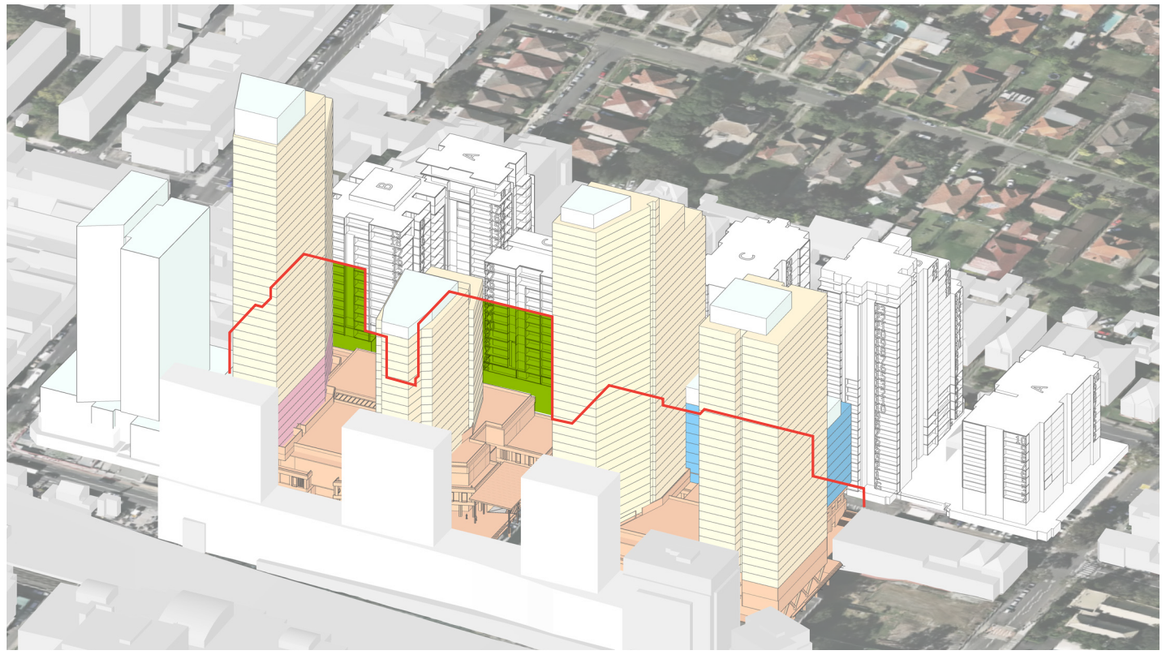


Figure 91. Solar views from the sun 1pm

Notes: The coloured envelopes represent the complying concept building form, and the red outline indicates the amended planning proposal building form.

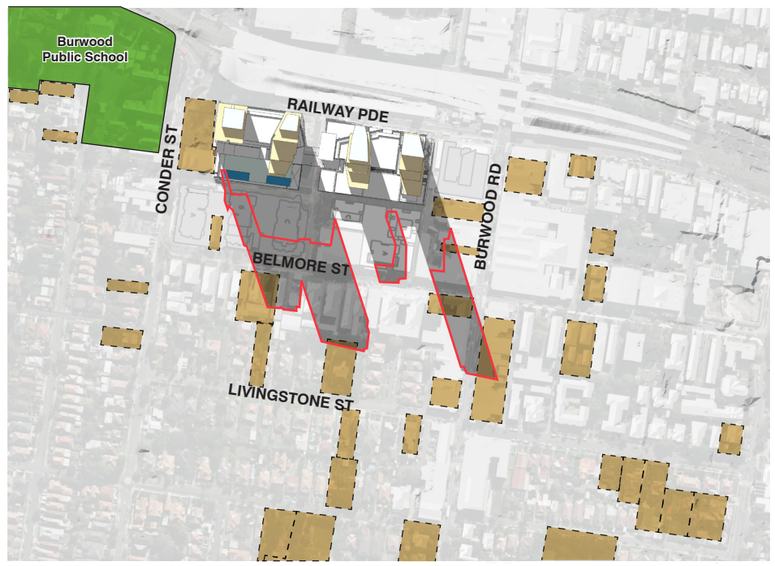
Amended planning proposal



Notes: The coloured envelopes represent the amended planning proposal building form, and the red outline indicates the complying concept building form.

Key

- Existing buildings / approved DA / under construction
- Residential
- Commercial
- Retail
- Hotel
- Plant/ lift overrun



Plan showing additional shadow impacts to single dwelling houses & heritage items

- Amended planning proposal
- Gateway approved
- Heritage items
- Burwood Public School

Solar ‘views from the sun’ at 1pm - amended planning proposal

Winter Solstice shadows

Gateway approved

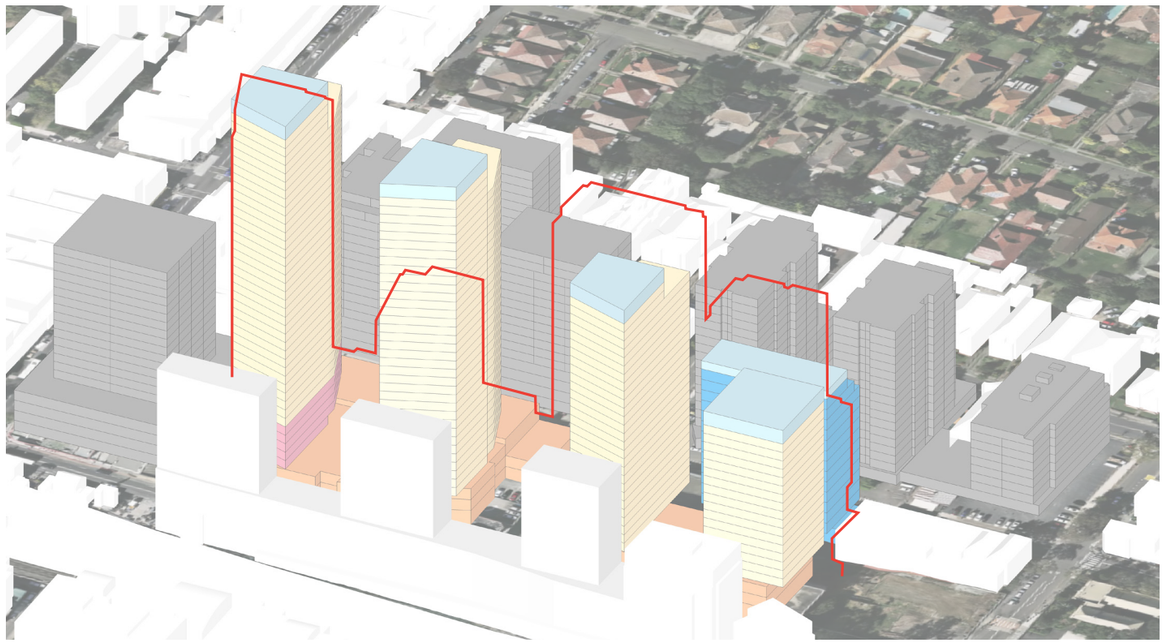
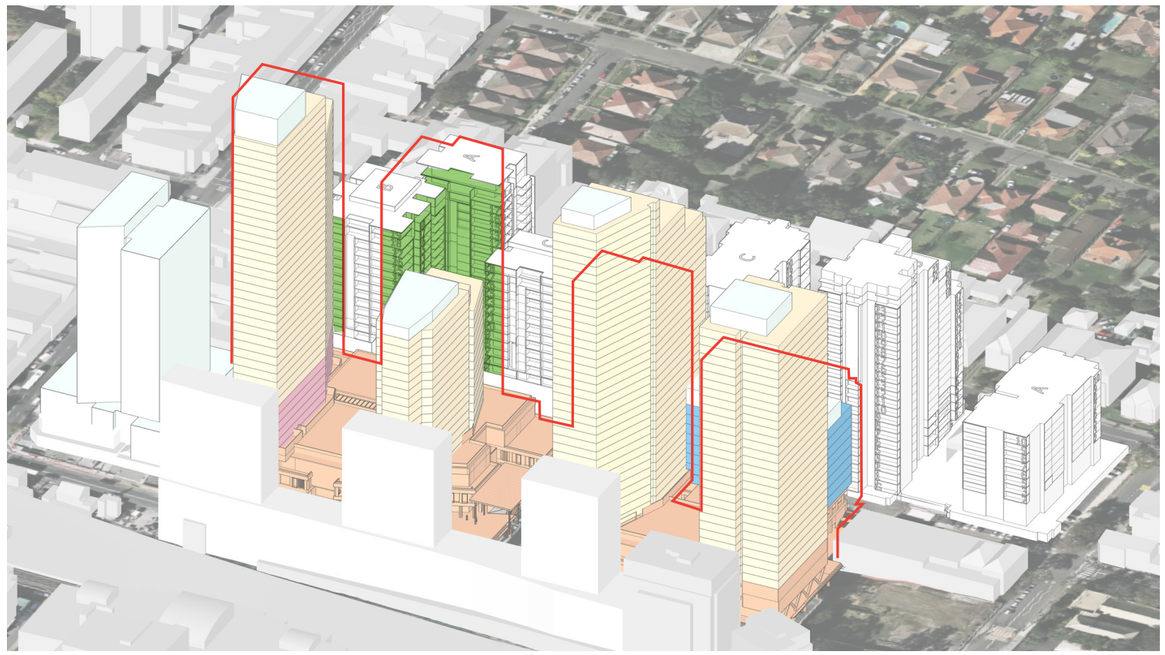


Figure 91. Solar views from the sun 1pm

Notes: The coloured envelopes represent the gateway approved building form, and the red outline indicates the amended planning proposal building form.

Amended planning proposal



Notes: The coloured envelopes represent the amended planning proposal building form, and the red outline indicates the gateway approved building form.

Plan showing additional shadow impacts to single dwelling houses & heritage items

Key

- Existing buildings / approved DA / under construction
- Residential
- Commercial
- Retail
- Hotel
- Plant/ lift overrun

- Amended planning proposal
- Gateway approved
- Heritage items
- Burwood Public School

Solar ‘views from the sun’ at 2pm - amended planning proposal

Winter Solstice shadows

Gateway approved

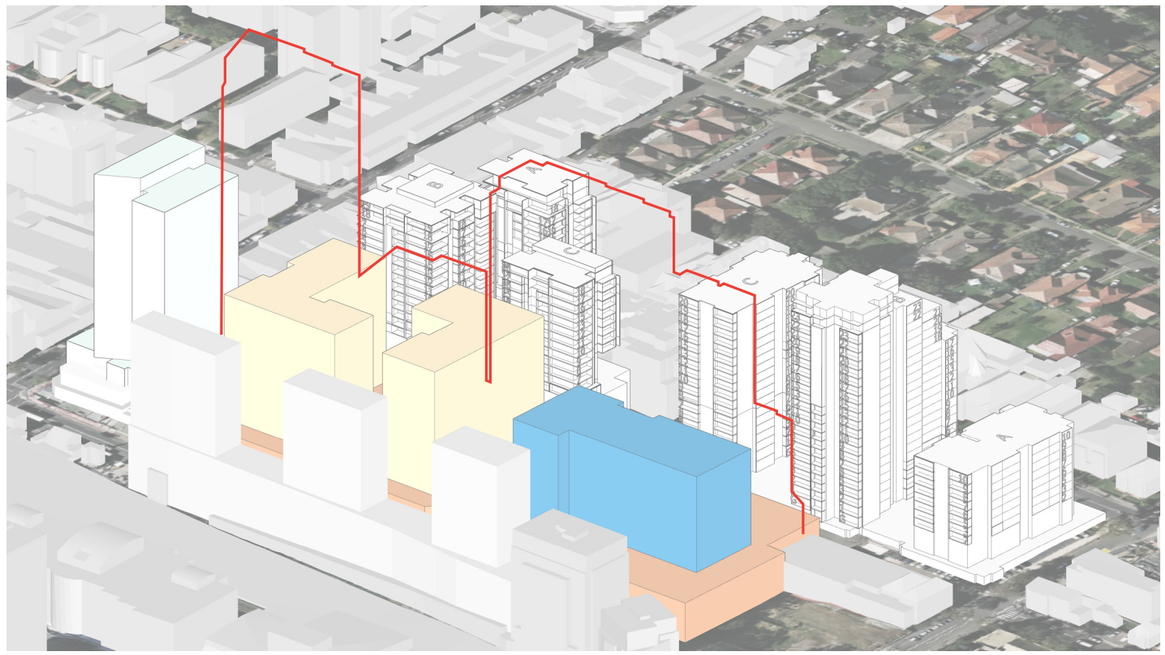
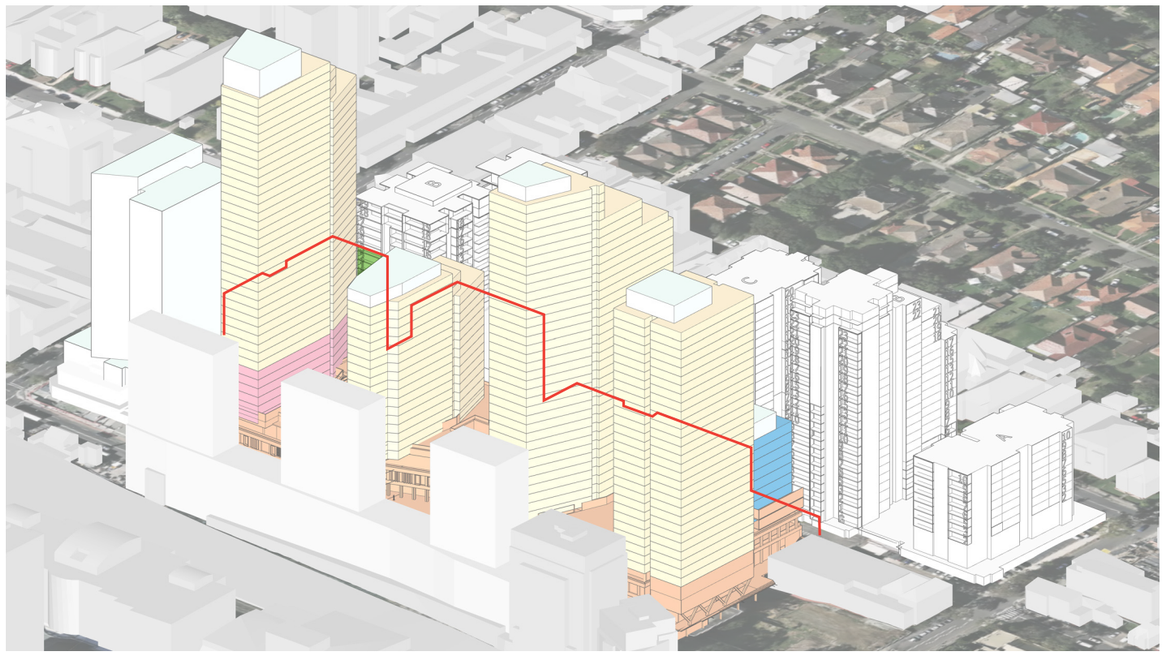


Figure 92. Solar views from the sun 2pm

Notes: The coloured envelopes represent the complying concept building form, and the red outline indicates the amended planning proposal building form.

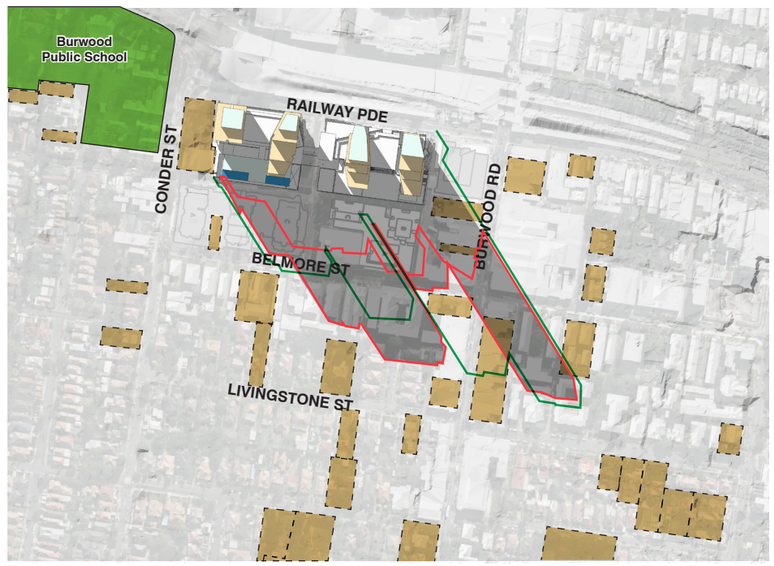
Amended planning proposal



Notes: The coloured envelopes represent the amended planning proposal building form, and the red outline indicates the complying concept building form.

Key

- Existing buildings / approved DA / under construction
- Residential
- Commercial
- Retail
- Hotel
- Plant/ lift overrun



Plan showing additional shadow impacts to single dwelling houses & heritage items

Solar ‘views from the sun’ at 2pm - amended planning proposal

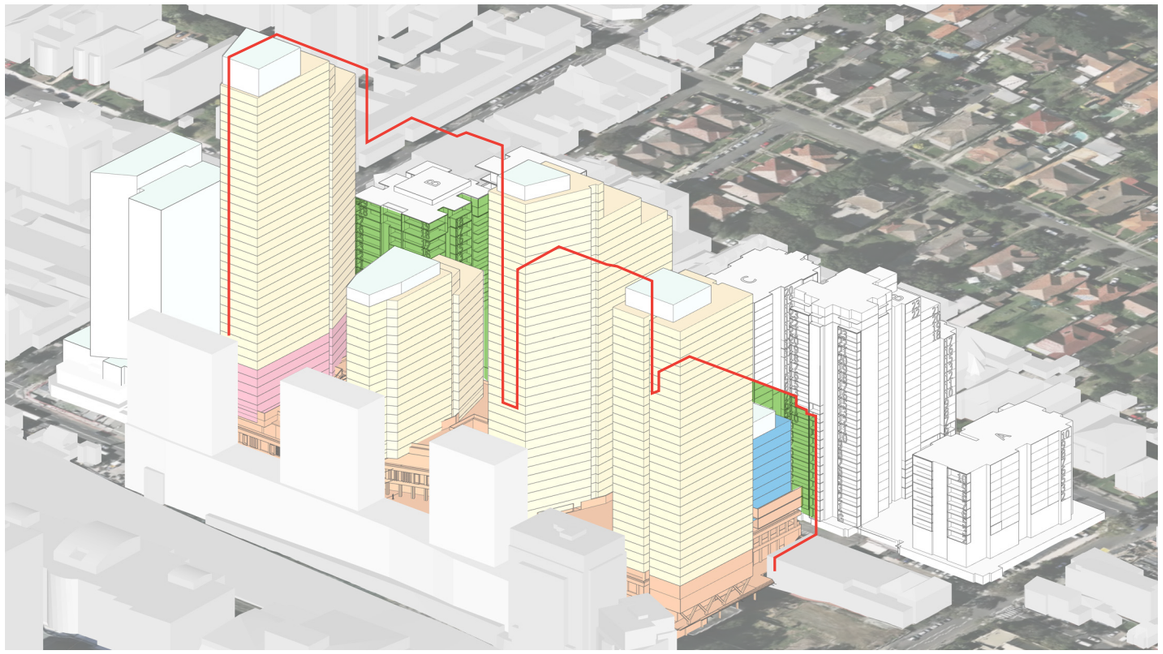
Winter Solstice shadows

Gateway approved

Figure 92. Solar views from the sun 2pm

Notes: The coloured envelopes represent the gateway approved building form, and the red outline indicates the amended planning proposal building form.

Amended planning proposal



Notes: The coloured envelopes represent the amended planning proposal building form, and the red outline indicates the gateway approved building form.

Plan showing additional shadow impacts to single dwelling houses & heritage items

Key

- Existing buildings / approved DA / under construction
- Residential
- Commercial
- Retail
- Hotel
- Plant/ lift overrun

- Amended planning proposal
- Gateway approved
- Heritage items
- Burwood Public School

Solar ‘views from the sun’ at 3pm - amended planning proposal

Winter Solstice shadows

Gateway approved

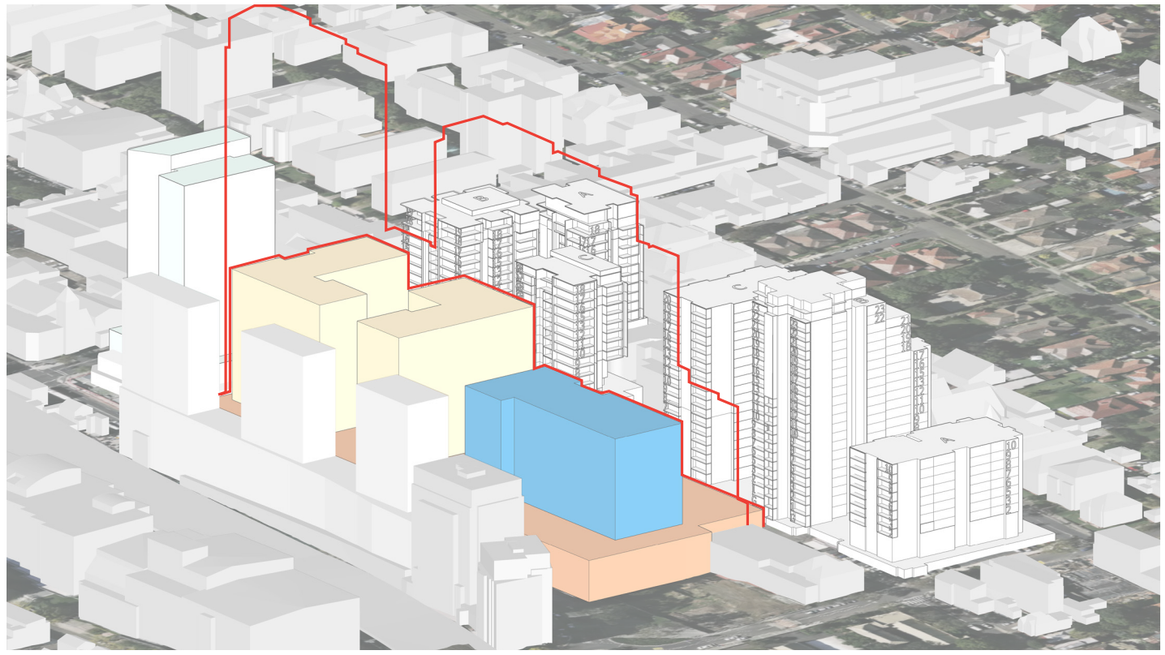
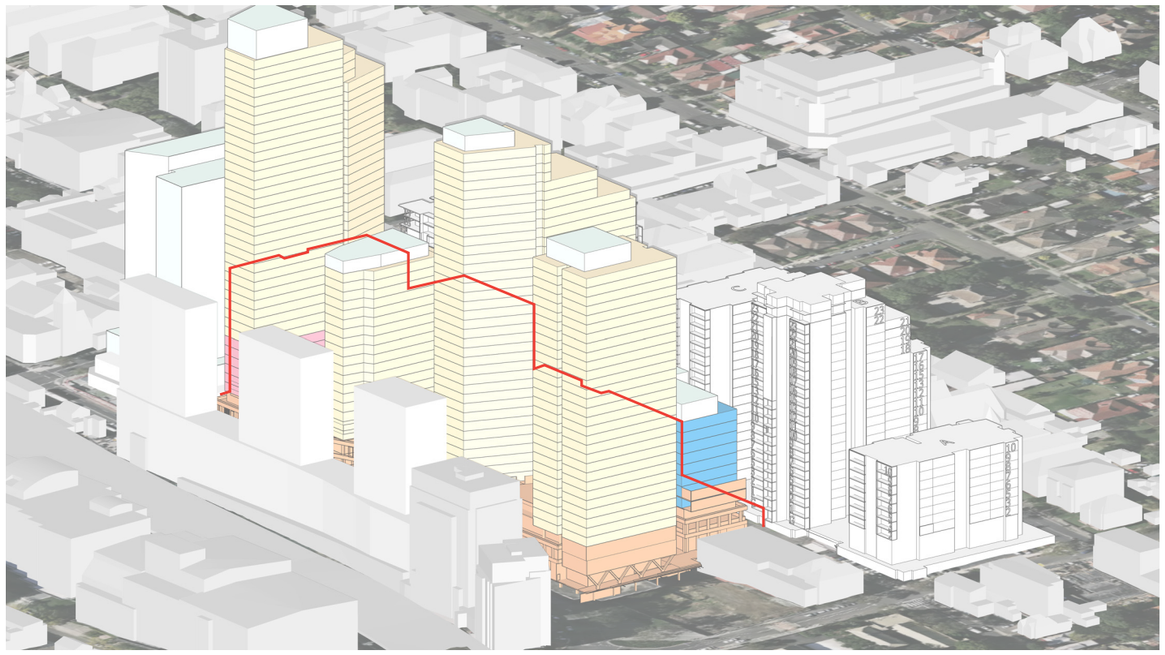


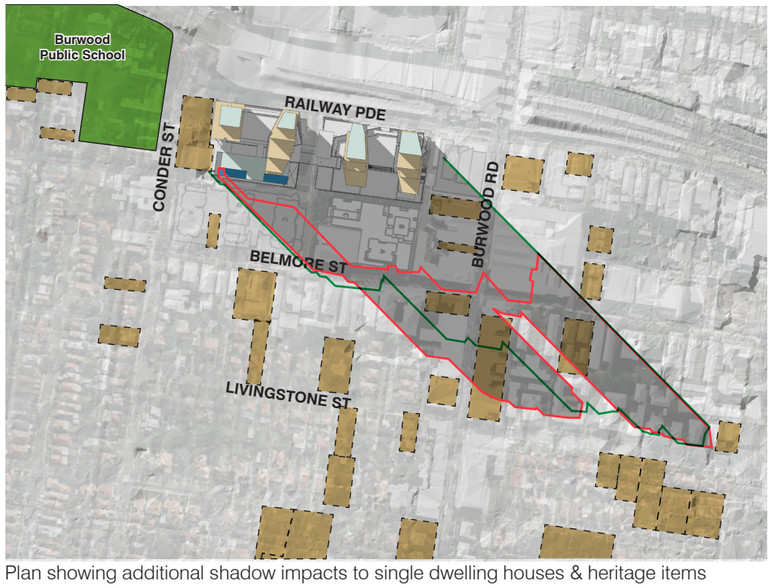
Figure 93. Solar views from the sun 3pm

Notes: The coloured envelopes represent the complying concept building form, and the red outline indicates the amended planning proposal building form.

Amended planning proposal



Notes: The coloured envelopes represent the amended planning proposal building form, and the red outline indicates the complying concept building form.



Plan showing additional shadow impacts to single dwelling houses & heritage items

Key

- Existing buildings / approved DA / under construction
- Residential
- Commercial
- Retail
- Hotel
- Plant/ lift overrun

- Amended planning proposal
- Gateway approved
- Heritage items
- Burwood Public School

Solar ‘views from the sun’ at 3pm - amended planning proposal

Winter Solstice shadows

Gateway approved

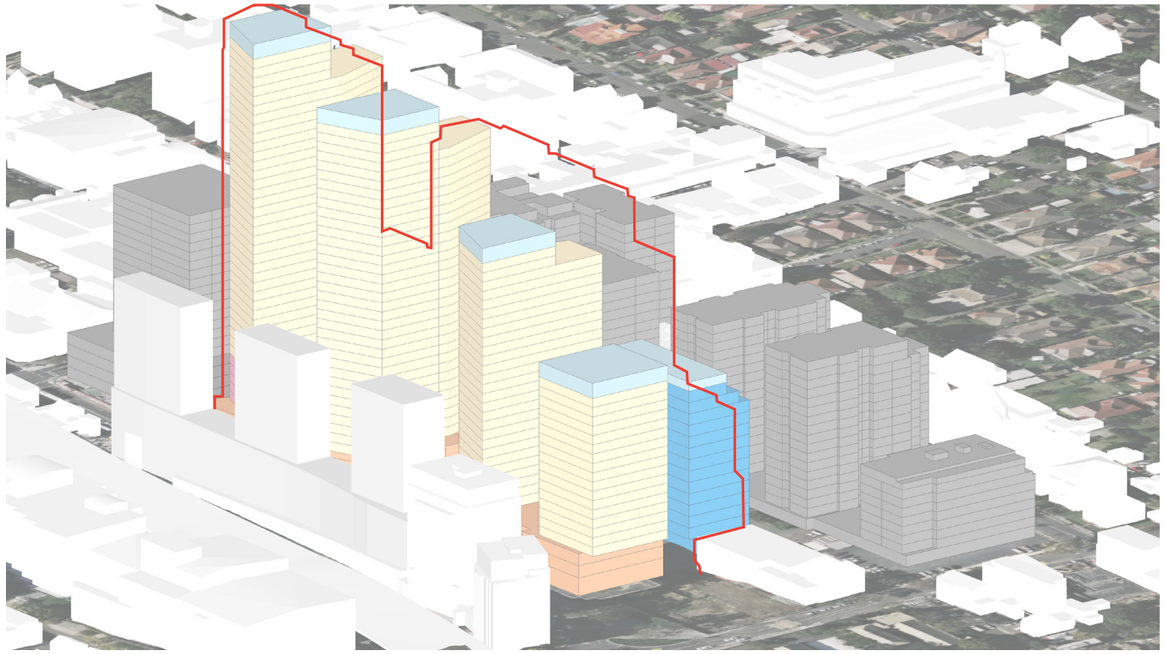
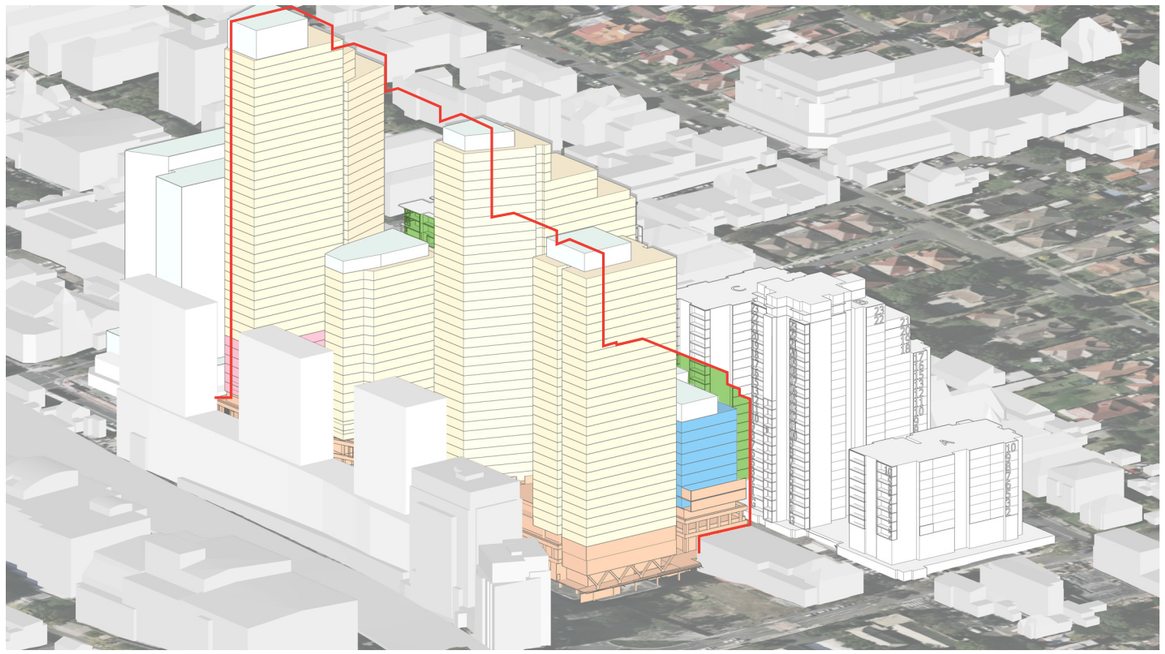


Figure 93. Solar views from the sun 3pm

Notes: The coloured envelopes represent the gateway approved building form, and the red outline indicates the amended planning proposal building form.

Amended planning proposal



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Key

- Existing buildings / approved DA / under construction
- Residential
- Commercial
- Retail
- Hotel
- Plant/ lift overrun

Plan showing additional shadow impacts to single dwelling houses & heritage items

- Amended planning proposal
- Gateway approved
- Heritage items
- Burwood Public School

6.4 Solar access to proposed apartments

Solar Access to apartments

– The proposed development performs very well with the layout, orientation and built form resulting in 81.7% of apartments achieving the minimum 2 hour sun access during the winter solstice.

Building Separation

– The proposed development performs very well with ample building separation between towers, exceeding the minimum separation of 24m.

Tower ID		Lvl 1	Lvl 2	Lvl 3	Lvl 4	Lvl 5	Lvl 6	Lvl 7	Lvl 8	Lvl 9	Lvl 10	Lvl 11	Lvl 12	Lvl 13	Lvl 14	Lvl 15	Lvl 16	Lvl 17	Lvl 18	Lvl 19	Lvl 20	Lvl 21	Lvl 22
A	>2 hours sun		Podium							6	6	6	6	6	6	8	8	8	8	8	8	8	8
	Total apartments									10	10	10	10	9	10	10	10	10	10	10	10	10	10
B	>2 hours sun		Podium		1	6	6	7	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
	Total apartments				5	10	10	10	10	10	10	10	10	9	10	10	10	10	10	10	10	10	10
C	>2 hours sun		Podium		2	7	7	7	7	7	7	7	7	7	8	8	8	8	8	8	8	8	8
	Total apartments				3	8	8	8	8	8	8	8	8	7	10	10	10	10	10	10	10	10	10
D	>2 hours sun		Podium		2	6	6	9	9	9	9	9	9	9	9	9	9	9	9	9	9		
	Total apartments				4	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9		
E			Podium							Commercial													

Tower ID		Lvl 23	Lvl 24	Lvl 25	Lvl 26	Lvl 27	Lvl 28	Lvl 29	Lvl 30	Lvl 31	Lvl 32	Lvl 33	Lvl 34	Lvl 35	Lvl 36	Lvl 37	Lvl 38	Lvl 39	Lvl 40	Lvl 41	Lvl 42	Total	%
A		8	8	8	8	8	8	8	8	8	8	8	8	8	4	4	4	4	4	2	2	228	76.5%
		10	10	10	10	10	10	9	10	10	10	10	10	10	6	6	6	4	4	2	2	298	
B		8	8	8	8	8	8	8	8	8	8	8	8	8	5	5	5	4				263	79.2%
		10	10	10	10	10	10	9	10	10	10	10	10	10	5	5	5	4				332	
C		8	8	8	8	8	9	8	8	8	8	8	8	5	5							244	83.3%
		10	10	10	10	10	9	10	10	10	10	10	10	5	5							293	
D																						140	94.6%
																						148	
E																							
																						875	
																						1071	**81.7%**

Solar Access of combined residential towers

	>2hrs	Total	
Tower A	228	298	
Tower B	263	332	
Tower C	244	293	
Tower D	140	148	
Total	875	1071	**81.7%**

Serviced apartments

*Based on indicative floorplans from information avaliable

6.5 Solar access to Burwood Grand and Emerald Square

Solar access as achieved under the updated PP

Burwood Grand

Building ID		Ground	Level 1	Level 2	Level 3	Level 5	Level 6	Level 7	Level 8	Level 9	Level 10	Level 11	Level 12	Level 13	Level 15	Level 16	Level 17	Level 18	Level 19	Level 20	Level 21	Level 22	Level 23	Level 24	Level 25	**Total**
A	>2 hours sun	Office		7	7	7	7	7	7	7	7															56
	Total apartments	space		11	11	11	11	11	11	11	11															88
				64%	64%	64%	64%	64%	64%	64%	64%															
B	>2 hours sun	5	5	5	5	7	7	7	7	7	7	7	7	7	7	6	6	5	5	5	5	6	6	3	4	141
	Total apartments	9	13	11	11	11	11	11	11	11	11	11	11	11	11	10	10	8	8	8	8	6	6	4	4	226
		56%	38%	45%	45%	64%	64%	64%	64%	64%	64%	64%	64%	64%	64%	60%	60%	63%	63%	63%	63%	100%	100%	75%	100%	
C	>2 hours sun	2	2	2	2	2	2	2	2	2	4	4	4	4	4	6	6	6	6	6						68
	Total apartments	8	14	11	11	11	11	11	9	9	9	9	9	9	9	9	9	9	9	9						185
		25%	14%	18%	18%	18%	18%	18%	22%	22%	44%	44%	44%	44%	44%	67%	67%	67%	67%	67%						

Total >2hrs of sun	265	**53%**
Total apartments	**499**	

Emerald Square

		Ground	Level 1	Level 2	Level 3	Level 5	Level 6	Level 7	Level 8	Level 9	Level 10	Level 11	Level 12	Level 13	Level 15	Level 16	Level 17	Level 18	Level 19	**Total**
A	>2 hours sun	Non-residential podium				1	1	2	2	2	2	2	3	3	3	3	3	1		28
	Total aparments					4	4	5	5	5	5	5	5	5	5	5	4	1		58
						25%	25%	40%	40%	40%	40%	40%	60%	60%	60%	60%	75%	100%		
B	>2 hours sun	Non-residential podium				1	2	2	2	2	3	3	4	5	5	5	5	5	1	45
	Total aparments					5	7	8	8	8	8	8	8	8	8	8	8	6	1	99
						20%	29%	25%	25%	25%	38%	38%	50%	63%	63%	63%	63%	83%	100%	
C	>2 hours sun	Non-residential podium				3	3	3	3	3	3	3	3	3	3	3	2	2		37
	Total aparments					3	3	3	3	5	5	5	5	5	5	5	4	2		53
						100%	100%	100%	100%	60%	60%	60%	60%	60%	60%	60%	50%	100%		

Total >2hrs of sun	110	**52%**
Total apartments	**210**	

Solar Access of combined Burwood Grand + Emerald Square

	>2hours	**Total**	
Burwood Grand	265	499	
Emerald Square	110	210	
	375	709	**53%**

6.6 Visual impact assessment

The Visual Impact Assessment demonstrates that the proposal is likely to visually dominate immediate views, particularly views from the north and west of the subject site. Views from the south and east are partially screened by the approved development application adjoining the subject site.

However, the overall impact is moderate on immediate views, which considers the importance of public views, timing of view, and the screening provided by the approved development application adjoining the subject site.

In most views, the proposal will partially obstruct views to the sky and result in a heightened tower backdrop.

Reassessment

The following nine views are a summary of the Visual Impact Assessment (refer to Appendix C).

The methodology used required a specialised wide angled frame camera to reduce distortion. A 17mm focal length lens was used in all views.

The camera frame and the lens used for these images depart from the standards for Visual Impact Assessment accepted by the NSW Land and Environment Court for approximating the normal human depth of field.

The following five (5) view are examples of the 3D built form and therefore differ from the Visual Impact Assessment submission previously lodged, and may not represent the views experienced.

Refer to the full Visual Impact Assessment for more details.

Burwood Station forecourt

Figure 94. View looking west with proposed development in background and heritage building in foreground.

Roundabout at Conder Street and Railway Parade

Figure 95. View looking east along Railway Parade.

Conder Street from Burwood Public School

Figure 96. View looking east with Burwood Public School behind and council library and carpark (future open space and underground car park) in foreground.

Belmore Street along Wynne Ave

Figure 97. View looking north down Wynne Area with Burwood Grand development on the left and proposed development in the background.

Library car park at Railway Parade

Figure 98. View looking south with proposed development to the left and council library and car park (future open space) on the right.

Note: Images in this section to be updated prior to exhibition. These images are the Approved Gateway. The update images have generally less visual

Local views

Figure 99. View looking south on Elsie Street

Figure 100. View looking north on Livingstone Street

Proposed development

DA approval/ under construction

Note: Images in this section to be updated prior to exhibition. These images are the Approved Gateway. The update images have generally less visual impact.

Suburban views

Figure 101. View from Burwood Park at Comer Street

Figure 102. View looking from Burwood Park corner of Burwood Road and Park Ave

Proposed development

DA approval/ under construction

Note: Images in this section to be updated prior to exhibition. These images are the Approved Gateway. The update images have generally less visual impact.

Regional views

Figure 103. View from Croydon Station overpass bridge looking west.

Figure 104. View looking south from the corner of Parramatta Road and Neich Parade

Conclusion

As outlined in the images above, when the towers are observed from within the centre there is minimal visual impact is due to the orientation and placement of the towers. The height of the towers become more visible when observed in the distance. This however does not pose significant visual impact, as slender towers are proposed with adequate separation distances, which will avoid creating a bulky built form, and will read as a backdrop for the Centre.

Proposed development

DA approval/ under construction

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