



PLANNING PROPOSAL - AMENDED PLANS – 5/2015/PLP

THE GREENS - PROPOSED MIXED USE DEVELOPMENT

Lot 2105 DP 1201899 (former Lot 2103 DP 1176614)
38 Solent Circuit

BAULKHAM HILLS

Mulpha Norwest Pty Ltd

30 June, 2016



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Attachments

A Architectural Design Statement	
B Landscape and Place Making Concept	
C Traffic and Parking Report	
D Site Survey and Registered Plan	

**Submitted
separately**

SUMMARY

This Planning Proposal has been prepared by Mulpha Norwest, the owners of 38 Solent Circuit Baulkham Hills in Norwest Business Park, to support an amendment to *The Hills Local Environmental Plan 2012*. While being substantially the same, this Planning Proposal updates and amends the previous proposal lodged for this site with Council in September 2014 (5/2015/PLP).

Specifically, this Planning Proposal seeks to:

- Support additional land uses being permitted on the site zoned R4 High Density Residential namely uses permitted in the B1 Neighbourhood Centres Zone - business premises, child care centres, health consulting rooms, medical centres, recreation facilities (indoors), restaurants, cafes and shops, matching the same permitted uses as previously proposed;
- Increase the maximum permissible building height from RL 116 metres to RL 176 metres (previously to RL 164m); and
- Introduce a maximum permissible floor space ratio (FSR), where none currently exists on the site, of 4.5:1, matching the same FSR as previously proposed for the site.

Mulpha Norwest has made a long term commitment to the regeneration of Norwest Business Park as a beacon for innovation, with connected infrastructure and a thriving community.

The Planning Proposal capitalises on the unique and exciting opportunities provided by both State and Local Council strategic planning. This planning foresees Norwest as a strategic centre, centrally positioned on the soon to be operational Sydney Metro North West rail line, with direct links via two metro stations, Bella Vista and Norwest, to Sydney CBD, the airport and other metropolitan centres.

This Planning Proposal seeks to commence this regeneration by establishing a vibrant residential town centre within 500m of the new Norwest Metro Station. Architectural design excellence has been applied to create “The Greens”, using the characteristics of this large site, to achieve a coherent ensemble of buildings, unified by an underlying consistency in the character and quality of the residential built form.

The preference for a family of nine slender tower forms of varying height (8 to 26 storeys), with an “iconic statement tower”, creates an exciting sculptural silhouette and liberates an expansive ground plane that is used to establish an unprecedented level of landscape amenity and signature place making for residents and visitors to the site.

Tower shapes and placements maximise separation distances with consequent benefits in terms of solar access, natural ventilation and views. Importantly, the tower placements enable views into and through the site, both to and from vantage points within the public domain. This vision sets new standards for high density residential living, where both the built form and the landscaped open spaces are crafted to achieve the most desirable living environment.

The Planning Proposal supports planning controls which will enable the future development of the site to make a positive contribution to the evolving strategic context and future housing and employment needs in Norwest and the region.

This Planning Proposal has been prepared in accordance with the NSW Department of Planning and Environment’s “*A guide to preparing planning proposals*.” It is anticipated that, following Gateway Determination additional studies will be required.



Image 1: Photomontage of "The Greens" - a coherent ensemble of buildings.

1. INTRODUCTION

This report has been prepared by Mulpha Norwest Pty Ltd as the owners of the subject site at 38 Solent Circuit Baulkham Hills, in support of a Planning Proposal to amend The Hills Local Environmental Plan 2012. The proposal supports an uplift in the maximum permissible Floor Space Ratio (FSR) control to 4.5:1, an uplift in the maximum permissible height control to 176m metres, to allow future high density residential, and to permit additional land uses comprising business premises, health consulting rooms, medical centres, recreation facilities (indoors), restaurants or cafes, and shops.

This Planning Proposal has been prepared for the purposes of section 55 of the Environmental Planning and Assessment Act 1979 (EP&A Act) and the guideline prepared by the Department of Planning dated October 2012 entitled “A guide to preparing Planning Proposals”. In particular, this Planning Proposal addresses the following specific matters in the guideline:

- Objectives and intended outcomes;
- Explanation of provisions;
- Justification;
- Need for the Planning Proposal;
- Relationship to strategic planning framework;
- Environmental, social and economic impact;
- State and Commonwealth interests; and
- Community consultation.

Following assessment and Council’s support, it is requested that Council forward the Planning Proposal to the Minister for Planning and Environment for a ‘gateway determination’ in accordance with section 56 of the EP&A Act.

1.1 Previous Planning Proposal

In September 2014 Brown Consulting lodged a Planning Proposal to The Hills Shire Council for 30 Solent Circuit, Baulkham Hills on behalf of Mulpha Norwest Pty Limited. This Planning Proposal supported an increase in the building height, the adoption of floor space ratio (FSR) controls and the inclusion of additional land uses for the site formerly known as Lot 2103 DP 1176614 (now described as Lot 2105 DP1201899).

The proposal was designed to deliver approximately *“1200 additional dwellings in the East Precinct of the Norwest Town Centre, with high amenity and excellent access to retail and commercial facilities and to transport, including the Norwest Station of the North West Rail Link, currently under construction. Full development of the Site, with a total capital investment value of around \$400 million will contribute up to 28% of the 4,350 total new dwellings targeted for the Norwest Town Centre by 2036”* (Brown Consulting – Page 1, September 2014).

The site-specific amendments to The Hills Local Environmental Plan 2012 (LEP) were:

“i. Increase the Building Height under Clause 4.3 Height of Buildings from the current building height control of 16 metres to RL 164m;

ii. Adopt a Floor Space Ratio (FSR) under Clause 4.4 Floor Space Ratio of 4.5:1; and

iii. Include the following additional land uses for Lot 2103 –” (Brown Consulting - page 1, September, 2014).

The Planning Proposal provided justification and information to support complementary site-specific amendments to The Hills Development Control Plan 2012, relating to density, apartment size and variety, building setbacks, open space, parking, road layout and waste management.

Since lodgement of this Planning Proposal, Mulpha Norwest has been focused on the Watermark (nearing completion) and Haven (nearing commencement) residential development projects over the western portion of the site. During this time, further consideration has been given to the development potential of the remainder of the site given the strategic opportunities it presents in terms of location and setting.

These factors present a significant opportunity to design a development which will contribute to building Norwest into a new town centre providing high density residential accommodation for a new residential community in close proximity employment and the new Sydney Metro North West Rail station. This facility is currently under construction and due to commence operations in 2019.

This Planning Proposal concept applies to the site known as “The Greens” and supersedes the previous Planning Proposal Submission – Norwest Town Centre - East Precinct- “The Greens”, Revision E, dated 04 September 2014.

1.2 The Planning Process

This Planning Report forms part of the Planning Proposal submitted to The Hills Shire Council. The accompanying Planning Proposal documents comprise an architectural design statement, landscape and place making concept, and traffic assessment. In total this report seeks to provide Council with sufficient information to support the Proposal and as the next step refer the matter to the NSW Department of Planning and Environment’s LEP Gateway Review Panel.

The supporting documents comprise:-

- Architectural Statement prepared by Krikis Tayler Architects;
- Landscape Concept and Place making report prepared by Site Image Landscape Architects and Krikis Tayler; and
- Traffic and Parking Report prepared by TDG in association with Gennaoui Consulting.

Should the Review Panel support the proposal, an amendment to The Hills Local Environmental Plan 2012 would be prepared with further detailed studies for public exhibition, community input and consultation with relevant authorities. Council would then fully assess the Planning Proposal and determine whether changes should be made to The Hills Local Environmental Plan 2012.

In this regard, the intent of this report is to provide an update of the information previously submitted to Council and amended plans with sufficient detail to demonstrate the Planning Proposal has strategic merit and warrants detailed consideration.

2. LOCATION AND CONTEXT

2.1 Site Description

This Planning Proposal applies to Lot 2105 DP 1201899, Solent Circuit, Baulkham Hills. The property is owned by Mulpha Norwest Pty Limited and covers an area of 4.36 hectares.

This site was formerly part of the North Sydney Brick and Tile Company's brick works holding and subsequently identified for high density residential development within the Norwest Town Centre.



Image 2: Aerial View of site.

2.2 Existing development

Since lodgement of the previous Planning Proposal (5/2015/PLP) there have been a number of developments as follows:-

- Watermark residential development comprising 99 units approved and nearing completion;
- Haven residential development comprising 77 units approved nearing commencement;
- Subdivision applications approved creating 2 allotments, one for Watermark (Lot 2104 - area 4581m²) and one for the remainder of the site (Lot 2105 – area 4.36 hectares).

While these developments have changed the character of part of the site from vacant to undergoing development, the larger portion of the site (Lot 2105) remains vacant. Allowing for the future subdivision of the Haven site (0.4Ha), the remaining Part Lot 2105 is 3.96 hectares in area.

2.3 Site Context

2.3.1 Local Development - The site forms part of Norwest Town Centre and is separated from the retail core by Solent Circuit and the lake. The site is surrounded by commercial and employment development to the south and east. The northern boundary adjoins land approved (to Gateway) for high density residential development, Castle Hill Country Club and retirement housing. The western boundary of the site adjoins Lot 2102 which contains a dam and open space, and extends the drainage infrastructure associated with Norwest Lake.

2.3.2 Planning Controls – The site (Lot 2104 and 2105) is subject to The Hills Shire Council Local Environmental Plan 2012 which zones the site R4 High Density Residential. The objectives of this zone are:-

Objectives of zone

- *To provide for the housing needs of the community within a high density residential environment.*
- *To provide a variety of housing types within a high density residential environment.*
- *To enable other land uses that provides facilities or services to meet the day to day needs of residents.*
- *To encourage high density residential development in locations that are close to population centres and public transport routes.*

Under this zoning residential flat buildings are permitted along with a range supporting and compatible uses including shop top housing, multi dwelling housing and child care centres. Key development standards applying to this site are shown in Table 1 below:-

Table 1: Key Applicable Development Standards

Development Standards	
Building Height	RL 116m
Minimum Lot Size	4,000m ² for residential flat buildings
Floor Space Ratio	None Applicable

The Hills Shire Development Control Plan 2012, Part D Section 8 establishes the desired future character for Norwest Town Centre East Residential Precinct (former parent Lot 2103) as being:-

“to provide residential flat buildings in a landscaped parkland setting. The density of the residential flat buildings is to reflect the scale of the commercial buildings located in the Norwest Business Park adjoining Solent Circuit.”

2.3.3 Vehicle Access - All vehicle access to the site is by Solent Circuit. In future with the construction of an access road cul-de-sac, at first then, upgrade to linking with Spurway Drive, alternate access will be available to Windsor Road.

Solent Circuit is a local loop road which connects to Norwest Boulevard. Norwest Boulevard is under the control of The Roads and Maritime Service and provides a major traffic link through the Norwest Business Park to State Arterial roads being Windsor Road, Old Windsor Road and the M7 Tollway.

- 2.3.4 **Public Transport** – Private bus transport services the Norwest Business Park via Norwest Boulevard and the adjacent urban areas of Castle Hill, Baulkham Hills, Kellyville, Rouse Hill, Blacktown and Parramatta. This transport is readily available within a short walking distance from the site.
- 2.3.5 **Pedestrian Environment** – The site is within 400m from Norwest Market Town Shopping Centre and approximately 500m from the new Norwest Metro Station.

2.4 Proposals for Future Development

The previous Planning Proposal recognised that there had been several developments and planning proposals considered by the Council in the vicinity of the site. These include:-

- 47 Spurway Drive - Residential Development comprising 1300 dwellings, height ranging 18-36m and FSR ranging 1.5 to 3.2:1;
- 11-13 Solent Circuit – Mixed Use Retail, Commercial and Residential development to a maximum height of RL 143.20m; and
- 2-8 Maitland Place – Mixed Use Commercial and Residential Development to a maximum height of RL 169m.



Image 3: Oblique Aerial view of site showing Norwest Markettown and Metro Station in foreground.

In summary, the site comprises a large area of underdeveloped land, zoned for high density residential development as part of the developing Norwest Town Centre Residential Precinct and is positioned in close proximity to existing commercial, business and retail services and facilities, and within 500m of Norwest Station. These characteristics make the site ideally placed for high rise residential development.

3. STRATEGIC PLANNING CONTEXT

3.1 A Plan for Growing Sydney

The principal planning document guiding the growth of Sydney is “A Plan for Growing Sydney” released by the NSW State Government in December, 2014. The aim of this plan is to guide Sydney’s growth over the next 20 years accommodating some 1.6 million people with a majority 900,000 estimated in Western Sydney.

The vision for Sydney is – “a strong global city, a great place to live.” This is supported by four goals as follows:-

- 1: A competitive economy with world-class services and transport;
- 2: A city of housing choice with homes that meet our needs and lifestyles;
- 3: A great place to live with communities that are strong, healthy and well connected;
- 4: A sustainable and resilient city that protects the natural environment and has a balanced approach to the use of land and resources.

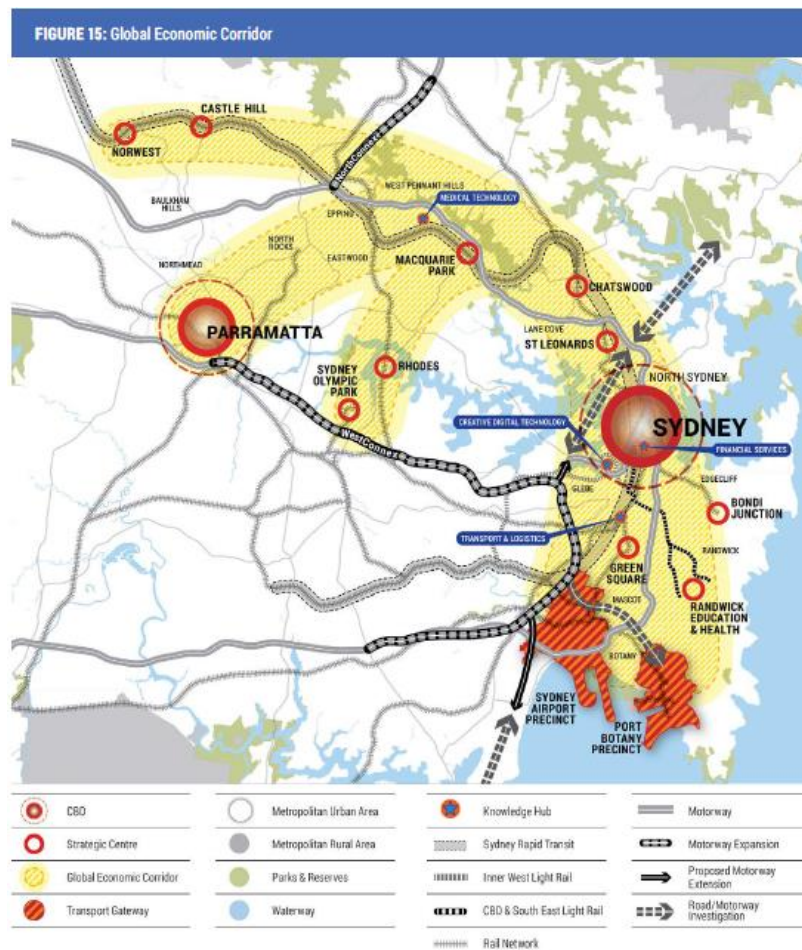


Figure 1: Global Economic Corridor (A Plan for Growing Sydney)

To achieve the vision job creation is essential and strategic centres have been identified as key directions for the Plan as demonstrated by:-

Direction 1.6: Expand the Global Economic corridor – which accounts for over 41% of the NSW Gross State Product; and

Direction 1.7: Grow Strategic Centres – providing more jobs closer to home. The Plan states *“delivering more housing through targeted urban renewal around centres on the transport network will provide more homes closer to jobs and boost productivity for the city.”*

The Planning Proposal facilitates the delivery of these directions by providing housing in Norwest, a designated strategic centre, within walking distance of major new infrastructure – the Sydney Metro Northwest and its metro station at Norwest.

Council’s Local Strategy

This strategy adopted in 2008, is the main document for communicating Council’s future planning for The Hills Shire and reflects the key themes of *“Hills 2026 Community Strategic Direction: Looking Towards the Future”*.

This Planning Proposal is consistent with the Local Strategy Key Directions specifically in relation to:

- *C1 - Reinforce, promote and protect hierarchy of centres within the Shire* – the proposal enhances the growth and development of the Norwest Business Park as a strategic centre;
- *E1 - Accommodate the growth of a local economy to meet community needs* – additional housing in close proximity to jobs, facilities and services helps generate the local economy;
- *E3 - Promote growth in local business and employment opportunities* – encouraging mixed uses development with the proposal vitalises the public realm and improves community lifestyle opportunities;
- *E4 - Enhance the use and viability of existing employment lands* – the proposal provides housing for employees in close proximity jobs with a developing strategic centre;
- *EL4 - Provide for public domain spaces that encourage community interaction* – the planning proposal incorporates a variety of open space places created for enjoyment of residents and the public;
- *R1 - Accommodate population growth* – the facilitates the achievement of housing targets to accommodate population growth;
- *R2 - Respond to changing housing needs* - the proposal seeks to increase the range of housing opportunities available in close proximity to public transport;
- *R3 - Provide for a sustainable living environment* – the proposal concentrates population increase in walking distance to a wide range of retail, community, commercial, business and transport facilities encouraging a more sustainable development;
- *R4 - Facilitate quality housing outcomes* – the proposal will result in contemporary styled residential housing accommodation meeting current requirements and market expectations; and
- *T1 - Support the use of public transport* – the proposed development increases population density supporting public transport within 400m of the Norwest Metro Rail Station.

3.2 Sydney Metro North West

The \$8.3 billion Sydney Metro Northwest (formerly known as the North West Rail Link) is Australia’s largest public transport infrastructure project currently under construction and a priority rail project for the NSW Government. The project will deliver eight new railway stations to Sydney’s growing North West and is due to

open in the first half of 2019. The North West Rail Link Corridor Strategy was prepared to guide future planning and development along the rail corridor, with a Structure Plan prepared for each of the new eight stations.

The Department of Planning and Environment and Transport for NSW, in consultation with relevant local councils and State government agencies, finalised the North Rail Link Corridor Strategy in September 2013. The Corridor Strategy, which included Structure Plans for each station precinct, was prepared to integrate land use and transport planning to meet current and emerging challenges associated with future expected growth in the North West region, and:

- identified future visions for the precincts surrounding the new stations;
- projected housing and job growth for each precinct and the corridor as a whole; and
- established a framework for managing future land use change.

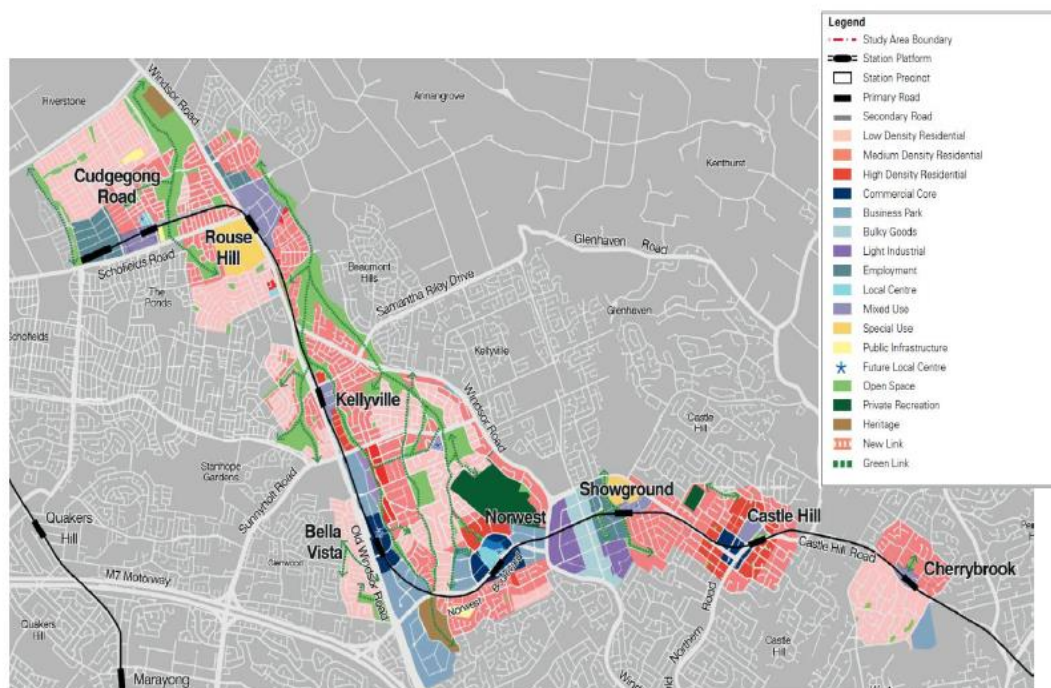


Figure 2: Land affected by the North West Rail Link Corridor Strategy

When the Corridor Strategy was made, a local planning direction was issued by the Minister for Planning under Section 117 of the Environmental Planning and Assessment Act 1979 to require future planning in the precincts to be consistent with the Corridor Strategy, including the growth projections and future character of each station precinct.

3.3 Norwest Business Park

A Structure Plan was prepared for the Norwest Station Precinct as part of the North West Rail Link Corridor Strategy. The Norwest Station Structure Plan considered the potential for the Sydney Metro Northwest to transform the Norwest Station Precinct by increasing residential densities in close proximity to rail and employment.

Key elements of the Norwest Station Structure Plan relating to this Planning Proposal are: –

- Potential to further reinforce Norwest as a Specialised Precinct and the largest employment centre for Sydney's North West.
- Opportunities to increase residential densities within walking distance of the station by introducing a variety of housing types to ensure there is affordability and appropriate housing for all members of the community.
- The Structure Plan is formulated on the principles of Transit Orientated Development – mixed used communities within walking distance of a transit node that provide a range of residential, commercial, open space and public facilities that make it convenient and attractive to walk, cycle or use public transport for the majority of trips.
- The Structure Plan is designed to reinforce a “true commercial core” for Norwest by intensifying mixed retail and commercial development on land surrounding the Norwest Lake. The commercial core is likely to have a higher built-form character with mixed use towers up to 30 storeys.
- To the immediate north of the mixed retail and commercial core, land has been identified for high density residential development of “7-12 storeys” with direct access to the Norwest Train Station. (This land includes the Site – Lot 2105.)
- Projection of 4,350 new dwellings within the Norwest Precinct by 2036.

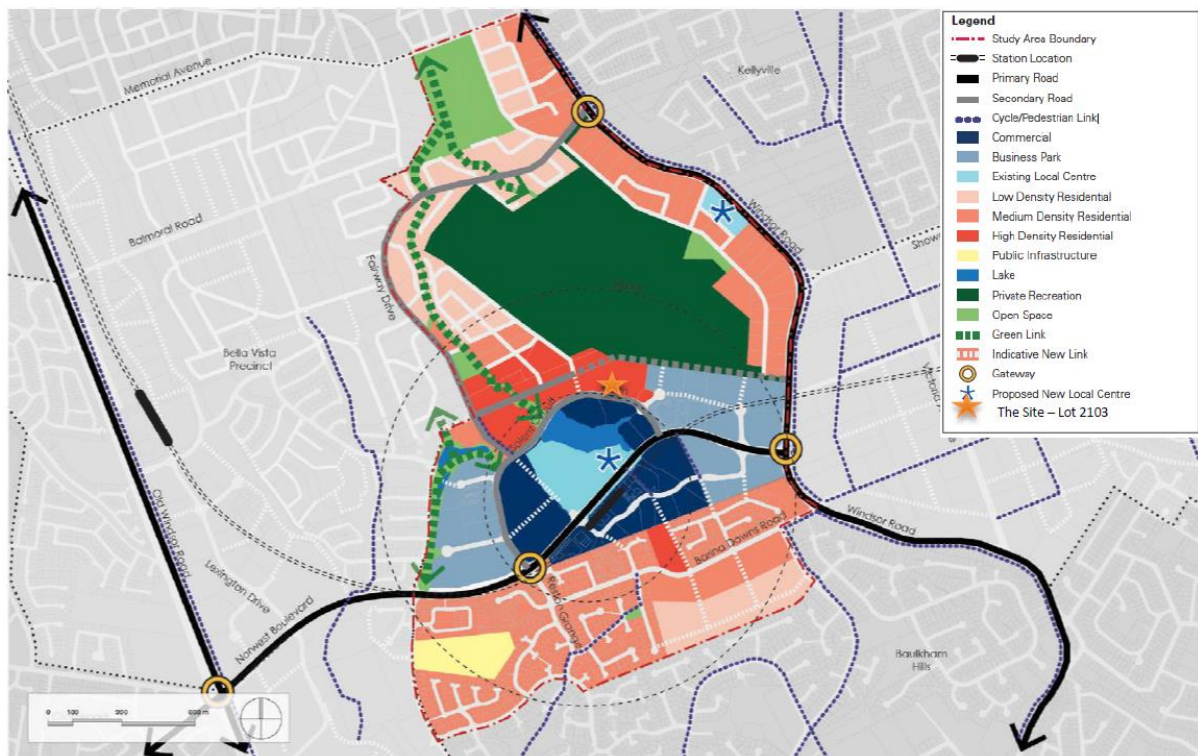


Figure 3: Structure Plan for Norwest Precinct

Hills Corridor Strategy

The Hills Shire Council recognises that Sydney Metro Northwest is a transformational transport project which will significantly enhance the attractiveness for business and liveability for residents of the Hills Shire. From Council's position, *“it is important that the land uses around the stations support each stations role, achieve housing and jobs targets, create vibrant safe, desirable places and reinforce the garden Shire character and lifestyle.”*

Adopted by Council on 24 November, 2015, the purpose of the Corridor Strategy is to articulate Council's response to land use development over the next 20 years for each of the seven (7) new Sydney Metro Northwest stations within or adjacent to the Hills Local Government Area. A basic premise is creating a hierarchy of zones with greatest densities closer to transport centres.

"The Strategy identifies Norwest Business Park as major specialised centre and seeks to reinforce the centre as a key employment destination, becoming the largest employment centre for the North West. The Hills Corridor Strategy identifies opportunity for 5,320 additional dwellings and 14,450 additional jobs within the Norwest Precinct by 2036 "(Council 22 Report March, 2016).

The Strategy sees the desired future outcome for Norwest Precinct as shown in Figure... below.

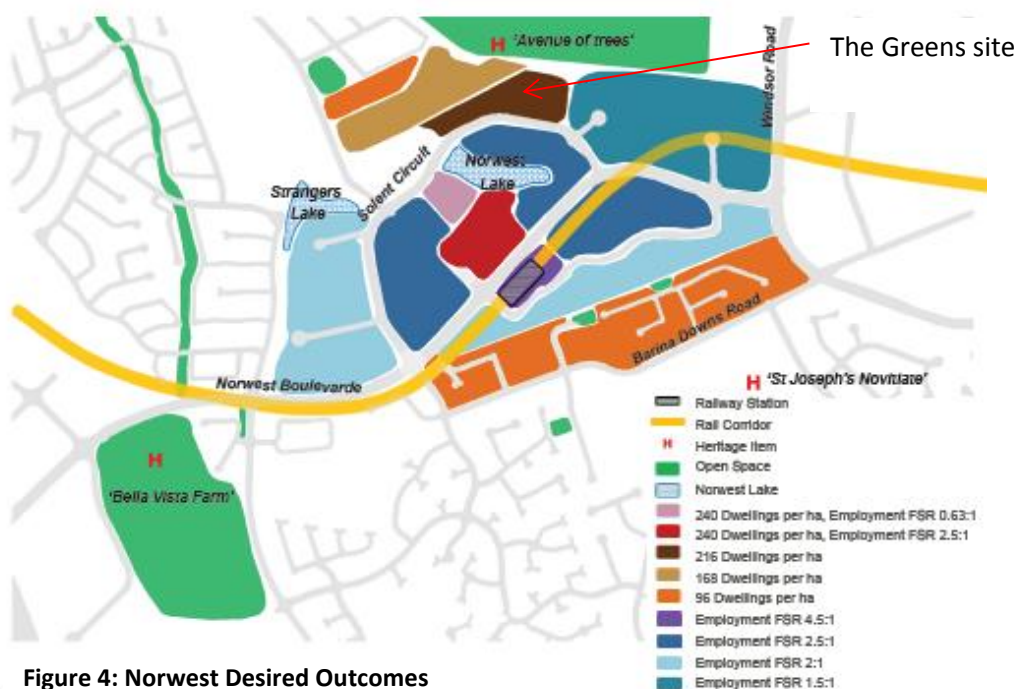


Figure 4: Norwest Desired Outcomes

The site of the Planning Proposal sits within land in a radius of 500m from the Norwest Rail Station earmarked for supporting increased residential density development in the order of 216 dwellings per hectare.

Hills Future Community Strategic Plan 2015-2016

This Plan envisages a 10 year horizon where with the following relevant outcomes:-

- Safe, convenient and accessible transport options that enable movement through and within our Shire;
- Responsible planning facilitates a desirable living environment and meets growth targets; and
- Our Shire is the vibrant key business centre in the region.

The Planning Proposal supports these desired outcomes in that it supports Transit Orientated Development, provides an alternative high density living environment close employment and transport and supports the development and growth of the Norwest Town Centre and Business Park.



Image 4: Local Strategic Setting

In summary, this Planning Proposal is consistent with:-

- The State Government’s Plan for Growing Sydney directions to expand the Global Economic Corridor and growing Strategic Centres in this case Norwest;
- A number of the Council’s Local Strategy Key Directions specifically relating to housing accommodation close proximity to jobs, facilities and services helps generate the local economy, and supporting public transport namely Norwest Metro Rail Station;
- The Norwest Station Structure Plan as part of the potential for the Sydney Metro Northwest to transform the Norwest Station Precinct by increasing residential densities in close proximity to rail and employment;
- The Hills Corridor Strategy which encourages *“land uses around the stations support each stations role, achieve housing and jobs targets, create vibrant safe, desirable places and reinforce the garden Shire character and lifestyle.”*
- The Hills Future Strategic Plan desired outcomes in terms of safe and convenient transport, continued growth through responsible planning and development of key business centres such as Norwest.

4. PLANNING PROPOSAL

The original Planning Proposal was prepared in accordance with the NSW Department of Planning and Infrastructure's 'Guide to Preparing Planning Proposals' (October 2012). Similarly this proposal addresses the relevant matters for consideration which need to be addressed at this stage.

4.1 Part 1 - Objectives and Intended Outcomes

The objectives and intended outcomes of this Planning Proposal are unchanged from those previously submitted to the Council as being:-

- a) To support the viability of the Norwest Rail Station and the Norwest Town Centre and Business Park through the development of a high density residential neighbourhood within walking distance of the Station and the retail/commercial core;*
- b) To provide a design solution that offers a dynamic architectural form, extensive open spaces, visual and pedestrian permeability, maximisation of solar access, a variety of housing options and an activated interface between the residential and retail/commercial core of the Norwest Town Centre; and*
- c) To provide residents with access to facilities and services similar to those that would be provided in a neighbourhood centre.*

This Planning Proposal will contribute towards meeting the Housing Projections for the Norwest Precinct, and for the North West region of Sydney. The proposal will also reinforce Norwest as a place for employment and promote further growth and investment.

The Proposal seeks to achieve this through site-specific amendments to The Hills Local Environmental Plan 2012 by:-

1. Varying the Height of Buildings map;
2. Adopting a Floor Space Ratio for the Site; and
3. Adding additional land uses, similar to those in a neighbourhood centre, to those permissible with consent in the R4 – High Density Residential Zone.

The following sections describe the proposal in terms of built form, land use, residential density, floor space ratio, landscaping and place making, and design excellence.

4.1.1 Built Form and Height

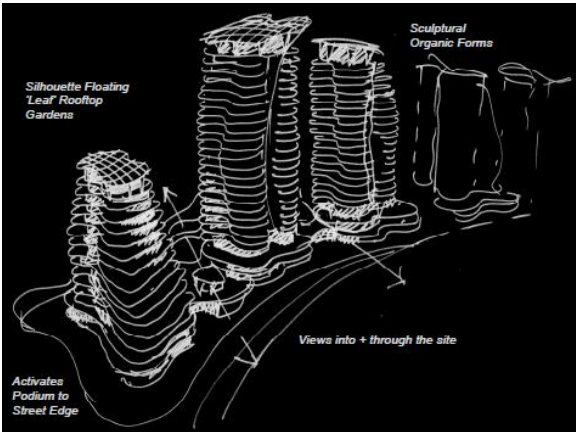
This Planning Proposal revision does not alter the configuration of buildings west of the link road, as they are either under construction or committed to construction. The revision to the Planning Proposal may be described as the vision for development of the most significant portion of The Greens site, east of the link road. The proposal for this 4.018(including the link road) hectare portion of site establishes a high density residential development that delivers a variety of modern apartment types and townhouses within 500m of the new Norwest Station and in walking distance of the employment opportunities offered in the greater Norwest precinct.

The Greens presents a rare opportunity to develop a high density residential precinct with a variety of co-ordinated built forms and an unprecedented quality of on-site amenity. The exceptionally large site is proposed to accommodate nine separate buildings of varying heights and shapes, conceived with individual character, whilst exhibiting an underlying cohesive familial consistency of sculptural form.

Perhaps the most important aspect of the proposal is the relatively small proportion of the site that is designated for the building footprints and the consequent liberation of the ground plane for provision of

An expansive landscape setting and quality place making.

This approach to built form also delivers large separation distances between buildings, which enables views from the apartments out over the adjacent lake, golf course and district beyond, whilst also preserving vistas into and through the site from various vantage points in the public domain. The separation distances ensure good solar access to apartments as well as to the landscaped ground plane within the site and the public domain beyond the site.



The concept is based upon the application of discrete tower forms with generous separation distances. Whilst care has been taken to achieve suitable definition of the site’s street frontages, the composition eschews large footprint buildings in favour of discrete tower forms, which serve to enable vistas into and through the site and to liberate a large expanse of ground plane, deriving fundamental benefits both within and beyond the site.

The concept establishes nine towers that range in height from eight to twenty six storeys. The heights of the buildings are varied to create an interesting interplay of forms. Organic qualities create an exciting and contemporary aesthetic that responds to the undulating topography of the site and its surrounds. The shapes and layered expression serve to integrate the tower forms with the podium and ground plane. Differentiation of the floor plate and balcony configurations within each tower creates dramatic sculptural form and implied movement. Roof top shaping under a floating leaf form completes the composition and is designed to encapsulate lift overruns and provide additional communal facilities in select buildings.

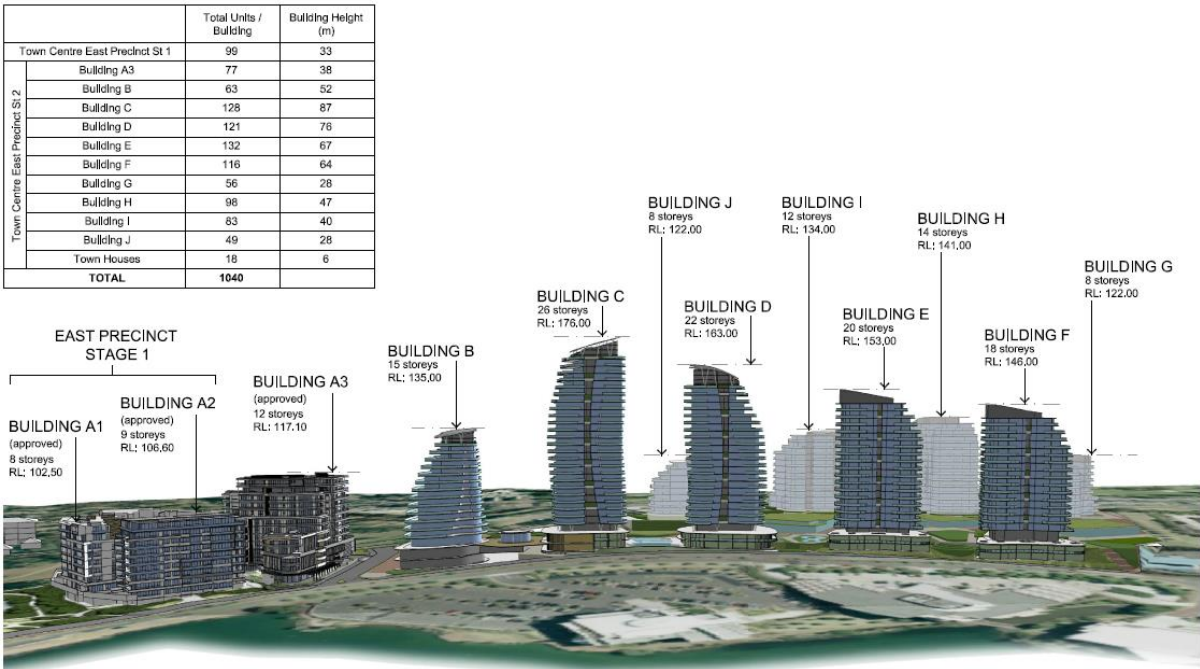


Image 5: Building Height

4.1.2 Land Use

Retail and commercial space is proposed to be incorporated around the Solent Circuit intersection with the new north-south link road, serving as a gateway into the precinct. These uses also feature at the base of Buildings A, B and C, sufficient to establish a critical mass of support facilities and activate the street frontage, as well as the publicly accessible “Hub” within the site.

Approximately 6,000m² of non-residential space is proposed to serve as precinct support facilities. This includes 1,500m² business / offices, 500m² of café / restaurants, 1,000m² of neighbourhood shops, a 1,500m² gymnasium, 1,000m² of medical related uses and a 500m² childcare facility.

The extent of these facilities is considered to be an important complement to the established retail and commercial offerings in the greater precinct, providing readily available convenience services for the incoming residential population at The Greens and locally. Equally importantly, they are considered to be an important ingredient in the activation of street frontages and the publically accessible portions of the site.



Image 6: Photomontage of Building C and ground and upper level activation in the “Hub”

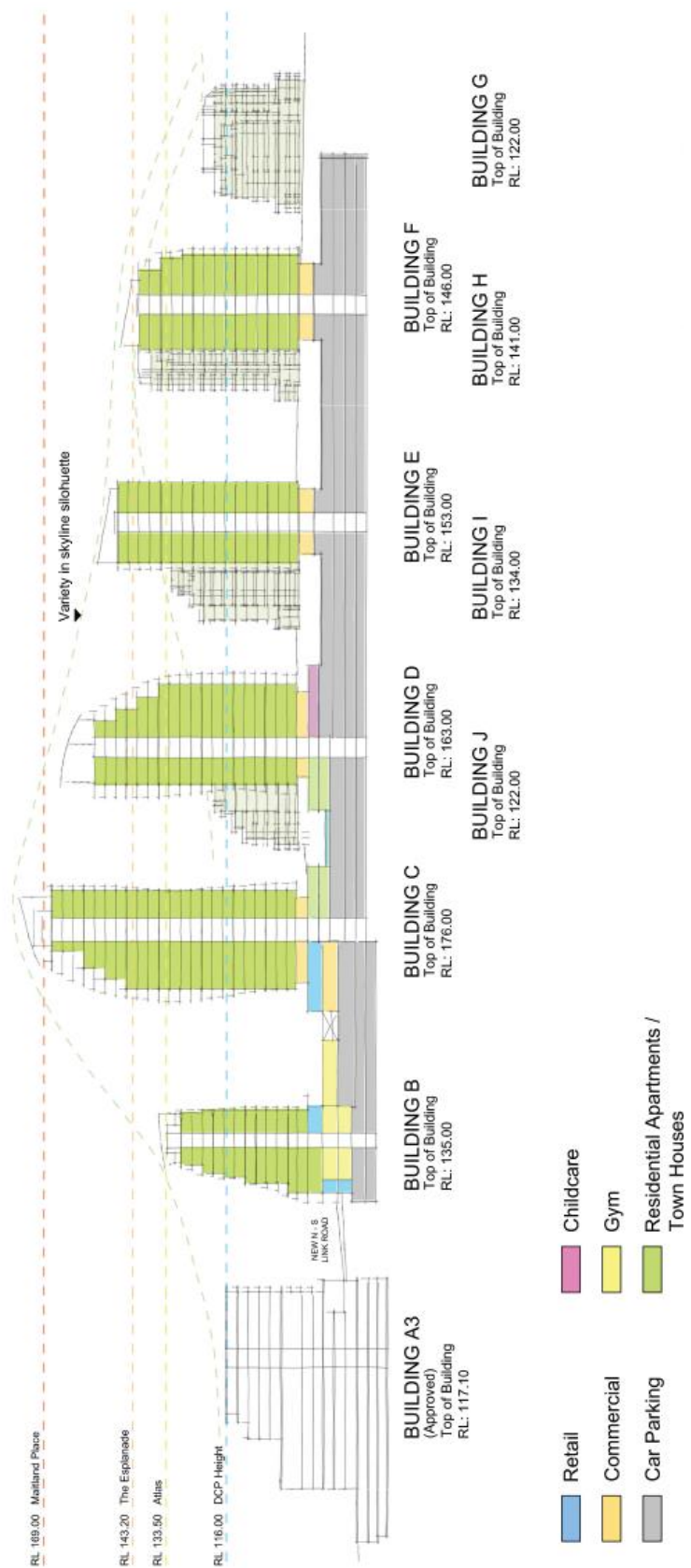


Image 7: Building Height Comparison

4.1.3 Residential Density

The Greens site is a total of 4.818 hectares. Application of 216 dwellings per hectare as identified in Council's Hills Corridor Strategy results in a potential 1040 dwellings across the site. There are a total of 176 apartments committed in Buildings A1, A2 and A3. A total of 864 dwellings are proposed for the portion of site east of the new link road, which includes 846 apartments in nine new tower buildings and 18 new town houses. This results in a total of 1040 dwellings for this part of the Norwest Town Centre.

4.1.4 Floor Space Ratio

Similar to the previous planning proposal, a Floor Space ratio of 4.5:1 is sought for the portion of site east of the link road. This FSR enables the potential subdivision into lots for each of the tower buildings, whilst preserving a common central lot for communal open space.

4.1.5 Landscaping and Place Making

The Planning Proposal masterplan concept is distinguished by a unique landscaped environment, known as The Greens Common, which capitalises on the large site area and its topography. Landscape design combines with architectural form to create a variety of significant outdoor spaces, crafted to support an even greater variety of activities.

The Greens Common landscape theme is a celebration of the natural environment and the character for which The Hills is renowned. Exploitation of the site's topography creates interest and variety in the levels, sizes and shapes of outdoor spaces. Each space is different, characterised by the nature of activity it supports and the uses that adjoin it.

Place making design creates a hierarchy of carefully designed spaces to provide for a range of active and more passive pursuits. Publically accessible areas, activated with cafes, restaurants and other commercial activity, foster engagement with the broader community and the visiting public. Spaces with more limited access, such as a resort style pool area and more passive gardens provide communal areas to be shared by the residents.

Private open spaces associated with ground level apartments and townhouses add to the variety and amenity of dwelling types. The Greens Common landscaping and place making concept is described in the detail statement prepared by Site Image Landscape Architects.



Image 8: Landscape Setting – “The Greens” site highlighted red.

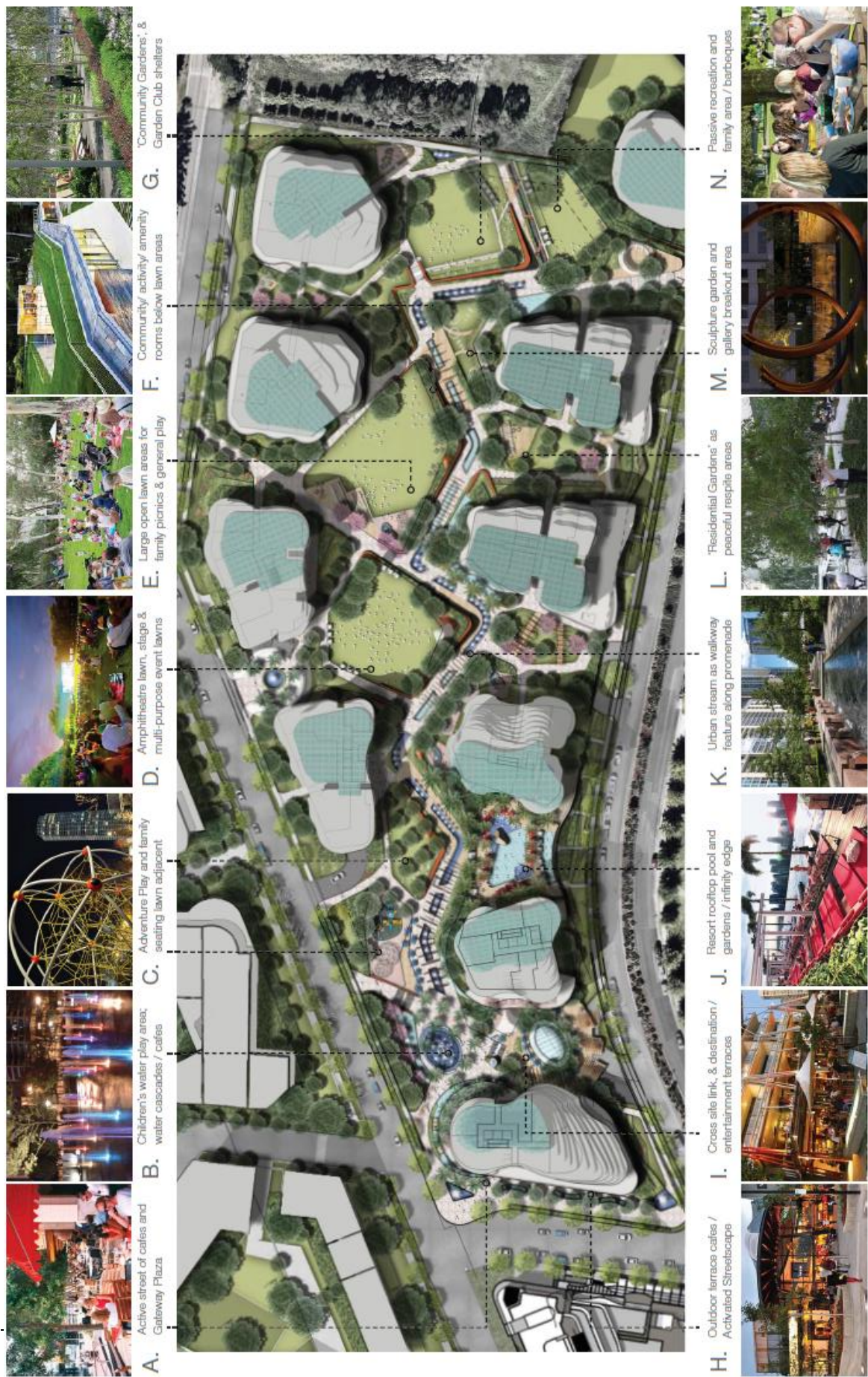
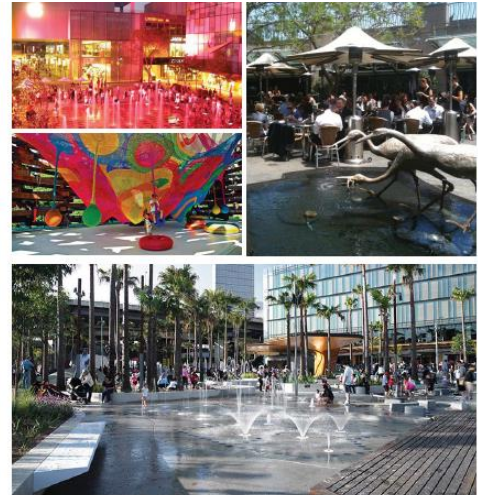


Image 9: Landscape Place Making Master Plan



Precinct Plan

- Cross site pedestrian link / stair
- Water play area and adjoining water cascades with seating edge
- Lower cafe and florist relating to water play and community gardens
- Cafe terrace set into the water of the adjacent urban stream water feature
- Feature playground to terrace to activate cafe overlooking water play / promenade
- Signature pavilion building with restaurant opening to north & south active areas
- Cafes and retail to the streetfront, terraced in response to the slope of the frontage
- Gym on 2 levels, with breakout terrace for meeting and social activities
- Porte cochere and feature residential address landscape and street trees



Design Imagery

Image 10: The “Hub” and sample design imagery.

4.1.6 Design Excellence

Clause 7.7 of Council’s Local Environmental Plan 2012, in which the considerations for achievement of design excellence are raised, was a consideration in the development of the proposal. The proposal has been developed in recognition of these objectives. The Planning Proposal illustrates the broad parameters of the approach to development of the site and establishes the basis for fulfilment of design excellence considerations during development of the concept.

An outline of SEPP 65 considerations is provided in the Architectural Design Statement prepared by Krikis Tayler Architects.



Image 11: Buildings B, C, D and E in foreground with I and J in background.

4.2 Part 2 - Explanation of Provisions

This Part provides a more detailed explanation of how the objectives are to be achieved by means of amending The Hills Local Environmental Plan (LEP) 2012.

The proposed outcome, as previously proposed, will be achieved by changing the provisions that relate to the land zoned R4 High Density Residential within Lot 2013 DP 1176614 Solent Circuit, Baulkham Hills.

The Table 2 below compares the previously proposed amendments with those which are now proposed.

Table 2: Comparison of Previous and Proposed Amendments

Planning Control	Previous Proposal	Current Proposal	Comment
Zoning	Zone R4 High Density Residential	Zone R4 High Density Residential	No change
Building Height	RL 164m (24 Storeys)	RL 176m (26 storeys)	Increased height by 12m m – see Justification below
Floor Space Ratio	4.5:1	4.5:1	No change
Additional Permitted Land Uses	Include those additional uses permitted in a B1 Neighbourhood Centre Zone with consent	Include those additional uses permitted in a B1 Neighbourhood Centre Zone with consent	No change

Table 3 below compares the previously proposed site development metrics with those that are now proposed.

Table 3: Comparison of Previous and Proposed Development Metrics

Planning Control	Previous Proposal	Current Proposal	Comment
Site Area	4.818Ha Lot 2103	4.818Ha Includes Lot 2104 and 2105	No change
Dwellings *	1200	1040	Decrease by 13.3% or 160 dwellings
Density *	249 dwellings per Ha	216 dwellings per Ha	Decrease by 13.3% or 33 dwellings per Ha
Car Parking	NA	1761	Based on Traffic and Parking Report
Open Space – Landscaped Area	75% approx.	72%	Decrease by 4% resulting from additional design detail

*Including Watermark 99 dwellings and Haven 77 dwellings – Total = 176

4.2.1 Proposed Amendments

The current proposal seeks to:-

1. Amend The Hills LEP 2012 Height of Buildings Map to permit a maximum permissible height of RL176m (26 storeys). This represents an increase of 12m over the previous proposal for the tallest building. The increased height results from the concept derived from the architectural design and to create a more “organic and fluid” visual appreciation of building form.

The concept establishes nine towers that range in height from eight to twenty six storeys with an “iconic tower” building in the presentation. The heights of the buildings are varied to create an interesting interplay of forms. Organic qualities create an exciting and contemporary aesthetic that responds to the undulating topography of the site and its surrounds. The shapes and layered expression serve to integrate the tower forms with the podium and ground plane. Differentiation of the floor plate and balcony configurations within each tower creates dramatic sculptural form and implied movement. Roof top shaping under a floating leaf form completes the composition and is designed to encapsulate lift overruns and provide additional communal facilities in select buildings.

2. Amend The Hills LEP 2012 Floor Space Ratio (FSR) Map to show a Floor Space Ratio of 4.5:1. This FSR is sought to enable potential subdivision of lots for each of the tower buildings, while preserving a common central lot for communal open space. This is the same as the FSR sought in the previous proposal and justified for the same reason; and

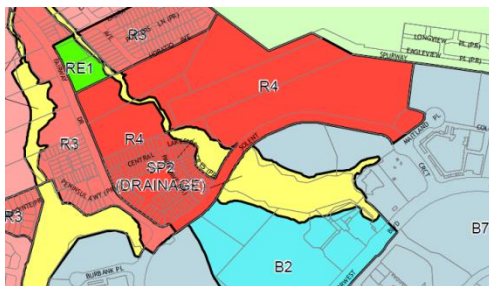
3. Amend:-

- The Hills LEP 2012 Schedule 1 – Additional Permitted Uses to include those additional uses permitted in a B1 Neighbourhood Centre Zone with consent, and
- The Hills LEP 2012 Additional Permitted Uses Map to include Lot 2015 DP 1201899 Solent Circuit, Baulkham Hills.

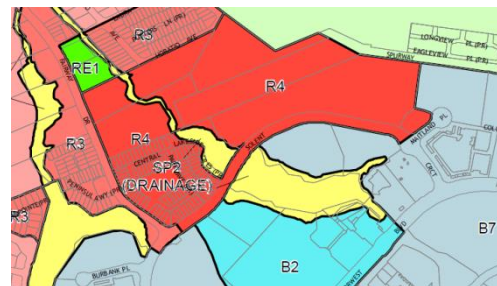
The purpose of this amendment is to permit land uses on the ground and lower levels to activate the street and provide a level of facilities and services expected for the convenience of residents and visitors. These facilities are to be located adjacent the link road and at ground level and partially above in Buildings B, C and D.

4.2.2 Mapping

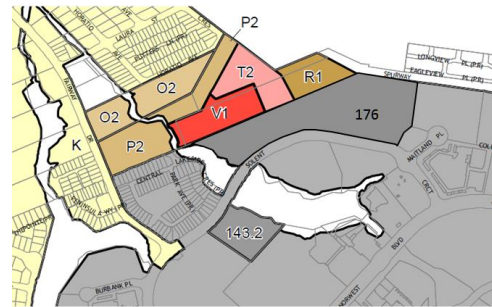
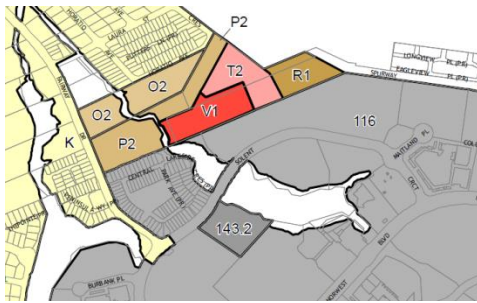
The Planning Proposal seeks the following mapping amendments:-



Existing Zoning – R4 High Density Residential



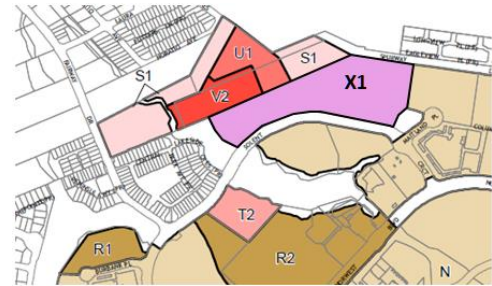
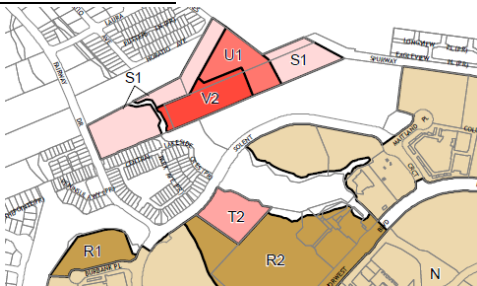
No change to zoning



Existing Building Height - RL 116m

Proposed Building Height – RL 176m

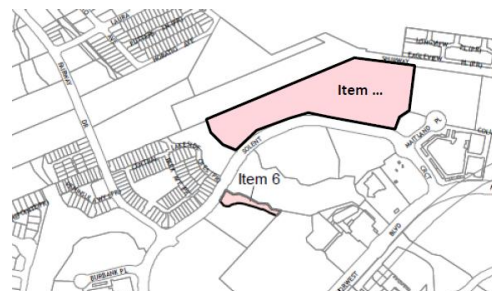
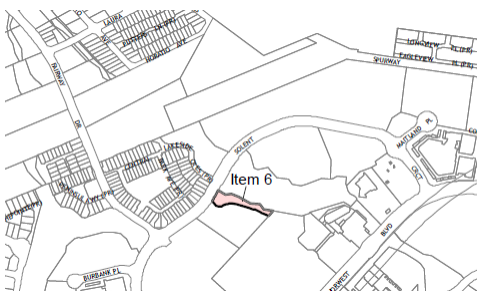
P2	18m
R1	21m
T2	27m
V1	36m



Existing FSR – No FSR for the subject site

Proposed FSR – 4.5:1 (X1)

S1	1.5
U1	2.6
V2	3.2



Existing Additional Uses - None for the subject site

Proposed Additional Uses – Uses permissible in B1 Neighbourhood Centre Zone

4.3 Part 3 - Justification

This amended Planning Proposal, at 1,040 dwellings, seeks to maximise the number of dwellings within 500 metres of the Norwest Rail Station and Norwest Town Centre and Business Park and so support the objectives of Transit Orientated Development. The proposal complies with the dwelling density identified by Council in Figure 4: Norwest Desired Outcomes – 216 dwellings per hectare. Further justification for the Planning Proposal is discussed in detail in Section 5.

4.4 Part 4 – Supporting Information

The supporting documents comprise:-

- **Architectural Statement** prepared by Krikis Tayler Architects.

This document describes the design philosophy behind the project particularly how built form has been developed with tower elements maximising ground level open space allowing the establishment of outstanding amenity for residents and visitors. Apartments are proposed to comply with Council's DCP requirements.

Design excellence is addressed through a concept of nine buildings creating a unique sculptural "organic" composition. This helps to achieve solar access and cross ventilation performance exceeding accepted standards. Both landscaped area and deep soil exceed Council standards – see Attachment A.



Image 12: Photomontage of "The Greens" and The Esplanade in the foreground.

- **Landscape Concept and Place Making Report** prepared by Site Image and Krikis Tayler.

This document sets out the vision for The Greens Common. The Greens Common is to create a series of open space parks and garden spaces that express the landscape heritage and cultural identity of 'The Hills' area. The masterplan layout and patterns has similarities with the overall urban and rural landscape of 'The Hills', with its waterways meandering through the undulating landform, and the landscape heritage having a distinctive mosaic pattern of land uses.

The distinctive contemporary landscape architecture and community buildings set in the landscape create highly distinctive parkland with a focus on providing extensive amenity and interaction. The

extensive open space, walkways and recreation opportunities encourage an active lifestyle with a focus on broad participation and interaction for residents, to create a strong sense of community belonging and shared identity – see Attachment B.



Image 13: Photomontage of Community Gardens and Family Area.

- **Traffic and Parking Report** prepared by TDG in association with Gennaoui Consulting.

This shows that all resident, tenant and visitor car parking can be provided on-site. An assessment of traffic generation shows the development will only marginally affect the level of service of all major roads to the site. In addition the proposed development would not adversely affect the current operation of the intersections of Norwest Boulevard with Windsor Road and of Solent Circuit with Fairway Drive. The site is within walking distance of the Norwest Metro Rail Station (under construction) which will have a significant impact on travel patterns and mode sharing – see Attachment C.

4.5 Part 5 - Community Consultation

Community consultation will be undertaken following the Gateway Determination process and in accordance with the Gateway conditions.

5. JUSTIFICATION

5.1 Need for the Planning Proposal

The genesis of the Planning Proposal stems from the State Government's decision making regarding infrastructure investment, namely the Northwest Rail Link and the strategic locational and development opportunities offered by Norwest Business Park. This follows decisions by previous State Government's to make a commitment to growth in Sydney's North West Sector with the Business Park at the apex of the Rouse Hill Development Area. With expansion of residential development into the region, employment opportunities and road improvements followed with the upgrade of Old Windsor Road, construction of the M2 toll road and bus T-way To Parramatta.

With continuing population growth in Sydney and the Sydney Metro North West, there is a unique opportunity for transformational change to occur around Norwest Town Centre capitalising on the metro and fulfilling the planning strategies that envisaged high density residential development in close proximity to employment with the ability to generate continued economic growth.

The strategic context for the Planning Proposal has been addressed in Section 3.

5.2 Relationship to Strategic Planning Framework

The table below compares the Planning Proposal for consistency with the relevant strategic planning framework – see Table 4.

Table 4: Relationship to Strategic Planning Framework

Item	Strategic Issue	Comment
1.	<i>Is the planning proposal consistent with the objectives and actions of the applicable regional or sub-regional strategy (including the Sydney Metropolitan Strategy and exhibited draft Strategies)?</i>	Yes – see section 3.
2.	<i>Is the Planning Proposal consistent with a Council's local strategy or other strategic plan?</i>	Yes – see section 3.
3.	<i>Is the Planning Proposal consistent with applicable State Environmental Planning Policies?</i>	The proposal does not raise any matters that would be inconsistent with, or prejudice the application of, the relevant State Environmental Planning Policies – see Table 5.
4.	<i>Is the Planning Proposal consistent with applicable Ministerial Directions (s.117 Directions)?</i>	Table 6 below provides an assessment of the Planning Proposal against the relevant Local Planning Directions issues by the Minister for Planning and Environment in accordance with Section 117 of the EP&A Act.

The table below compares the Planning Proposal for consistency with the relevant State Environmental Planning Policies – see Table 5.

Table 5: Applicable State Environmental Planning Policies

Relevant SEPP	Assessment	Comment
SEPP Exempt and Complying Development Codes	Consistent	Extent of application subject to future development
SEPP Infrastructure 2007	Consistent	Extent of application subject to future development
SEPP No. 60 Exempt and Complying Development	Consistent	Extent of application subject to future development
SEPP No. 55 Remediation of Land	Consistent	Extent of application subject to future development
SREP 20 Hawkesbury Nepean River	Consistent	Stormwater drainage and water quality to be addressed as part of future Development Applications
SEPP No.65 – Design Quality of Residential Flat Development	Consistent	See Architectural Design Statement

The table below compares the Planning Proposal for consistency with the relevant Section 117 Planning Directions – see Table 6.

Table 6: Assessment of Planning Proposal against relevant Section 117 Planning Directions

Direction	Comments	Consistent/Inconsistent												
1.1 Business and Industrial Zones	The Planning Proposal has no impact the amount of employment land currently zoned in the LGA for business and industrial uses. The proposal will however contribute to employment generating uses, such as business, offices and café/restaurant uses in the Hub. This Planning Proposal will have a positive impact on employment in both short and long terms by providing for mixed use development in the Norwest strategic centre. The proposal seeks to facilitate density and job creation by locating new housing adjacent to facilities and services which will increase the viability and patronage of the significant infrastructure investment in Sydney Metro Northwest.	Consistent												
2.3 Heritage Conservation	There are no items of environmental heritage on the subject site. Council’s LEP 2012 identifies two locally significant items and a conservation area in the vicinity namely:- <table><tr><th>Suburb</th><th>Item Name</th><th>Address</th><th>Property Description</th><th>Significance</th><th>Item No.</th></tr><tr><td>Baulkham Hills</td><td>Avenue of trees leading to Castle Hill Country Club</td><td>Spurway Drive, RMB 47–49 Windsor Road</td><td>Lot 2, DP 1160957 and Lot 101, DP 1176747</td><td>Local</td><td>I25</td></tr></table>	Suburb	Item Name	Address	Property Description	Significance	Item No.	Baulkham Hills	Avenue of trees leading to Castle Hill Country Club	Spurway Drive, RMB 47–49 Windsor Road	Lot 2, DP 1160957 and Lot 101, DP 1176747	Local	I25	
Suburb	Item Name	Address	Property Description	Significance	Item No.									
Baulkham Hills	Avenue of trees leading to Castle Hill Country Club	Spurway Drive, RMB 47–49 Windsor Road	Lot 2, DP 1160957 and Lot 101, DP 1176747	Local	I25									

	Baulkham Hills Windsor Road from Baulkham Hills to Box Hill Windsor Road Local 128							
	<table border="1"> <thead> <tr> <th>Name of Conservation Area</th><th>Identification on Heritage Map</th><th>Significance</th></tr> </thead> <tbody> <tr> <td>Bella Vista Homestead Complex</td><td>Shown by a heavy red line and hatched in red and labelled "C2"</td><td>State</td></tr> </tbody> </table> The Planning proposal has had regard to these items in terms of a built form with reduced building heights adjoining Spurway Drive, and large separation distances between buildings, which enables views from the apartments out over the adjacent lake, golf course and district beyond, whilst also preserving vistas into and through the site from various vantage points in the public domain. The Planning Proposal will not affect the conservation of these heritage items, and any impact will be further addressed at the Development Application stage.	Name of Conservation Area	Identification on Heritage Map	Significance	Bella Vista Homestead Complex	Shown by a heavy red line and hatched in red and labelled "C2"	State	Consistent
Name of Conservation Area	Identification on Heritage Map	Significance						
Bella Vista Homestead Complex	Shown by a heavy red line and hatched in red and labelled "C2"	State						
3.1 Residential Zones	The planning proposal retains the areas and locations of the existing residential zone. The Planning proposal will encourage variety in choice in housing, make efficient use of infrastructure and services, reduce consumption of land for housing, and associated urban development on the urban fringe, and satisfy design excellence objectives.	Consistent						
3.4 Integrating Land Use and Development	This planning proposal seeks to improve access to housing, jobs and services by walking and public transport, supporting the efficient and viable operation of public transport services.	Consistent						
5.9 North West Rail Link Corridor Strategy	This planning proposal supports TOD and intensifies development of the site, by promoting high density development consistent with the zoning and both the intent of the North West Rail Corridor Strategy and the planning controls in the Hills Corridor Strategy. This proposal, similar to the previous proposal, departs from the proposed character in the Precinct Plan with a design of buildings 8 to 26 storeys high rather than 7 to 12 storeys. For the reasons outlined in Section 3, 4 and 5 this is considered to be minor and not detrimental to the proposal. The proposal seeks an amended height control and new FSR control to facilitate the achievement of State and local government planning objectives.	Consistent on merit.						
6.1 Approval and Referral Requirements	The planning proposal is not identified as designated development and does not require concurrence, consultation or referral of any subsequent development applications, outside of normal assessment processes, should this planning proposal proceed to gazettal.	Consistent						

6.3 Site Specific Provisions	This Planning Proposal contains sufficient architectural detail to support the amendments sought. This Planning Proposal will result in amendments to the DCP in collaboration with Council and does not introduce unnecessarily restrictive site specific planning controls.	Consistent
7.1 Metropolitan Planning	The Planning Proposal capitalises on the unique and exciting opportunities provided by both State and Local Council strategic planning. This planning foresees Norwest as a strategic centre, centrally positioned on the soon to be operational Sydney Metro North West rail line, with direct links via two metro stations, Bella Vista and Norwest, to Sydney CBD, the airport and other metropolitan centres.	Consistent

5.3 Section C - Environmental, Social and Economic Impact

Is there any likelihood that critical habitat or threatened species, populations or ecological communities, or their habitats, will be adversely affected as a result of the proposal?

No. The subject site has been used for grazing purposes in the past, is currently un-occupied and is suitable for development. Development applications have been approved previously for part of the site. The Planning Proposal will not further affect the critical habitat or threatened species, populations or ecological communities, or their habitats.

Are there any other likely environmental effects as a result of the planning proposal and how are they proposed to be managed?

There are no likely adverse environmental effects or natural hazards, such as flooding, land slip or bushfire hazard, constraining the site.

Requisite facilities to support a new residential community are available in Marketown, locally and provision is also made for a range of services and facilities as part of the mixed use character to be established at the “Hub” as an early stage of the development.

Has the Planning Proposal adequately addressed any social and economic effects?

The Planning Proposal supports the economic growth and future direction envisaged by the NSW Department of Planning and Environment and Council for Norwest and economic growth in the region.

Significantly on-going investment in Norwest contributes to the achievement in “A Plan for Growing Sydney” (December, 2014), Direction 1.6 Expand the Global Economic Corridor and Direction 1.6 Grow Strategic Centres – providing more jobs closer to home. Development of Norwest Business Park, identified as a Specialised Precinct, is important on the metropolitan scale as a “city shaper” in Sydney’s future growth, while contributing to local goals for employment creation and supporting the development opportunities provided by the construction of the Norwest Rail Station as part of the North West Rail Link, and in encouraging greater use of public transport.

For these reasons the Planning Proposal will result in positive social or adverse economic effects should the Planning Proposal proceed.

5.4 Section D - State and Commonwealth Interests

Is there adequate public infrastructure for the planning proposal?

The Traffic Impact Report concludes that the proposal will only marginally affect the level of service of all major approach roads to the site. Solent Circuit would continue to operate at a Level of Service 'A'. Norwest Boulevard would continue to operate at a level of service 'C' or better during the morning and afternoon.

It is understood that the RMS and Council are planning to provide traffic signals at the two intersections of Solent Circuit with Norwest Boulevard which are currently required. The provision of traffic signals at these two locations would adequately cater for the traffic likely to be generated not only by the Planning Proposal, but also by other known developments such the Ice Skating site and developments within the Balmoral Estate.

What are the views of state and Commonwealth public authorities consulted in accordance with the Gateway determination?

The views of the State and Commonwealth public authorities will not be known until after the initial gateway determination. The determination will identify State agencies to be consulted regarding the rezoning proposal.

5.5 Future Supporting Studies

This Planning Proposal seeks to establish certainty over the long term development potential of the site and the plan to create a new residential community. It can be expected that the development of the proposed concept will inform and be supported by further studies, the preparation of a Development Control Plan or Staged Development Applications, commensurate with the additional level of detail required in future.

6. CONCLUSION

This amended Planning Proposal supports an increase in building height, adoption of floor space ratio (FSR) controls and the inclusion of additional land uses for the Site – Lot 2105 DP 1176614 – 38 Solent Circuit, Baulkham Hills for Mulpha Norwest. The only variation in terms of planning controls when compared to the previous proposal is an increase in building height by 12 metres.

The Planning Proposal seeks The Hills Shire Council's support for a site specific amendment to The Hills Local Environmental Plan 2012 for the following:

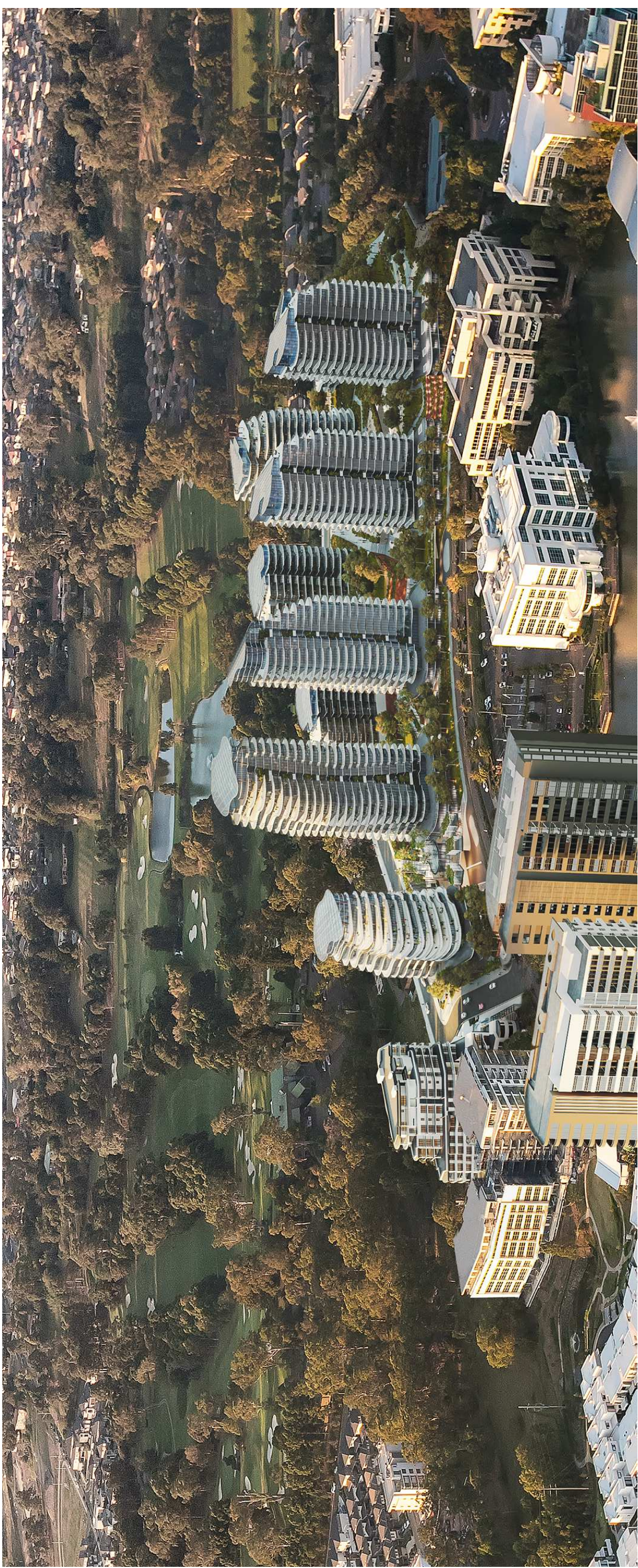
- i. Increase the Building Height under Clause 4.3 Height of Buildings from the current building height control of 116 metres to 176m;
- ii. Adopt a Floor Space Ratio (FSR) under Clause 4.4 Floor Space Ratio of 4.5:1; and
- iii. Include the following additional land uses for Lot 2105 – B1 Neighbourhood Centre Zone including Business premises; Child Care Centres; Health consulting rooms; Medical centres; Recreation facilities (indoors); Restaurants or cafes; Shops.

The benefits of this Planning Proposal are as follows:

- Provision for 1,040 dwellings (an increase of up to 712 dwellings over the approved Master Plan) within 500 metres of the proposed Norwest Rail Station, and Norwest Town Centre and Business Park, supporting transit orientated development;
- Activating the area after hours with mixed use development;
- Contributing additional jobs to meet the target for Norwest; and
- Providing housing in close proximity to the largest employment area in the North West of Sydney.

ATTACHMENTS

- A. Architectural Design Statement
- B. Landscape and Place Making Concept
- C. Traffic Assessment
- D. Survey



ARCHITECTURAL STATEMENT
in support of
REVISED PLANNING PROPOSAL SUBMISSION
NORWEST TOWN CENTRE

East Precinct – “The Greens”
Lot 2103, DP 1176614, Solent Circuit, Baulkham Hills.

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1.00 PLANNING PROPOSAL CONCEPT OVERVIEW

The Planning Proposal concept applies to the site known as “The Greens.” and supersedes the previous Planning Proposal Submission – Norwest Town Centre - East Precinct- “The Greens”, Revision E, dated 04 September 2014.

The planning proposal capitalises upon a unique and exciting opportunity to establish a vibrant residential town centre within 400m of the new Norwest Station. Rarely is there opportunity to achieve such a coherent ensemble of buildings, unified by an underlying consistency in the character and quality of the built form. The built form model that has been adopted eschews large footprint buildings in favour of slender tower forms of varying heights, which create an exciting sculptural silhouette and liberate an expansive ground plane that is used to establish an unprecedented level of amenity for residents and visitors to the site.

Tower shapes and placements maximise separation distances with consequent benefits in terms of solar access, natural ventilation and views. Importantly the tower placements enable views into and through the site from vantage points within the public domain.

The vision sets new standards for high density residential living, where both the built form and the landscaped open spaces are crafted to achieve the most desirable environment.

1.01 Context

The Greens site, known as Lot 2103, is 4.818 hectares, with frontage to Solent Circuit on the southern boundary and the future extension of Spurway Drive, to be known as Rosetta Road, along part of the northern boundary. The site’s topography features considerable fall. A high point exists in the north eastern zone with a fall of some 13m to the Solent Circuit frontage and the south western end of the site.

The Greens site is the subject of a current Masterplan Approval for 328 dwellings. However, in the context of the new Norwest Station and in order to create a modern and sustainable residential precinct that can support the employment opportunity in the broader Norwest precinct, the development potential for the site is considered to be greater than that described by the current Masterplan.

The western portion of The Greens site is the subject of a Development Application (DA 936/2014/JP) approved by the Joint Regional Planning Panel on 07 August 2014. It describes two residential apartment buildings; A1 and A2, with a total of 99 apartments and is known as “Watermark”, Stage 1 of The Greens. These two buildings are now under construction and due for completion before the end of 2016.

More recently another development application (DA 1560/2015/JP) was approved by the Joint Regional Planning Panel on 26 November 2015, for a third residential apartment building, with a total of 77 apartments and 400sqm of retail floor space at ground level. This building is known as “Haven” and is scheduled to commence construction in the third quarter of 2016.

These three buildings form an ensemble and complete the development of the portion of The Greens site that is west of the new north – south link road to be established within the site.

The majority of The Greens site’s northern boundary is common with another major development site known as the Spurway Drive site. Amendment 32 to The Hills Shire Local Environment Plan, recently approved for this site, allows up to 1,300 residential dwellings in buildings that range in height from 18m to 36m. The development potential of this adjacent site forms an important part of the contextual consideration for the subject site.

Another relevant development site, known as The Esplanade at 11-13 Solent Circuit is currently occupied by the Ice Skating Rink and is located south of the subject site with frontage to the southern shore of Norwest Lake. The current development application for this site proposes a mixed use residential and commercial development comprising 6,082m2 of podium commercial space and 267 residential dwellings in two towers of 16 and 19 storeys, up to 67m in height.



Aerial View of Site

1.02 The Planning Proposal - Masterplan Concept

This Planning Proposal revision does not seek to alter the configuration of buildings west of the link road, as they are either under construction or committed to construction. The revision to the Planning Proposal may be described as the vision for development of the most significant portion of The Greens site, east of the link road. The proposal for this 3.825 hectare portion of site establishes a high density residential development that delivers a variety of modern apartment types and townhouses within 400m of the new Norwest Station and in walking distance of the employment opportunities offered in the greater Norwest precinct.

The Greens is a rare opportunity to develop a high density residential precinct with a variety of co-ordinated built forms and an unprecedented quality of on site amenity. The exceptionally large site is proposed to accommodate nine separate buildings of varying heights and shapes, conceived with individual character, whilst exhibiting an underlying cohesive familial consistency of sculptural form.

Perhaps the most important aspect of the proposal is the relatively small proportion of the site that is designated for the building footprints and the consequent liberation of the ground plane for provision of an expansive landscape setting of unprecedented quality.

This approach to built form also delivers large separation distances between buildings, which enables views from the apartments out over the adjacent lake, golf course and district beyond, whilst also preserving vistas into and through the site from various vantage points in the public domain. The separation distances ensure good solar access to apartments as well as to the landscaped ground plane within the site and the public domain beyond the site.

Place Making

The Planning Proposal masterplan concept is distinguished by a unique landscaped environment, known as **The Greens Common**, which capitalises on the large site area and its topography. Landscape design combines with architectural form to create a variety of significant outdoor spaces, crafted to support an even greater variety of activities.

The Greens Common landscape theme is a celebration of the natural environment and the character for which The Hills is renowned. Exploitation of the site's topography creates interest and variety in the levels, sizes and shapes of outdoor spaces. Each space is different, characterised by the nature of activity it supports and the uses that adjoin it.

Place making design creates a hierarchy of carefully designed spaces to provide for a range of active and more passive pursuits. Publically accessible areas, activated with cafes, restaurants and other commercial activity, foster engagement with the broader community and the visiting public. Spaces with more limited access, such as a resort style pool area and more passive gardens provide communal areas to be shared by the residents. Private open spaces associated with ground level apartments and townhouses add to the variety and amenity of dwelling types.

The Greens Common landscaping and place making concept is described in the detail statement prepared by Site Image Landscape Architects.

The Greens concept offers not only the highest quality living environments for its residents, but a significant asset for the broader community that will foster a sense of pride and establish a new benchmark in residential development.



Precinct Plan

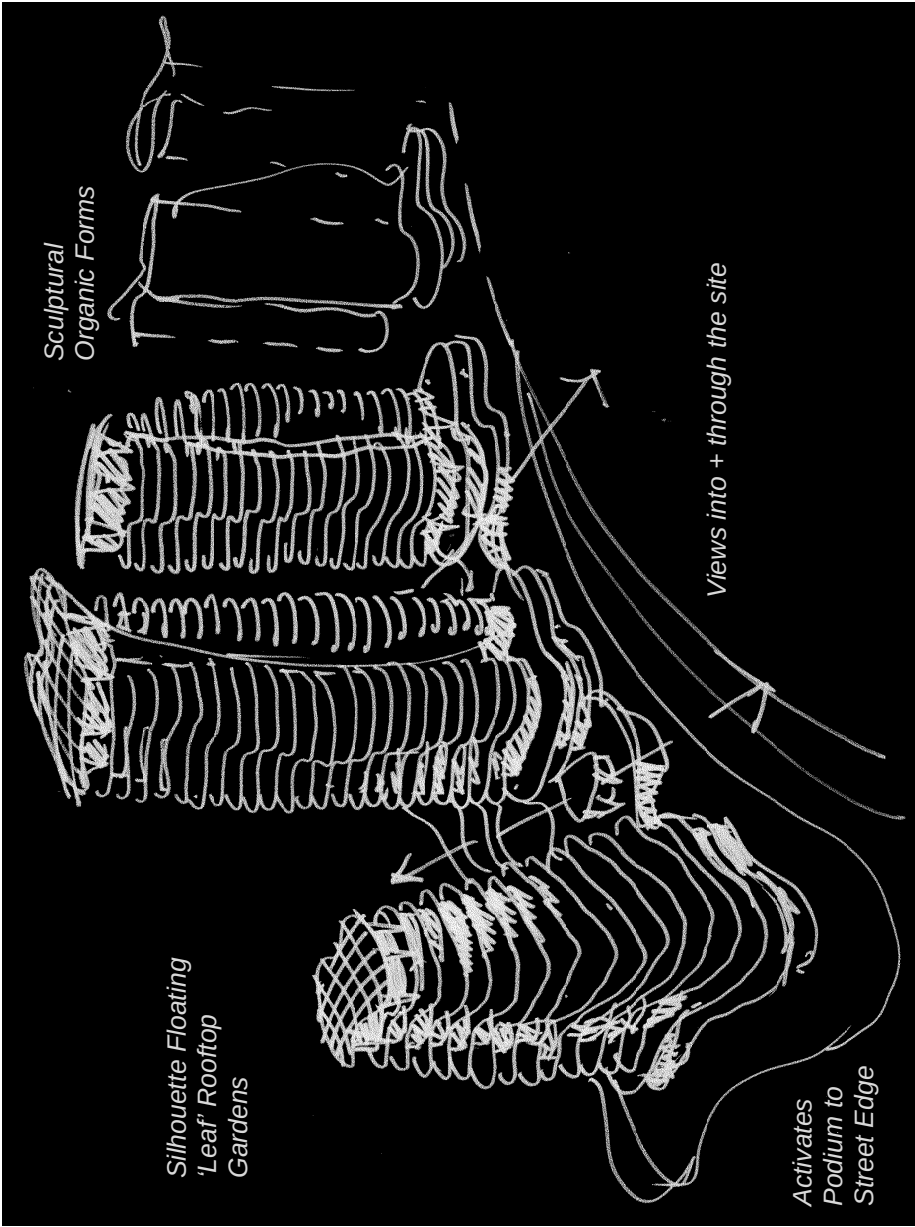
1.03 Built Form and Height

The concept is based upon the application of discrete tower forms with generous separation distances. Whilst care has been taken to achieve suitable definition of the site’s street frontages, the composition eschews large footprint buildings in favour of discrete tower forms, which serve to enable vistas into and through the site and to liberate a large expanse of ground plane, deriving fundamental benefits both within and beyond the site.

A Family of Buildings Creates a Unique Sculptural Composition.

The concept establishes nine towers that range in height from eight to twenty six storeys. The heights of the buildings are varied to create an interesting interplay of forms. Organic qualities create an exciting and contemporary aesthetic that responds to the undulating topography of the site and its surrounds. The shapes and layered expression serve to integrate the tower forms with the podium and ground plane. Differentiation of the floor plate and balcony configurations within each tower creates dramatic sculptural form and implied movement. Roof top shaping under a floating leaf form completes the composition and is designed to encapsulate lift overruns and provide additional communal facilities in select buildings.

Whether viewed as a silhouette from a distance or experienced at close quarters within the site, the consistent sculptural language establishes a strong familial relationship between the buildings and consolidates a unique ensemble composition. The Greens will excite with a distinct character and sense of precinct.



Built Form Concept



Facade Reference Images



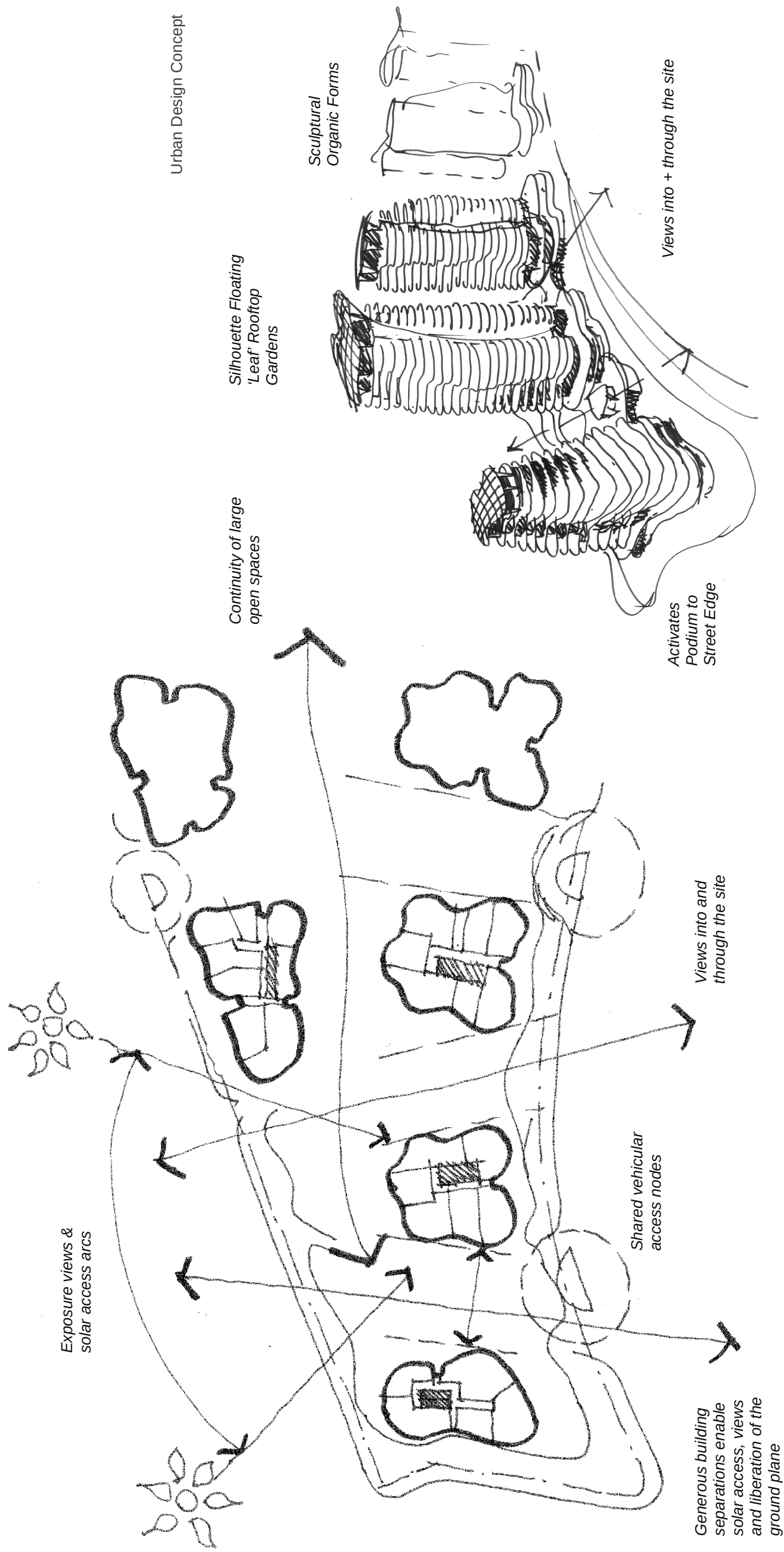
Roof Form Reference Images

Urban Design Considerations

Tower placements respond to key urban design considerations. Taller towers are located along the southern portion of the site, with lower forms to the north. This compositional approach maximises the number of apartments with good solar orientation and enables views over the golf course and back over Norwest Lake to be captured. The building heights and placements serve to maximise solar access to public, communal and private open spaces within the site and minimise overshadowing of the public domain and adjacent properties beyond the site.

The location of taller buildings along the Solent Circuit frontage, in the southern portion of the site, helps to reinforce the primacy of this key access route and lends clarity to the legibility of built form and the street network in the precinct. The towers transition into a 2 storey podium structure at the street front and incorporate townhouse and commercial uses, which serve to create an appropriately scaled and activated interface with the public domain.

The height of proposed buildings diminishes towards the north, providing a suitable relationship to surrounding built form and open space beyond. Once again, the lower two storeys of the tower forms differentiate to define the street front edge and offer a suitable scale and activity relationship to the public domain.



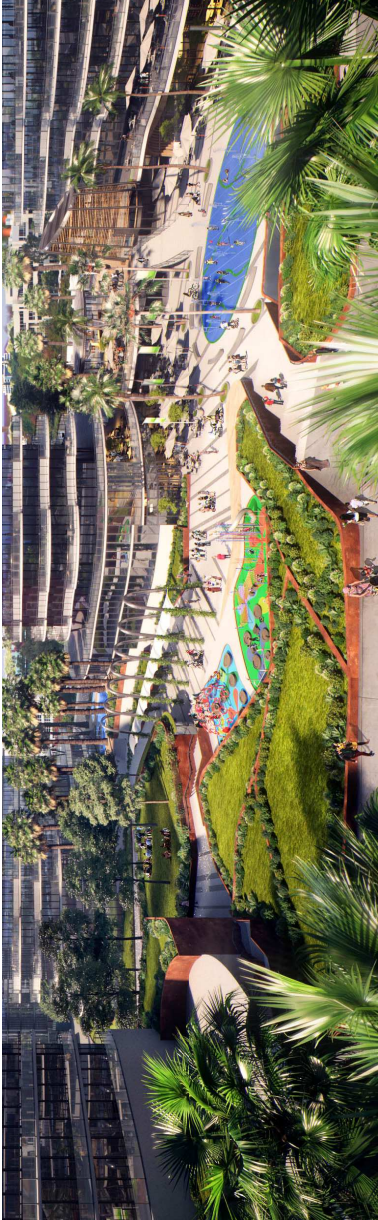
Liberation of the Ground Plane

Perhaps the most important feature of the tower composition is the liberation of an expansive ground plane that is used to establish a parkland setting, with unique qualities and amenity for visitors to the site and for residents. Landscaped settings are a hallmark of The Hills district, however The Greens Common landscape design sets new standards in place making and achieves an amenity that further differentiates the proposal from other forms of high density residential solutions.

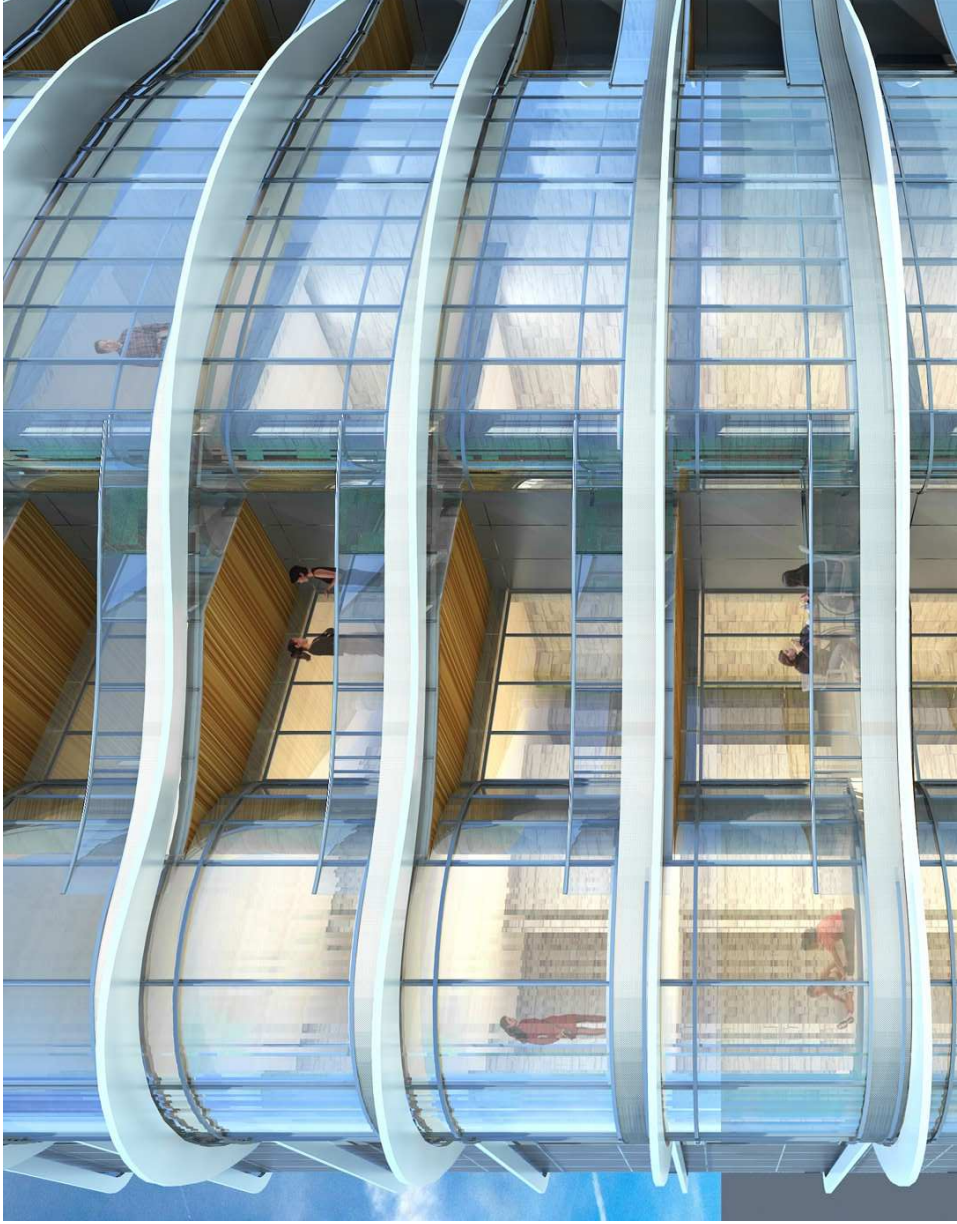
Activating Uses

A limited extent of retail and commercial space is incorporated around the Solent Circuit intersection with the new north-south link road, serving as a gateway into the precinct. These uses also feature at the base of Buildings A, B and C, sufficient to establish a critical mass of support facilities and activate the street frontage, as well as the publicly accessible “Hub” within the site

The architectural qualities of the built form and the inherent quality of the apartments within them, combined with the expanse and quality of the site’s open spaces, capitalises upon the site’s attributes and delivers a point of difference in the residential marketplace.



Perspectives of Communal Open Spaces / Design Reference Images



Design Reference Images

1.04 Residential Density

The Greens site is a total of 4.818 hectares. Application of 216 dwellings per hectare results in a potential 1040 dwellings across the site. There are a total of 176 apartments committed in Buildings A1, A2 and A3. A total of 864 dwellings are proposed for the portion of site east of the new link road, which includes 846 apartments in nine new tower buildings and 18 new town houses. This results in a total of 1040 dwellings for this part of the Norwest Town Centre.

1.05 Mixed Uses

Approximately 6,000m² of non residential space is proposed to serve as precinct support facilities. This includes 1,500m² business / offices, 500m² of café / restaurants, 1,000m² of neighbourhood shops, a 1,500m² gymnasium, 1,000m² of medical related uses and a 500m² childcare facility.

The extent of these facilities is considered to be an important complement to the established retail and commercial offerings in the greater precinct, providing readily available convenience services for the incoming residential population at The Greens. Equally importantly, they are considered to be an important ingredient in the activation of street frontages and the publically accessible portions of the site.

1.06 Floor Space Ratio (FSR)

A Floor Space ratio of 4.5:1 is sought for the portion of site east of the link road. This FSR enables the potential sub division into lots for each of the tower buildings, whilst preserving a common central lot for communal open space.

1.07 Pedestrian Access

The large site features a number of pedestrian access points that provide individual address points for each tower and achieve permeability into and through the site. The “Hub” portion of site incorporates a through site link facility between the Spurway Drive (Rosetta Road) frontage and the Solent Circuit frontage. A pedestrian link beneath Tower C connects the civic hub with the street front retail uses along the N-S link road, thus adding to the street activation.

1.08 Servicing and Vehicular Access

Whilst each building may be a separate stage of construction, access driveways may be shared and basements linked internally, thus limiting the number of driveway crossings and promoting efficient internal circulation.

Car parking is proposed in basements under each building and may be staged and linked. Vehicle access to the basement system in the southern portion of the site, serving Buildings B through to F, is proposed via Solent Circuit.

A new east west roadway is proposed as an extension of Spurway Drive through to Windsor Road and forms part of the development of the adjacent Spurway Drive site masterplan. It is understood this road will be called Rosetta Road. Access to the basement system in the northern portion of the site, serving buildings G through to J, is proposed via Rosetta Road.

A new north – south link road has been approved as part of the recent Development Approval for the Haven building and defines the western extent of the subject area of consideration within The Greens site. No vehicular access is proposed from the link road for any buildings east of the road.



Vehicular Access Diagram



Pedestrian Access Diagram

2.00 DESIGN EXCELLENCE

The planning proposal capitalises upon a unique and exciting opportunity to establish a vibrant residential precinct within 400m of the new Norwest Station. Rarely is there opportunity to achieve such a coherent ensemble of buildings, unified by an underlying consistency in the character and quality of the built form. The built form model adopted eschews large footprint buildings in favour of slender tower forms of varying heights, which create an exciting silhouette and liberate an expansive ground plane that is used to establish an unprecedented level of amenity for residents and visitors to the site. The vision sets new standards for high density residential living, where both the built form and the interstitial spaces are crafted to achieve the most desirable environment.

We refer to Clause 7.7 of Council's Local Environmental Plan 2012 in which the considerations for achievement of design excellence are outlined. The proposal has been developed in recognition of these objectives. The masterplan proposal illustrates the broad parameters of the approach to development of the site and establishes the basis for fulfilment of design excellence considerations during development of the concept.

The following fundamental design excellence considerations are evident in the masterplan concept.

- Sculptural towers establish a basis for high quality architectural resolution with sculptural qualities and a familial consistency that achieves a unique precinct character.
- Variation in height and shape combined with placement of tower envelopes achieves modulation of built form and suitable relationship to context.



Design Imagery

- Discrete tower envelopes preserve view corridors into, through and out from the site.
- Tower envelopes and perimeter basement locations maximise deep soil and liberate the ground plane, enabling an expansive landscape setting, consistent with the theme for which The Hills district is renowned.
- Podium formed by townhouses, retail and commercial uses, reinforces definition of the streetscape and achieves suitable scale relationship and activation of the public domain along Solent Circuit and the new north – south link road.
- Podium formed by differentiated apartments along Rosetta Road reinforces definition of the streetscape and achieves suitable scale relationship and activation of the public domain.
- Tower placements preserve solar access to adjacent building and those that are the subject of development application.
- Tower placements and shapes enable façade orientations which maximise solar access to apartments, observing passive solar design principles.
- Tower separation distances minimise overshadowing within and beyond the site, thus maximising solar access to the communal open spaces and the public domain.
- Provision for suitable pedestrian and cycleway network in and around the site.
- Provision for suitable car parking and servicing infrastructure.
- Provision for the principles of ecologically sustainable development to be achieved.
- Detailed resolution subject to site specific Development Control Plan.



Perspective View

3.00 SOLAR ACCESS/ OVERSHADOWING

3.01 Solar Access

The tower envelope shapes, placements and separation distances have been designed to enable façade orientations which maximise solar access to apartments, observing passive solar design principles and achieving a positive response to SEPP 65 and the Apartment Design Guide (ADG) criteria. At least 70% of the dwellings shall receive a minimum of 2 hours sunlight access between the hours of 9.00am and 3.00pm in mid winter. The solar access at other times of year improves further upon this performance.

A small number of townhouses are located along the Solent Circuit frontage where they enjoy views to the lake. The south orientation of these townhouses is mitigated through adoption of a central courtyard format which enables permeation of natural light to each level of the townhouse. South facing dwellings represent fewer than 15% of the total apartment numbers, however they benefit from desirable outlook over Norwest Lake.

The placement of the building envelopes has also been designed to preserve solar access to adjacent buildings.

As may also be appreciated from the diagrams, the majority of the communal open space remains sunlit throughout the day.

We refer to Solar Access Diagram Drawings PP13 and PP14.

3.02 Overshadowing

The shadow diagrams describe the shadows cast by the building envelopes at hourly intervals between 9.00am and 3.00pm in mid winter. As may be appreciated from these diagrams, as well as the 3D solar access diagrams referenced previously, there is limited overshadowing of buildings within the site.

The discrete tower envelopes enable penetration of sunlight onto large portions of the communal open space throughout the day.

The site is located on the northern side of Solent Circuit and is relatively remote from buildings located on properties to the south, by virtue of the width of Solent Circuit. As such overshadowing impacts are diminished. The separation distances between the discrete tower forms proposed, ensures that large continuous shadows are avoided and that sunlight penetrates to beyond the site throughout the day.

The subject site is located south of an adjacent major development site known as the Spurway Drive site. The proposal has no overshadowing impact upon the planned development of this neighbouring site.

The eastern most building envelope proposed on the subject site (Building F) has been designed to minimise overshadowing impact upon the adjacent site to the east.

The placement and shape of building envelopes at the western end of the subject site (Buildings B and C) have been designed to minimise overshadowing impact upon the portion of site further to the west, where three buildings known as A1 and A2 (Watermark) and A3 (Haven) form Stages 1 and 2 of The Greens.

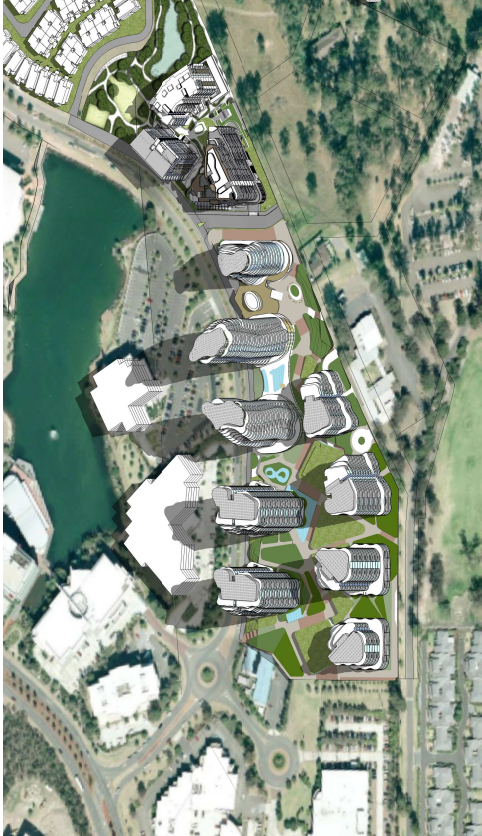
The proposal has been carefully designed in order to minimise shadow impact upon adjacent and nearby properties, as well as upon the public domain.

We refer to Shadow Diagram Drawings PP11 and PP12

Shadow Diagrams – Winter Solstice



June 21 – 9 am



June 21 – 12 noon



June 21 – 3 pm

4.00 SUMMARY

The proposal is considered to offer a unique, high density residential environment in an expansive landscaped setting that is consistent with the established theme for which The Hills is renowned and which contributes the highest quality residential amenity to serve the growth of the Norwest Town Centre.



Perspective View

SEPP 65 ASSESSMENT

Design Quality Principle 1: Context

There is limited existing building fabric to inform contextual relationship. The precinct is in transition towards it's desired future character. The majority of adjacent properties are the subject of planning proposal masterplan approvals or development applications which define high density residential developments. The Greens will set a new benchmark for residential architecture and high quality living environment. The development concept accords with the desired future character of the precinct as articulated in Council's planning controls, including the current LEP and DCP, as well as the Norwest Structure Plan.

The proposal features discrete building forms which serve to offer vistas into and through the site, as well as out from the apartments and the communal open space within the site. The tower forms enable liberation of large areas of the site which are proposed to be landscaped, thus perpetuating the landscaped theme for which The Hills district is renowned and relating positively to the open space of the adjacent golf course and landscaped theme evident throughout Norwest.

Vehicle and pedestrian access points are grouped logically relative to the surrounding street network, adding clarity to the legibility of the buildings and the streetscape.

Design Quality Principle 2: Scale

The design proposal reinforces the street alignments to Solent Circuit using two storey townhouse forms and commercial uses which achieve a suitable streetscape scale and activation whilst serving as a transition to the tower forms which are setback from the street frontage. A new north – south link road is flanked by retail and commercial uses which step up the slope to preserve street activation and achieve a suitable streetscape scale and transition to the tower forms beyond. This retail activated street frontage is similar to that on the opposite side of the link road, recently approved as part of Building A3 (Haven)

The composition of tower envelopes is varied in height, in order to promote an interesting silhouette on the skyline and a scale progression from the 9 storey Watermark Buildings A1/A2 and the 12 storey Haven Building A3 at the southern end of the site up to a 26 storey building in the central zone and diminishing down to 8 storeys at the north eastern end of the site. The composition of envelopes will combine with suitable façade articulation to achieve a scale and character that is appropriate to the residential use.

The landscape has been designed to integrate with the architectural form, whilst establishing a fine grain of form and material that adds amenity and delight to the communal and public open spaces.



Perspective View

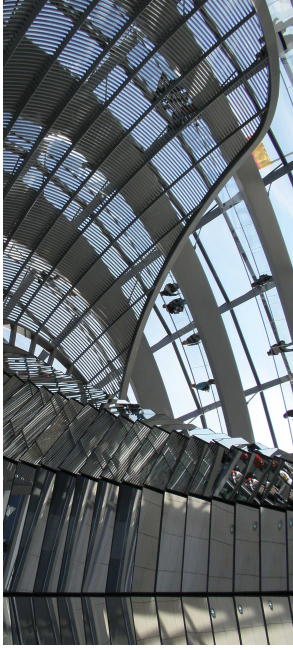
Design Quality Principle 3: Built Form

The built form features townhouse and retail/commercial uses in 2 storey envelopes which reinforce the street alignment and achieve activation along the Solent Circuit frontage and that of the new north-south link road. A differentiated 2 storey base to tower envelopes at the Rosetta Road northern frontage defines the street edge.

Generous separations between the discrete towers enable vistas into and through the site and allow the landscape character to prevail at the street frontages and to be evident within the site.

The residential tower envelopes are shaped in response to optimum solar orientation whilst generous building separations preserve sunlight into the site and beyond. The envelopes capitalise upon view opportunities and achieve high levels of residential amenity. The tower envelopes and placements create an ensemble of related sculptural forms which reinforce a sense of precinct.

The discrete tower envelopes also liberate the ground plane to enable creation of a unique landscaped domain within the site that relates positively to the theme of buildings in a landscaped setting for which The Hills Shire is renowned.



Design Reference Images

Design Quality Principle 4: Density

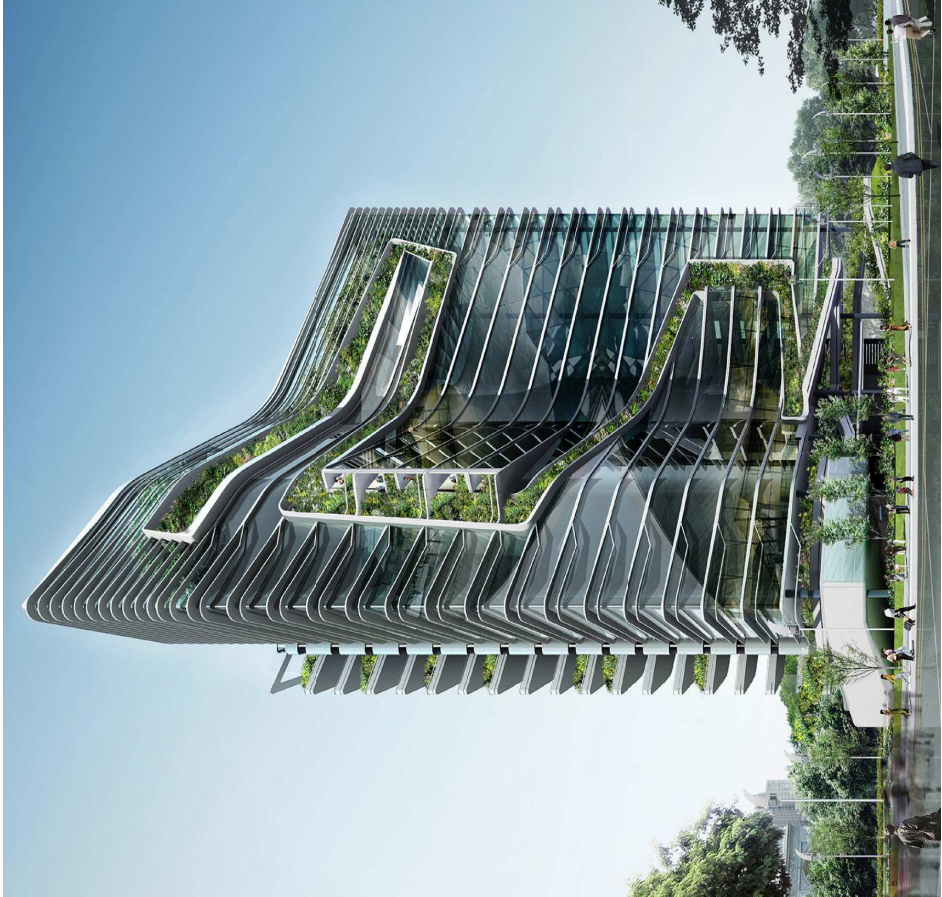
The density of the proposal is considered to be consistent with the desire to intensify the provision of high quality residential accommodation in close proximity to the Norwest Station transport hub and to the employment opportunity offered within the greater Norwest precinct. The provision of well designed apartments in a unique, high quality landscaped setting contributes towards the maturation of Norwest as a modern live work hub.

Design Quality Principle 5: Resource Energy and Water Efficiency

The proposal incorporates passive solar design principles, such as appropriate orientation for good solar access, protection of openings for appropriate shading and natural cross flow ventilation, to minimise energy usage for indoor comfort.

The proposal will utilize appropriate sustainable materials, harvested rainwater for irrigation and efficient appliances, fixtures and fittings that minimise use of resources.

The landscaped area represents over 70% of the site area and will feature a variety of permeable surfaces and appropriate low maintenance species reliant upon low levels of irrigation.



Design Reference Images



date	24 June 2016	0016-1614-3.18-NT-nt
project	Norwest Town Centre – East Precinct – “The Greens”	

Design Quality Principle 6: Landscape

The landscape design is described in detail in the design statement prepared by Site Image Landscape Architects. Built form features efficient basements, restricted to zones beneath buildings. Discrete tower forms maximise the available ground plane and the extent of deep soil. Deep soil represents approximately 35% of the site area. Additional planting is established over basement structure, thus expanding the effective landscaped area to over 70% of the site area. The landscape design has been developed to integrate with and enhance the built form, respond to topography and offer a high level of residential amenity.

The park like setting perpetuates the theme for which the Hills Shire is known. A differentiation of the landscape into a number of themed areas will cater for a variety of passive and active recreation activities, as well as enable the incorporation of sustainable initiatives such as a communal produce garden, enabling residents to cultivate their own fruit and vegetables.

A variety of surfaces, textures and built forms within the landscape provide opportunity for passive recreational activities such as BBQ areas, and locations for smaller more intimate seating spaces. These hard landscape areas are combined with large lawn areas and soft landscape which provides a variety of passive and active recreational spaces for residents' use. The shapes and forms are organically inspired and offer a range of experiences within a distinctive landscape.

Planting density, height, colour & texture is varied to help differentiate the primary circulation paths, provide screening & privacy where needed, creating vistas to focal points elsewhere in the development whilst also providing active and passive spaces and separation of the private open spaces associated with ground level apartments.

Subtle lighting will ensure night time safety and contribute to the ambience and attractiveness of the landscape. Much of the landscape is founded over deep soil, including the buffer landscaping featured within the streetfront setback zones.



Precinct Plan – Landscape Design

Design Quality Principle 7: Amenity

The building envelopes foster apartment layouts within each building which optimise the orientation of living areas and balconies to north, east and west aspect and views towards the golf course green space and the surrounding neighbourhood. South facing townhouses will maximise permeation of natural light and ventilation, whilst capitalising on the outlook towards Norwest Lake.

The proposal includes a variety of efficient one, two and three bedroom apartment layouts which are predominantly flat plate configurations. The townhouse formats add diversity to the offer and foster a commensurate mix of people in the resident population.

Typical floors of each building feature natural lighting and potential for natural ventilation of lift lobbies and common area corridors. Corridors are well articulated and observe accessibility requirements.

Communal rooms are provided at the ground level of each building with direct access to the landscaped communal open space. A wide range of passive and active recreational activities are catered for in the landscaped grounds, fostering socialisation and a sense of community. Additional communal space is offered at rooftop level where roof canopies and glazed screens provide weather protection.



Perspective View

date	24 June 2016	0016-1614-3.18-NT-nt
project	Norwest Town Centre – East Precinct – “The Greens”	

Design Quality Principle 8: Safety and Security

The proposal optimises passive surveillance of the public domain through incorporation of active uses at the street frontages and at the ground level interface with the communal open spaces within the site. The proposal enables distinction between public, communal and private domains, with well identified entry points.

Retail and commercial uses activate the “Hub” and the street levels of the new link road frontage. The “Hub” serves as a meeting place and adds to the passive surveillance of the public domain as well as increasing pedestrian movements in and around the site. The building shapes maximise visual permeability and access into and through the site. Through site link(s) between Solent Circuit and Rosetta Road form part of the public pedestrian network and feature direct pathways, good natural light by day and artificial lighting at night.

Access to residential lobbies and residential parking shall be security controlled.

Access to the communal open spaces located at the ground shall be available to residents and their visitors. The place making design of the communal landscaped spaces provide clear distinction between communal spaces and the adjacent private courtyards associated with ground level apartments. Pathways feature clear sight lines and are well lit after hours. There are no dead ends and a variety of alternate access and egress points. Landscaping is used to add clarity to the landscape zones, differentiating the active and more passive spaces. The higher level apartments overlook the communal open space, providing a high degree of passive surveillance and resulting safety. Townhouses along the Solent Circuit frontage create activation and achieve passive surveillance of the street.

Design Quality Principle 9: Social Dimensions

A mix of apartment configurations, sizes and price points will provide suitable amenity for a variety of occupants, from singles, to couples and families. The variety of apartment types will appeal to owner occupiers, as well as to investors who will make rental stock available, further contributing to the mix of users. This will promote movement of people to the site for a variety of reasons throughout the day and night, adding interest, activation and safety.

The retail and commercial components add further reason for residents and visitors to move around the site, providing meeting places and enhancing opportunity for social interaction. The landscape design achieves a variety of communal open spaces as well as enclosed spaces, fostering an even greater variety of activities that will offer socialization, recreation and relaxation. Other features such as community rooms in each building offer further amenity and the opportunity for residents to come together and build a sense of community and belonging.

The visual and physical connection between the on site open spaces, the retail commercial hub and the public domain within and around the site fosters engagement with the broader community. The provision of a through site pedestrian link furthers integration with the fabric of the surrounding precinct.

The size and nature of this residential development will contribute significantly to the intensification of activity and diversification of uses in this part of Norwest, capitalising upon proximity to the station and offering much needed residential accommodation that is close to the employment opportunities offered in the broader Norwest precinct. Such intensification will lead to extended hours of use and interaction with a consequent improvement to social dimensions and safety within the precinct.



Perspective View

Design Quality Principle 10: Aesthetics

The composition of building envelopes achieves a desirable urban design outcome, where sculptural building forms create an exciting composition. The buildings present different features from every angle, creating interest and implied movement. The composition achieves a varied silhouette on the skyline, transitioning suitably from the height of surrounding buildings.

The scale and character of the buildings shall be developed to express their residential use and define a suitable human scale. Use of façade elements such as hoods, screens, separation blades, balconies and balustrade variations will contribute to the resolution of practical considerations whilst also achieving a sculptural façade modelling and character. Key lines will relate the façade composition of the partner buildings, creating an underlying consistency and sense of precinct, whilst preserving unique qualities for each building.

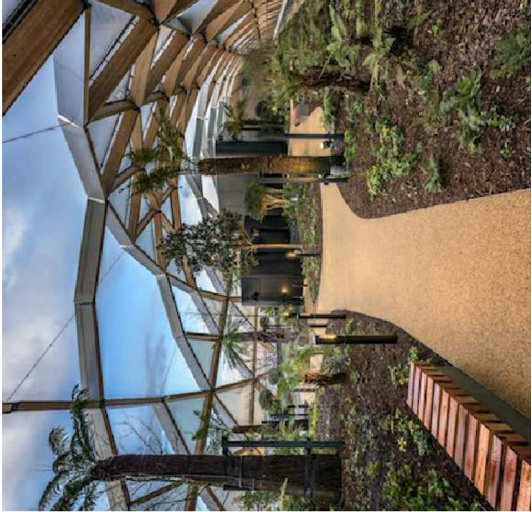
The application of high quality materials and finishes will reinforce the architectural forms and add to the fine grain to achieve a robust, timeless character that is an honest expression of the building function and a positive contribution to the streetscape, communal spaces within the site and the broader (macro) urban scale.



Design Reference Images



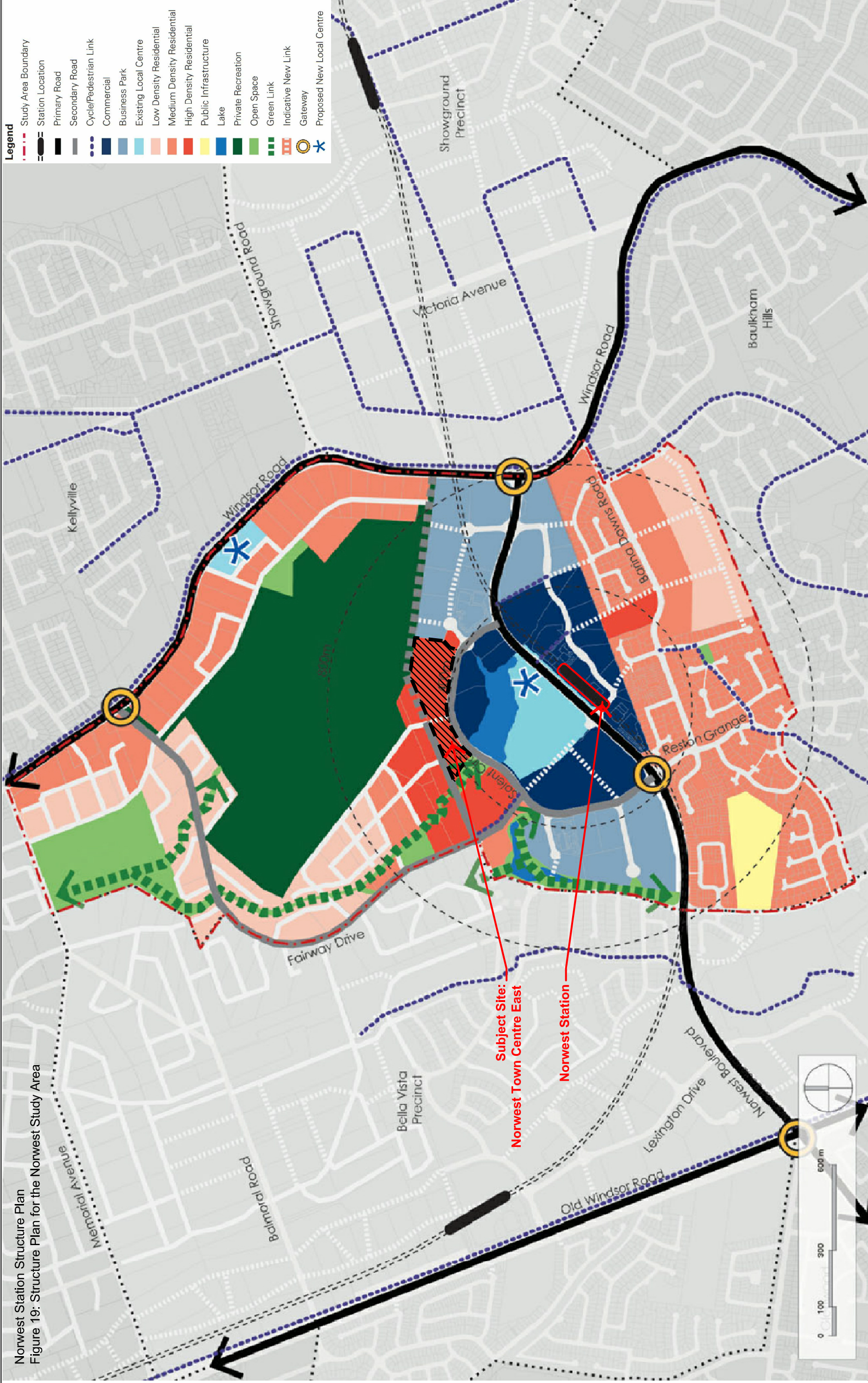
Perspective View Showing Perforated Roofs Completing Tower Forms



Perforated Roof Form Design Reference Images

APPENDIX A: ARCHITECTURAL DRAWINGS

Norwest Station Structure Plan
Figure 19: Structure Plan for the Norwest Study Area

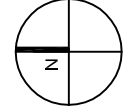


Legend

- Study Area Boundary
- Station Location
- Primary Road
- Secondary Road
- Cycle/Pedestrian Link
- Commercial
- Business Park
- Existing Local Centre
- Low Density Residential
- Medium Density Residential
- High Density Residential
- Public Infrastructure
- Lake
- Private Recreation
- Open Space
- Green Link
- Indicative New Link
- Gateway
- Proposed New Local Centre

PLANNING PROPOSAL

NORWEST TOWN CENTRE
EAST PRECINCT - 'THE GREENS'
LOT 2103, DP 1176614, SOLENT CIRCUIT, BAULKHAM HILLS



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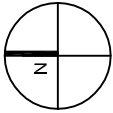
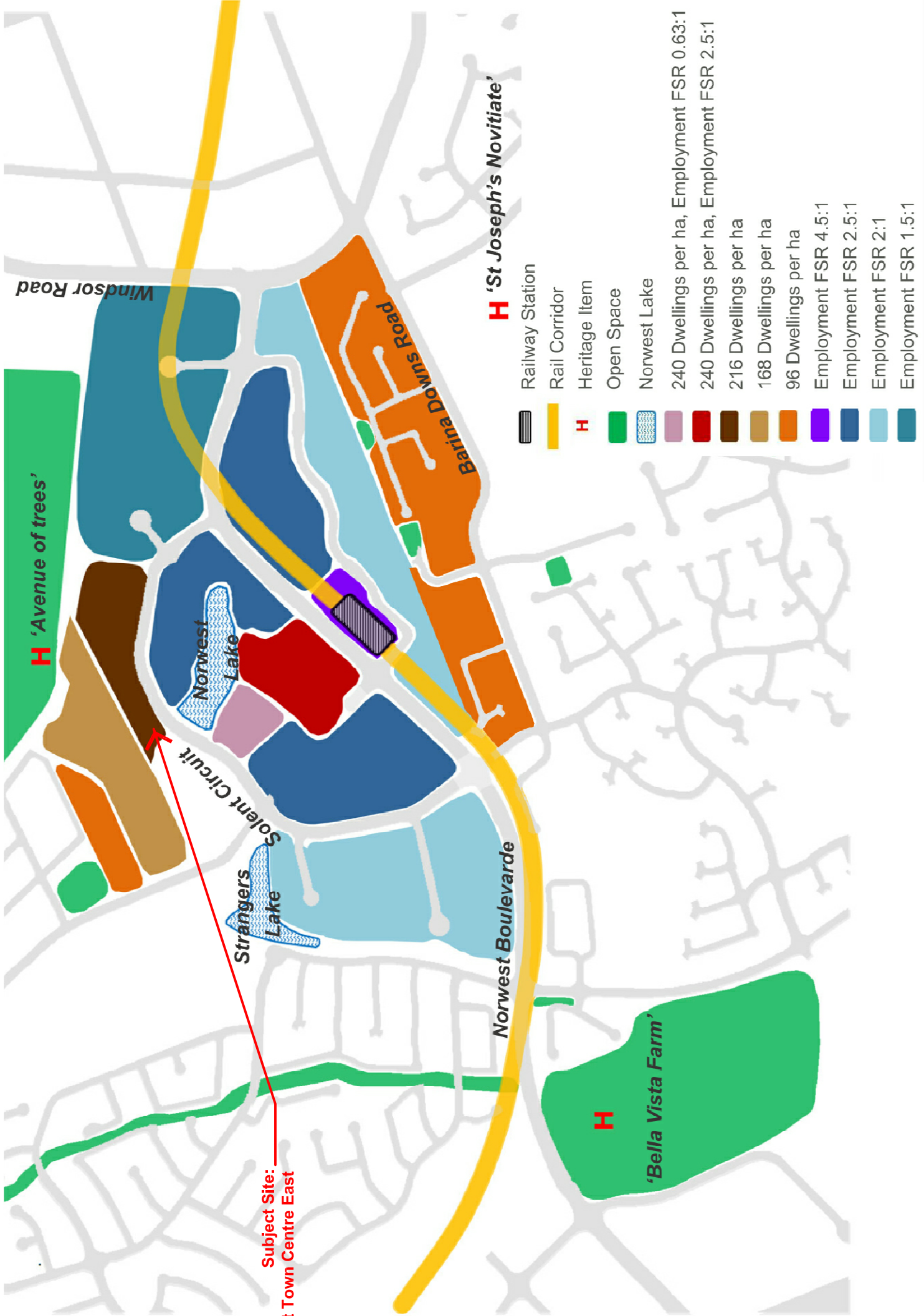
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NORWEST STRUCTURE PLAN
SITE CONTEXT

PROJECT NO. 1614
DRAWING NO. PP01
ISSUE B

DATE 30/06/2016
SCALE N.T.S.

The Hills Corridor Strategy
Figure 9.4: Norwest Desired Outcome



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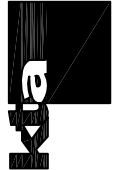
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NORWEST TOWN CENTRE EAST PRECINCT - 'THE GREENS'

LOT 2103, DP 1176614, SOLENT CIRCUIT, BAULKHAM HILLS

NORWEST STRUCTURE PLAN SITE LOCATION

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PROJECT NO.	DRAWING NO.	ISSUE
1614	PP02	B

DATE 30/06/2016
SCALE N.T.S.

PLANNING PROPOSAL

50mm

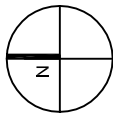
100mm

150mm ON ORIGINAL



Legend

- 1. Town Centre East
- 2. Town Centre Central
- 3. Town Centre West
- 4. Proposed Railway Station
- 5. Bella Vista Farm Park



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NORWEST TOWN CENTRE EAST PRECINCT - 'THE GREENS'

LOT 2103, DP 1176614, SOLENT CIRCUIT, BAULKHAM HILLS

NORWEST TOWN CENTRE
LOCATION PLAN

ARCHITECT



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a level 7 97 pacific highway
north sydney nsw 2060
m po box 726 north sydney nsw 2059
p +61 (0)2 9900 6000 f +61 (0)2 9900 6001
w www.krikistaylor.com.au

DATE 30/06/2016
SCALE N.T.S.

PROJECT NO. DRAWING NO. ISSUE

1614	PP03	B
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PLANNING PROPOSAL

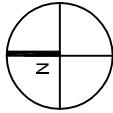
150mm ON ORIGINAL

100mm

50mm

Primary Objectives

- Building Orientation - To maximise solar access
- Dwelling Variety - Apartments and townhouses
- Solent Circuit - Visually iconic buildings
- Building Separation - Visual permeability
- Maximum Green Space
- Visually Stimulating Living Environment
- Pedestrian Permeability
- Commercial / Retail Gateway



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PROPRIETOR

NORWEST TOWN CENTRE EAST PRECINCT - 'THE GREENS'

LOT 2103, DP 1176614, SOLENT CIRCUIT, BAULKHAM HILLS

MASTERPLAN CONCEPT PLAN & PRIMARY OBJECTIVES

ARCHITECT



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PROJECT NO.

1614

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PP04

ISSUE

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PLANNING PROPOSAL

150mm ON ORIGINAL

100mm

50mm



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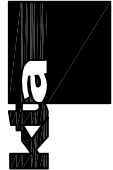
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PROJECT NO. 1614
DRAWING NO. PP05
ISSUE B

ARCHITECT



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50mm

100mm

150mm ON ORIGINAL

A3

	Total Units / Building	Building Height (m)
Town Centre East Precinct St 1	99	33
Town Centre East Precinct St 2	Building A3	38
	Building B	52
	Building C	87
	Building D	76
	Building E	67
	Building F	64
	Building G	28
	Building H	47
	Building I	40
	Building J	28
Town Houses	18	6
TOTAL	1040	

EAST PRECINCT
STAGE 1

BUILDING A1
(approved)
8 storeys
RL: 102.50

BUILDING A2
(approved)
9 storeys
RL: 106.60

BUILDING A3
(approved)
12 storeys
RL: 117.10

BUILDING B
15 storeys
RL: 135.00

BUILDING C
26 storeys
RL: 176.00

BUILDING D
22 storeys
RL: 163.00

BUILDING J
8 storeys
RL: 122.00

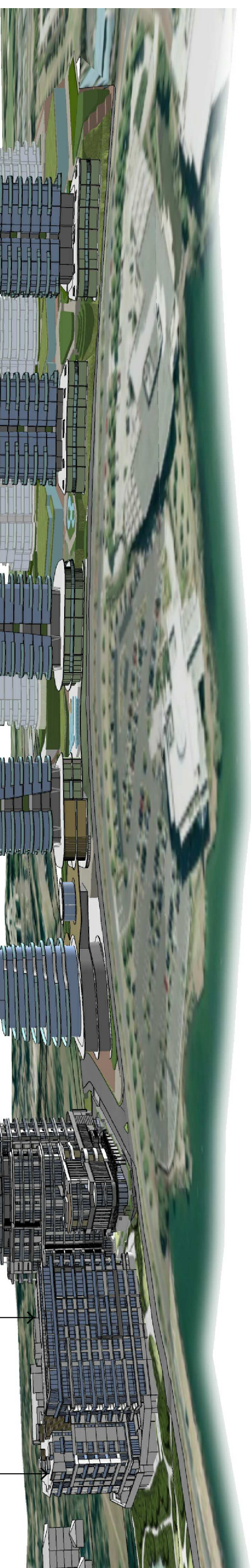
BUILDING I
12 storeys
RL: 134.00

BUILDING H
14 storeys
RL: 141.00

BUILDING E
20 storeys
RL: 153.00

BUILDING F
18 storeys
RL: 146.00

BUILDING G
8 storeys
RL: 122.00



PLANNING PROPOSAL

NORWEST TOWN CENTRE
EAST PRECINCT - 'THE GREENS'
LOT 2103, DP 1176614, SOLENT CIRCUIT, BAULKHAM HILLS

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BUILDING HEIGHTS AND STATISTICS

PROJECT NO. 1614
DRAWING NO. PP06
ISSUE B

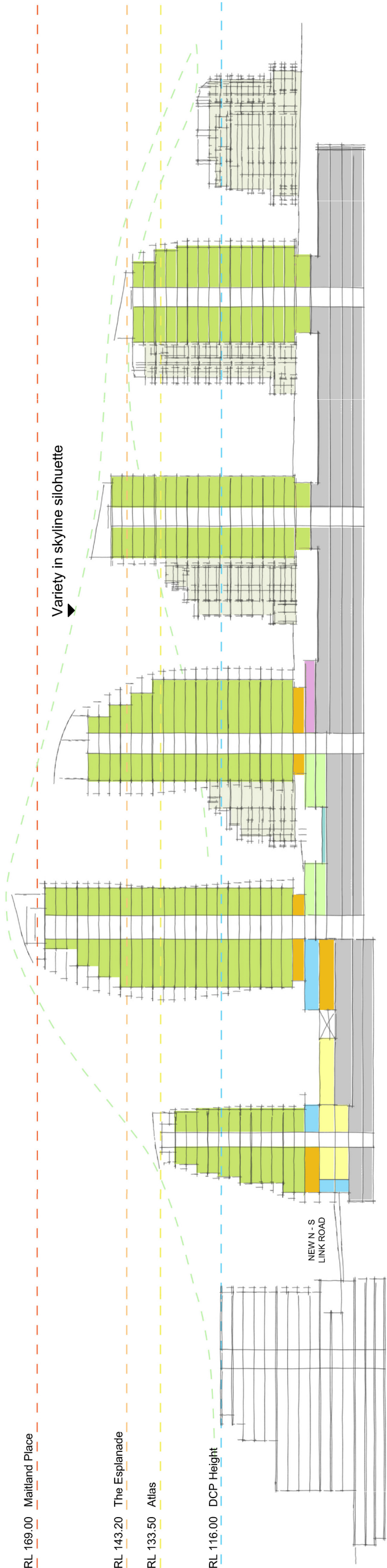
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150mm ON ORIGINAL

100mm

50mm



BUILDING A3 (Approved) Top of Building RL: 117.10	BUILDING B Top of Building RL: 135.00	BUILDING C Top of Building RL: 176.00	BUILDING D Top of Building RL: 163.00	BUILDING E Top of Building RL: 153.00	BUILDING F Top of Building RL: 146.00	BUILDING G Top of Building RL: 122.00
			BUILDING J Top of Building RL: 122.00	BUILDING I Top of Building RL: 134.00	BUILDING H Top of Building RL: 141.00	

- Retail
- Commercial
- Car Parking
- Childcare
- Gym
- Residential Apartments / Town Houses

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LOT 2103, DP 1176614, SOLENT CIRCUIT, BAULKHAM HILLS

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ARCHITECT

EAST WEST SECTIONAL DIAGRAM BUILDING HEIGHT

PROJECT NO.

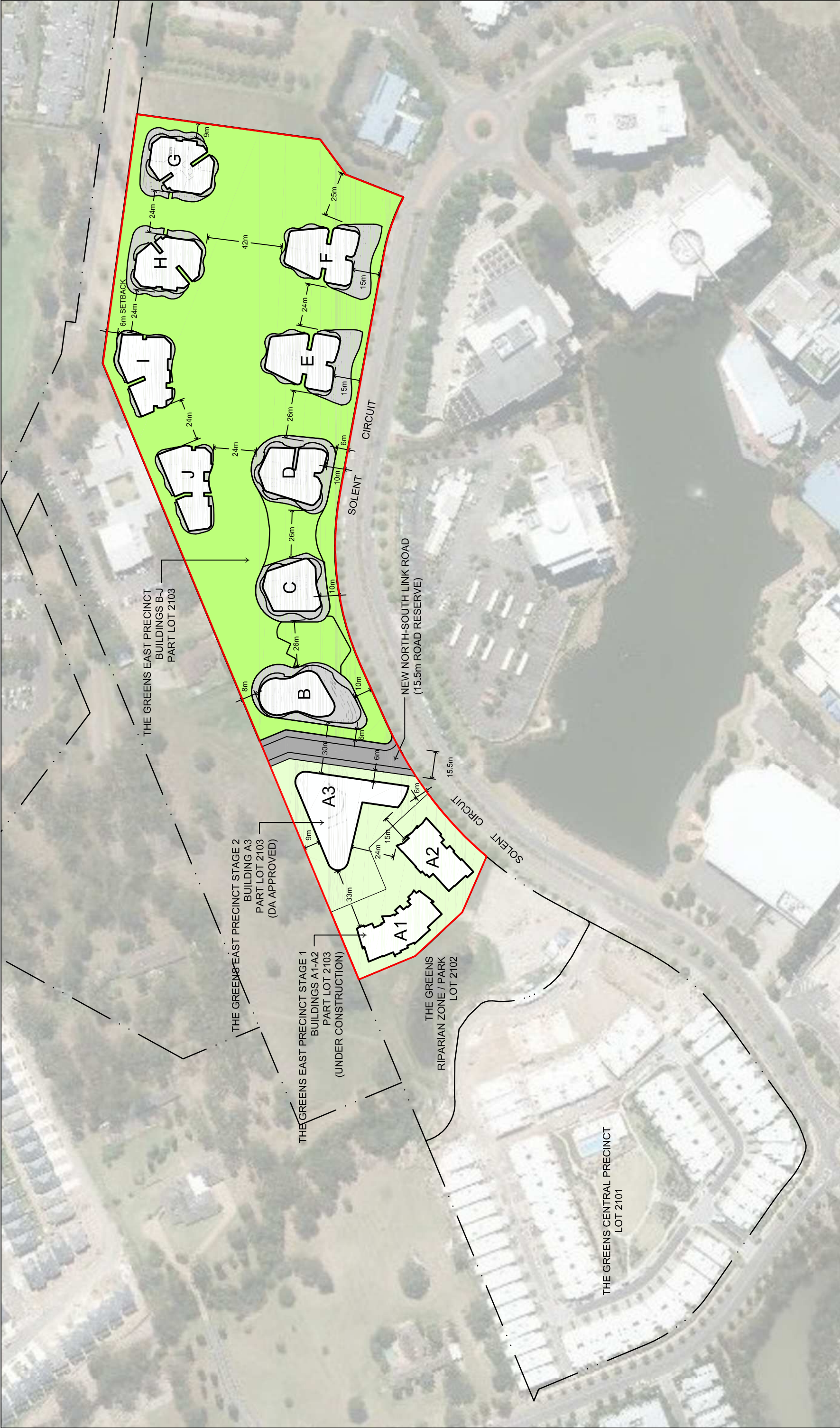
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PLANNING PROPOSAL

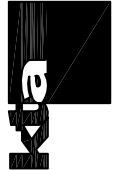
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EAST PRECINCT - 'THE GREENS'

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PROJECT NO.	DRAWING NO.	ISSUE
1614	PP08	B



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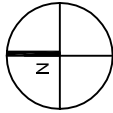
BUILDING SEPARATIONS AND SETBACKS

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NORWEST TOWN CENTRE EAST PRECINCT - 'THE GREENS'

LOT 2103, DP 1176614, SOLENT CIRCUIT, BAULKHAM HILLS

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PROJECT NO. DRAWING NO. ISSUE

1614

PP09

B

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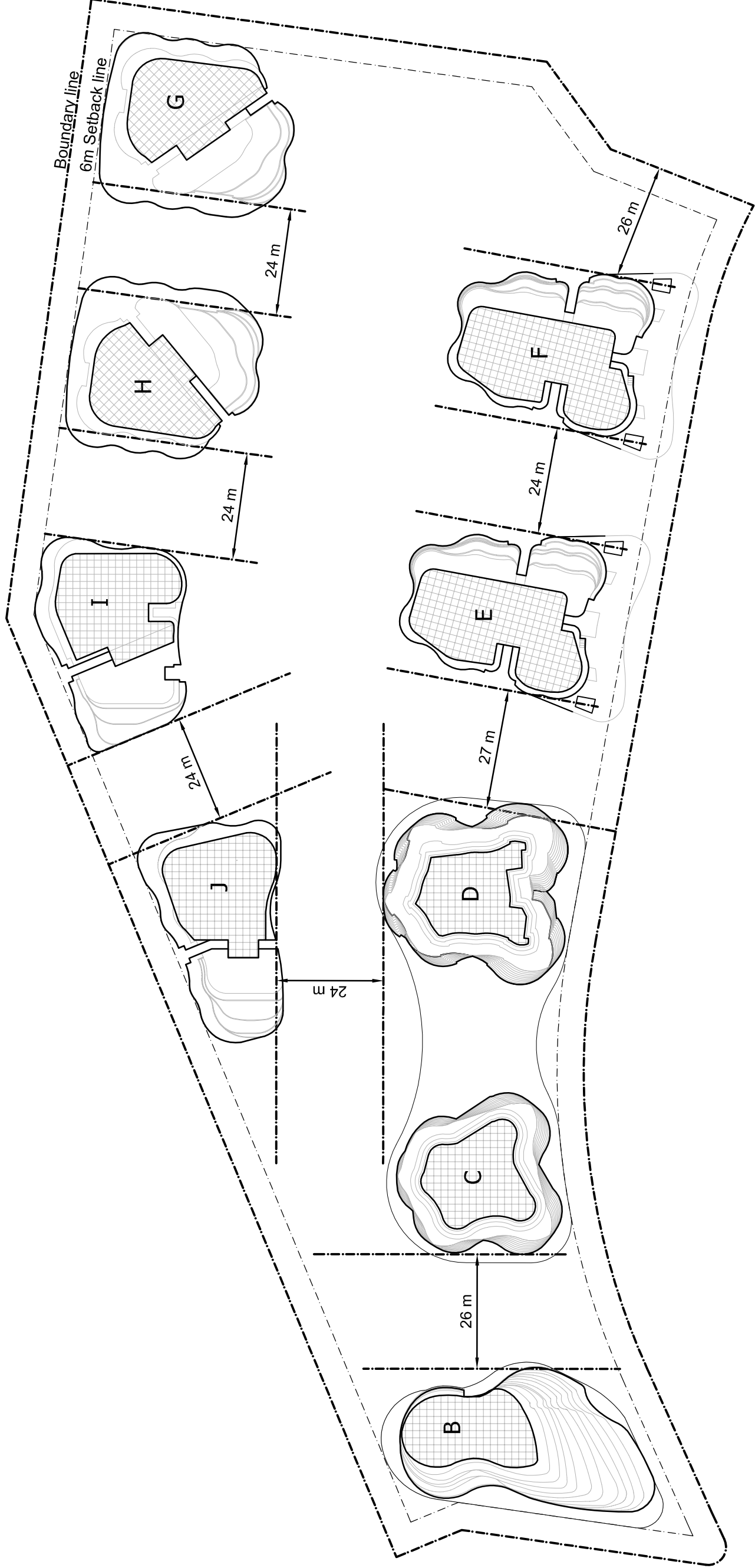
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TYPICAL FLOOR PLAN

150mm ON ORIGINAL

100mm

50mm



PLANNING PROPOSAL

NORWEST TOWN CENTRE
EAST PRECINCT - 'THE GREENS'

LOT 2103, DP 1176614, SOLENT CIRCUIT, BAULKHAM HILLS

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PROJECT NO. 1614
DRAWING NO. PP10
ISSUE B

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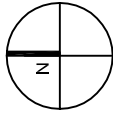
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ROOF PLAN

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150mm ON ORIGINAL

100mm

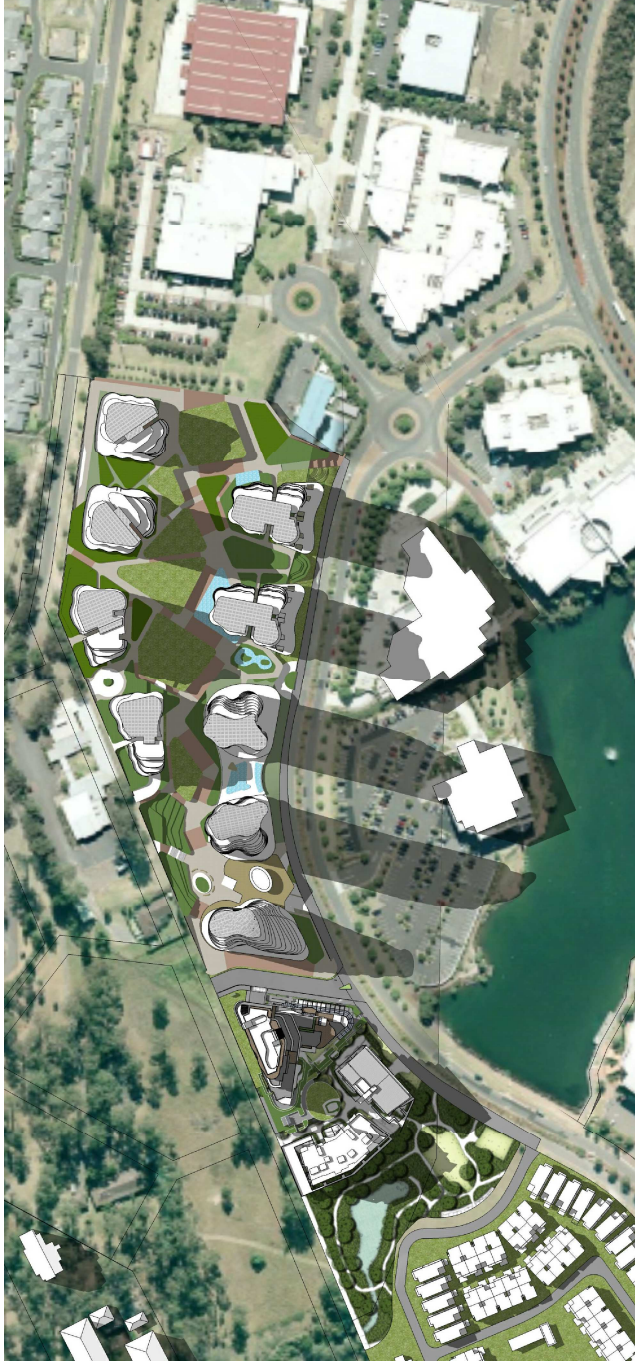
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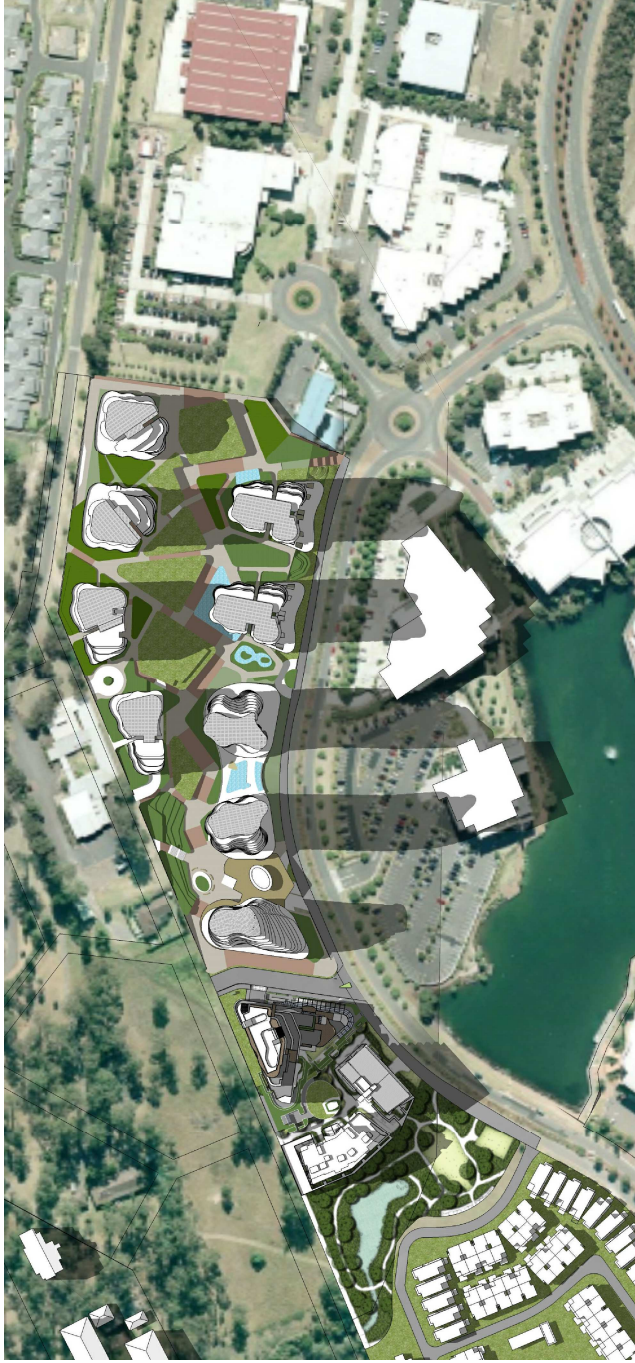
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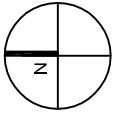
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03 21 JUNE - 11 am



04 21 JUNE - 12 noon



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SHADOW DIAGRAMS
WINTER SOLSTICE

NORWEST TOWN CENTRE EAST PRECINCT - 'THE GREENS'

LOT 2103, DP 1176614, SOLENT CIRCUIT, BAULKHAM HILLS

PLANNING PROPOSAL

DATE 30/06/2016
SCALE N.T.S.



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ARCHITECT

PROJECT NO. 1614
DRAWING NO. PP11
ISSUE B



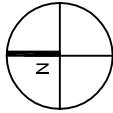
01 21 JUNE - 1 pm



02 21 JUNE - 2 pm



03 21 JUNE - 3 pm



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LOT 2103, DP 1176614, SOLENT CIRCUIT, BAULKHAM HILLS

SHADOW DIAGRAMS
WINTER SOLSTICE

ARCHITECT



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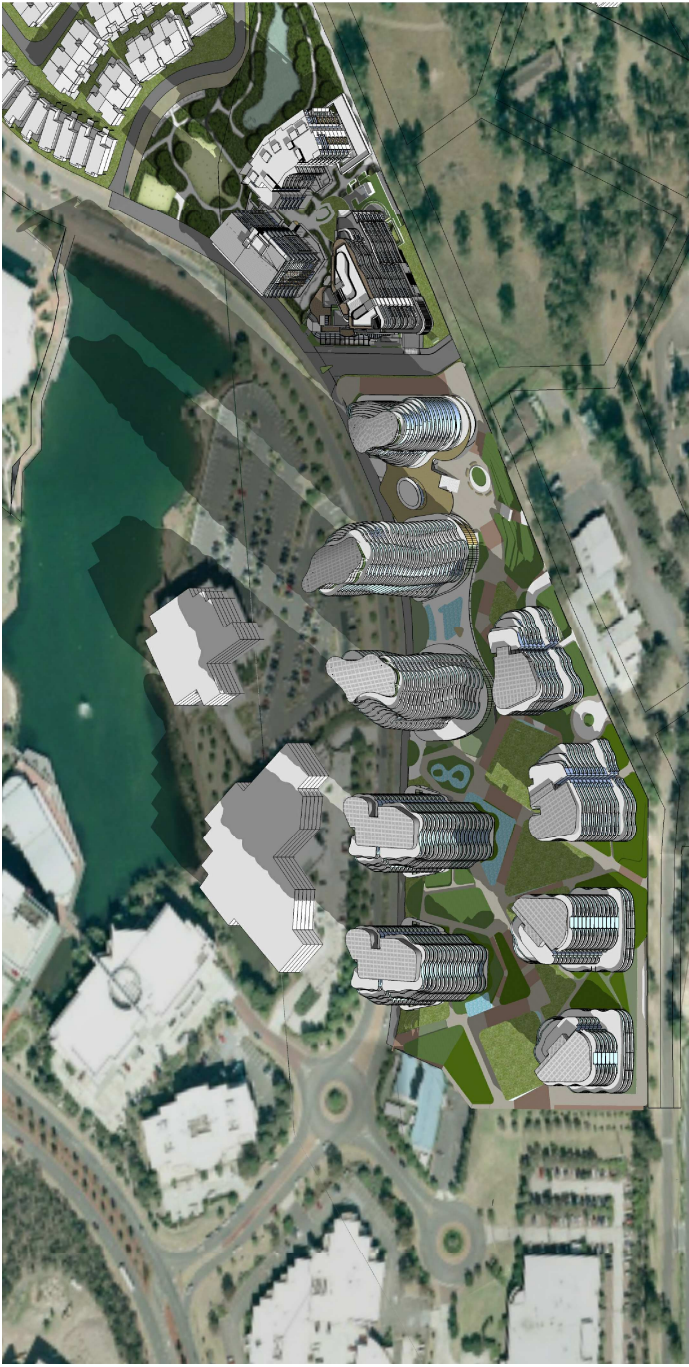
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PROJECT NO. 1614
DRAWING NO. PP12
ISSUE B

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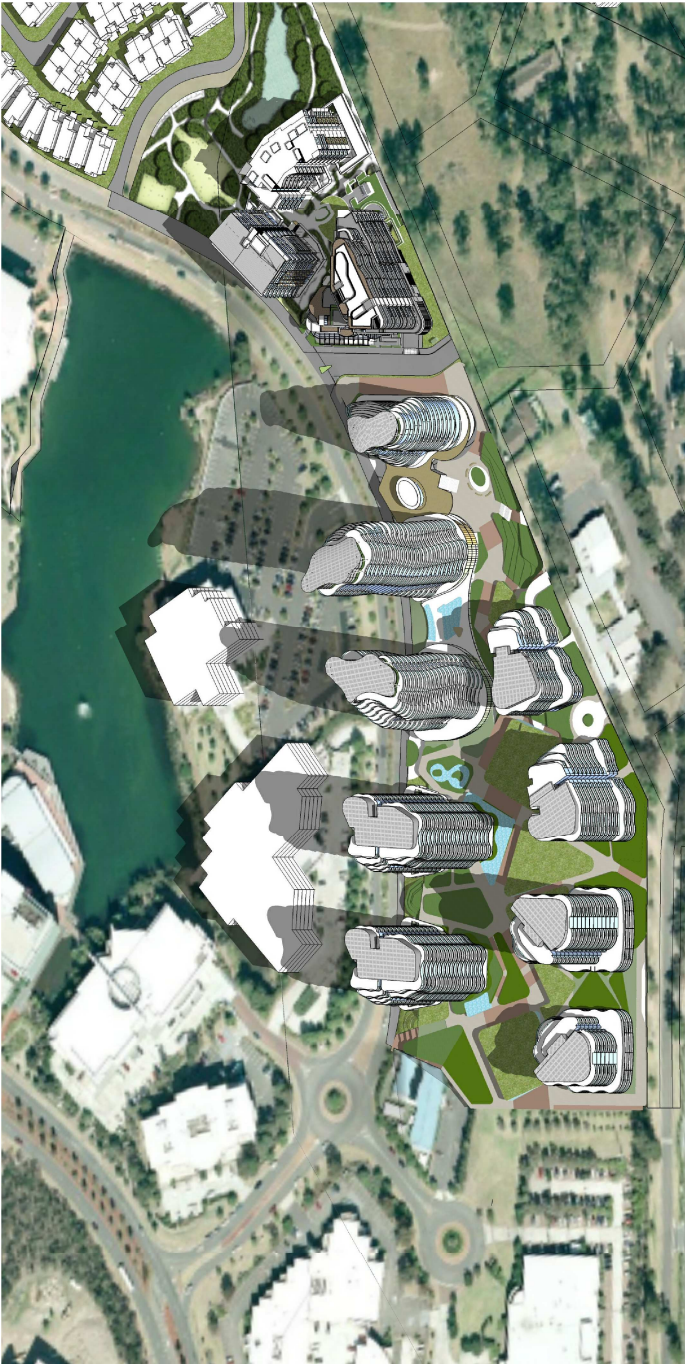
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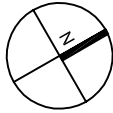
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03 21 JUNE - 11 am



04 21 JUNE - 12 noon



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SOLAR ACCESS DIAGRAMS - 3D

WINTER SOLSTICE

ARCHITECT



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PROJECT NO.

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PP13

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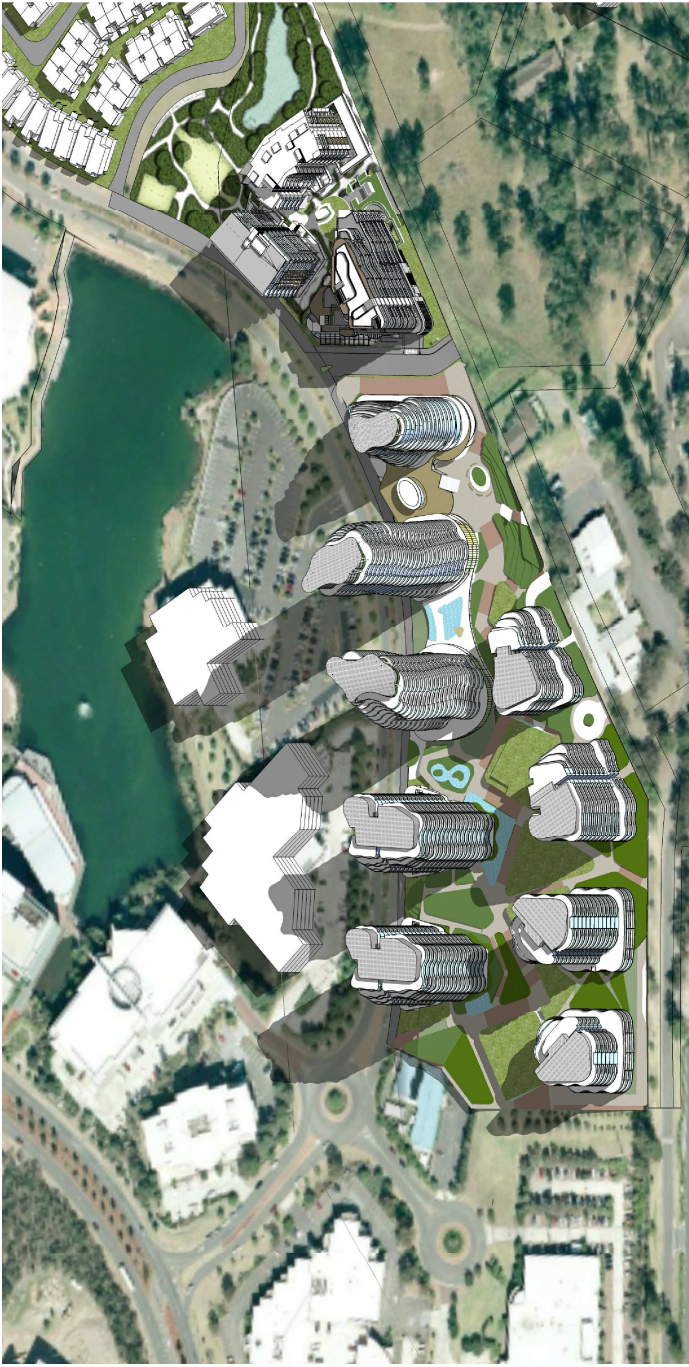
SCALE N.T.S.

PLANNING PROPOSAL

50mm

100mm

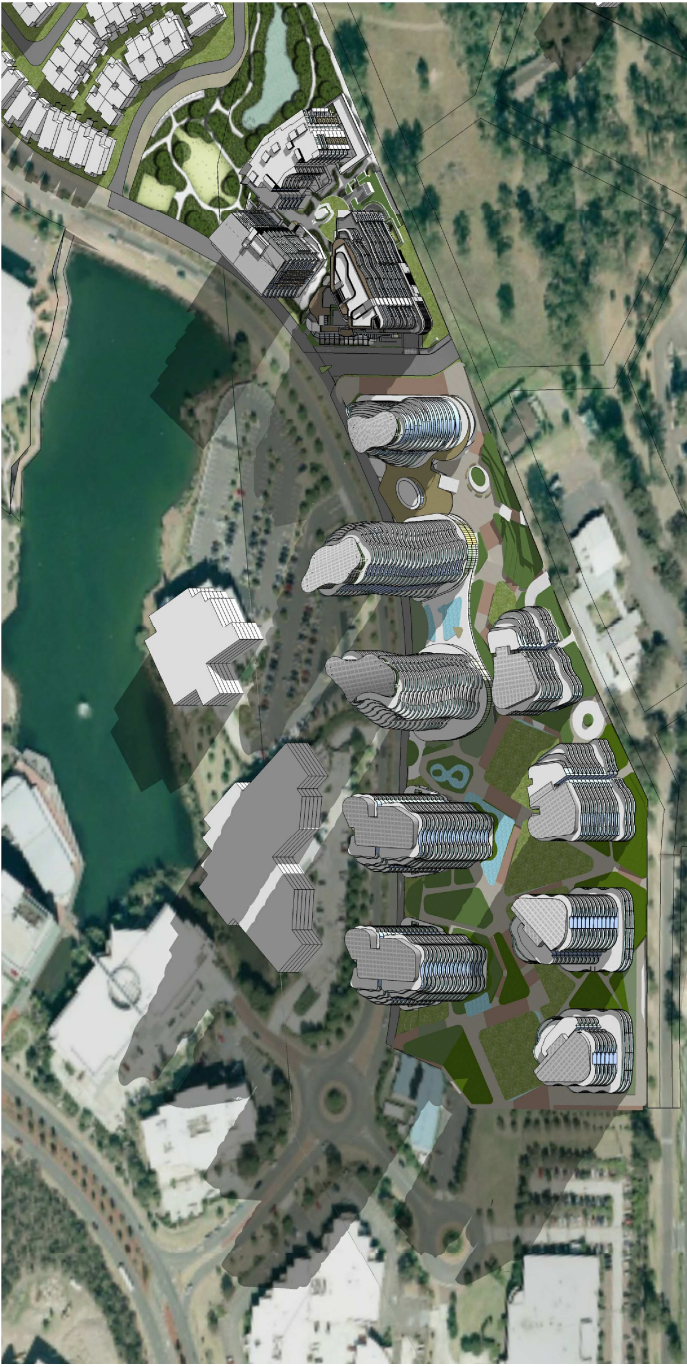
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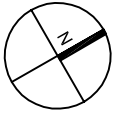
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LOT 2103, DP 1176614, SOLENT CIRCUIT, BAULKHAM HILLS

SOLAR ACCESS DIAGRAMS - 3D

WINTER SOLSTICE

PLANNING PROPOSAL

DATE 30/06/2016
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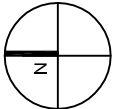
100mm

50mm

SOLAR ACCESS TABLE
(WINTER SOLSTICE 21 JUNE)

Bldg	Typical Floor	ADG Compliant (Min 2 hrs)	DCP* Compliant (Min 3 hrs)
B	6 apts	6/6 (100%)	5/6 (83%)
C	6 apts	6/6 (100%)	6/6 (100%)
D	7 apts	6/7 (86%)	5/7 (71%)
E	8 apts	7/8 (88%)	6/8 (75%)
F	8 apts	7/8 (88%)	5/8 (63%)
G	7 apts	6/7 (86%)	4/7 (57%)
H	7 apts	6/7 (86%)	5/7 (71%)
I	8 apts	6/8 (75%)	5/8 (68%)
J	8 apts	6/8 (75%)	6/8 (75%)
Total Across	65 apts	56/65 (86%)	47/65 (72%)

* The Hills DCP 2012 - Norwest Town Centre Residential Development



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PROPRIETOR

TYPICAL FLOOR
SOLAR ACCESS ANALYSIS

NORWEST TOWN CENTRE
EAST PRECINCT - 'THE GREENS'

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PLANNING PROPOSAL

DATE 30/06/2016
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PROJECT NO.

PP15

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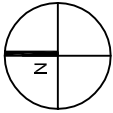
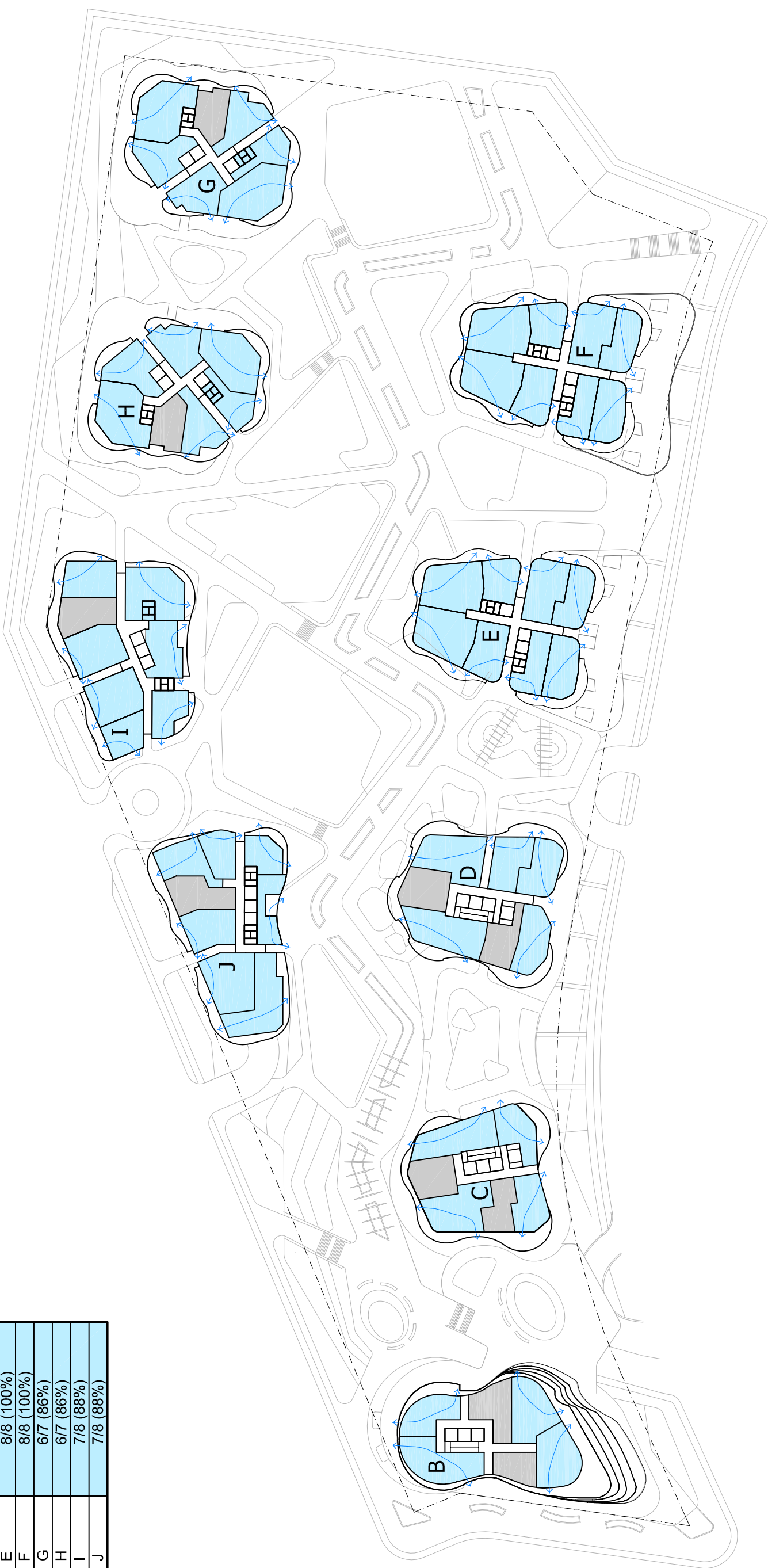
150mm ON ORIGINAL

100mm

50mm

CROSS VENTILATION TABLE

	Compliant
B	4/6 (67%)
C	4/6 (67%)
D	5/7 (71%)
E	8/8 (100%)
F	8/8 (100%)
G	6/7 (86%)
H	6/7 (86%)
I	7/8 (88%)
J	7/8 (88%)



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EAST PRECINCT - 'THE GREENS'**
LOT 2103, DP 1176614, SOLENT CIRCUIT, BAULKHAM HILLS

**TYPICAL FLOOR
CROSS VENTILATION ANALYSIS**

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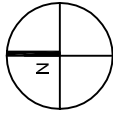
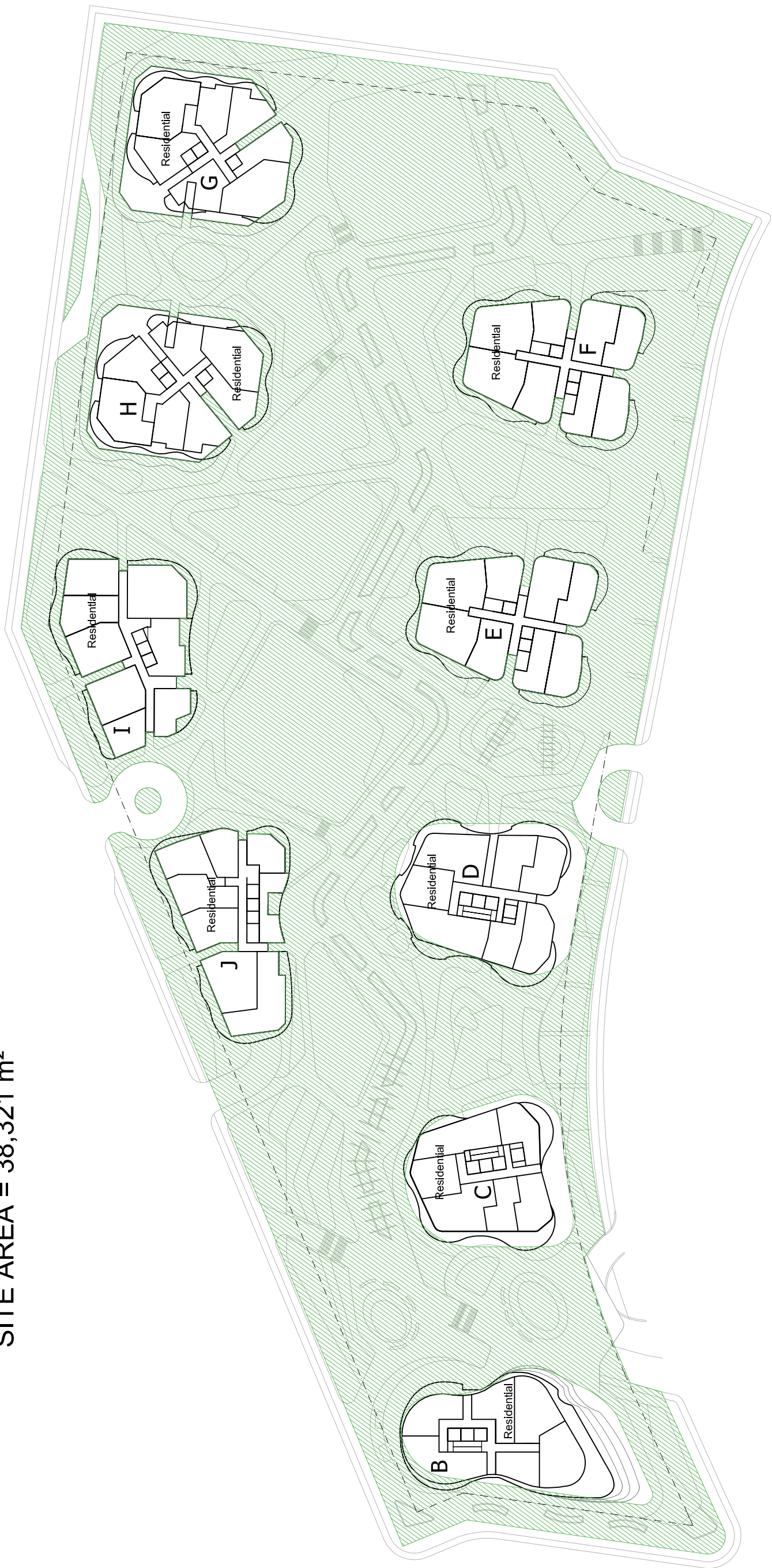


PROJECT NO. 1614
DRAWING NO. PP16
ISSUE B



LANDSCAPED AREA = 27,537 m² (71.9%)

SITE AREA = 38,321 m²



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PROPRIETOR

LANDSCAPED AREA

NORWEST TOWN CENTRE EAST PRECINCT - 'THE GREENS'

LOT 2103, DP 1176614, SOLENT CIRCUIT, BAULKHAM HILLS

PLANNING PROPOSAL

DATE 30/06/2016
SCALE 1:1000 @ A3



PROJECT NO. 1614
DRAWING NO. PP17
ISSUE B

ARCHITECT



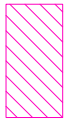
a level 7 97 pacific highway
north sydney nsw 2060
m po box 726 north sydney nsw 2059
p +61 (0)2 9900 6000 f +61 (0)2 9900 6001
w www.krikistaylor.com.au

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150mm ON ORIGINAL

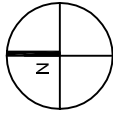
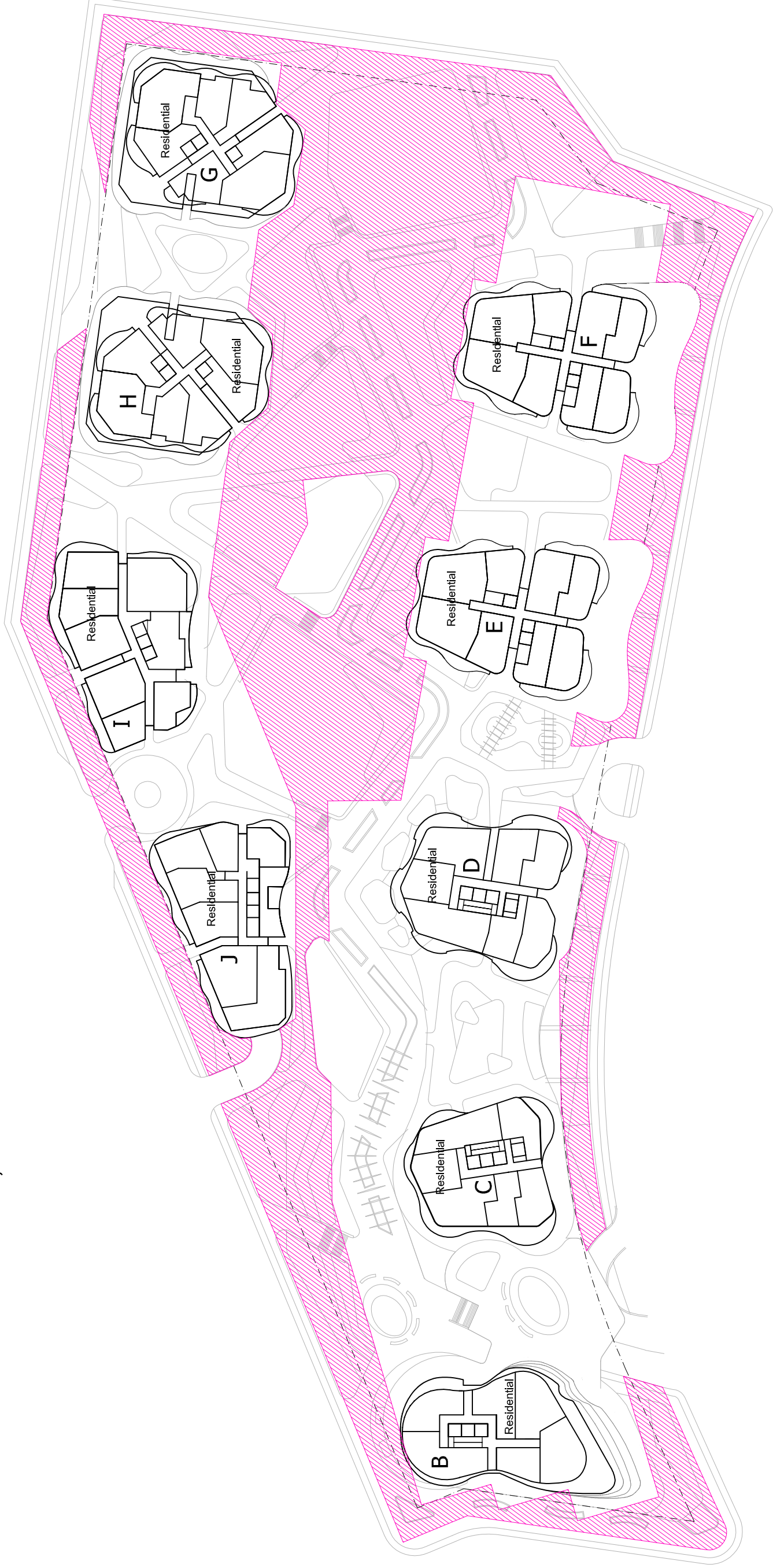
100mm

50mm



DEEP SOIL AREA = 13,612 m² (35.5%)

SITE AREA = 38,321 m²



DO NOT SCALE DRAWINGS.
VERIFY ALL DIMENSIONS ON SITE.
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ARCHITECT



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DEEP SOIL AREA

NORWEST TOWN CENTRE EAST PRECINCT - 'THE GREENS'

LOT 2103, DP 1176614, SOLENT CIRCUIT, BAULKHAM HILLS

PLANNING PROPOSAL

DATE 30/06/2016
SCALE 1:1000 @ A3



PROJECT NO. 1614
DRAWING NO. PP18
ISSUE B

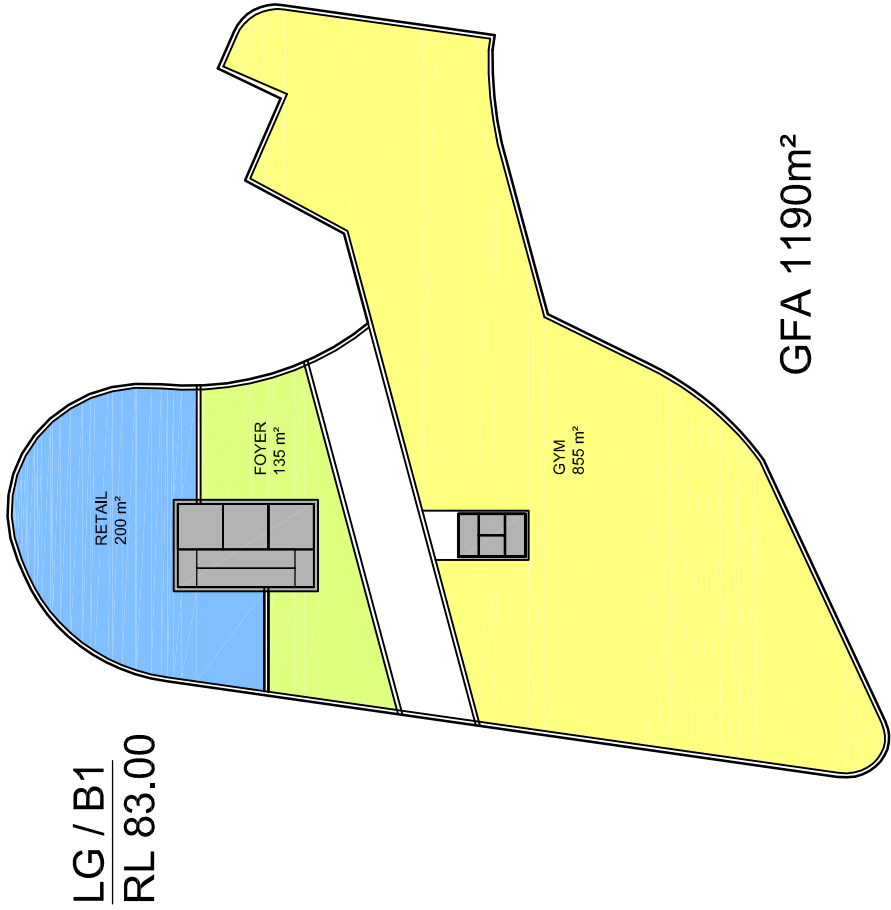
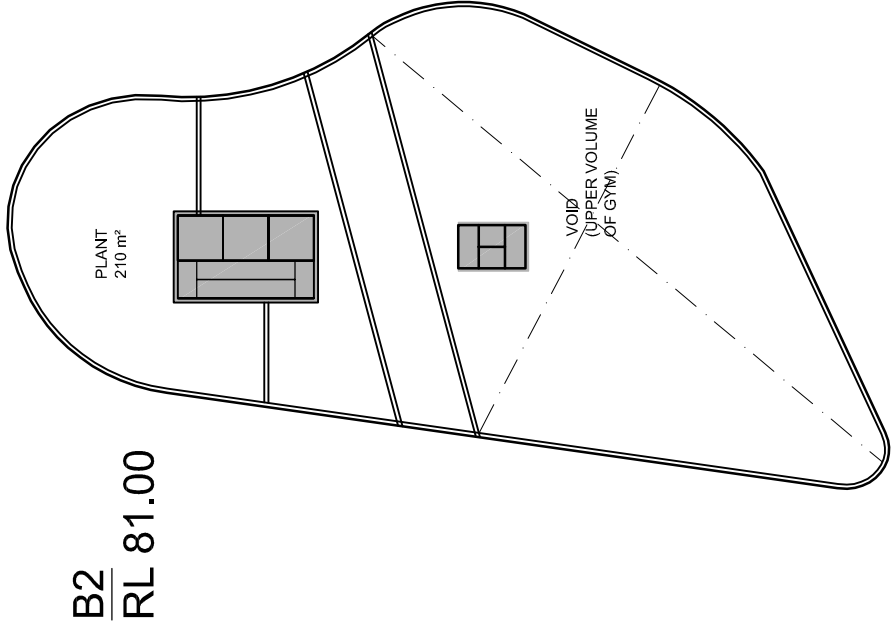
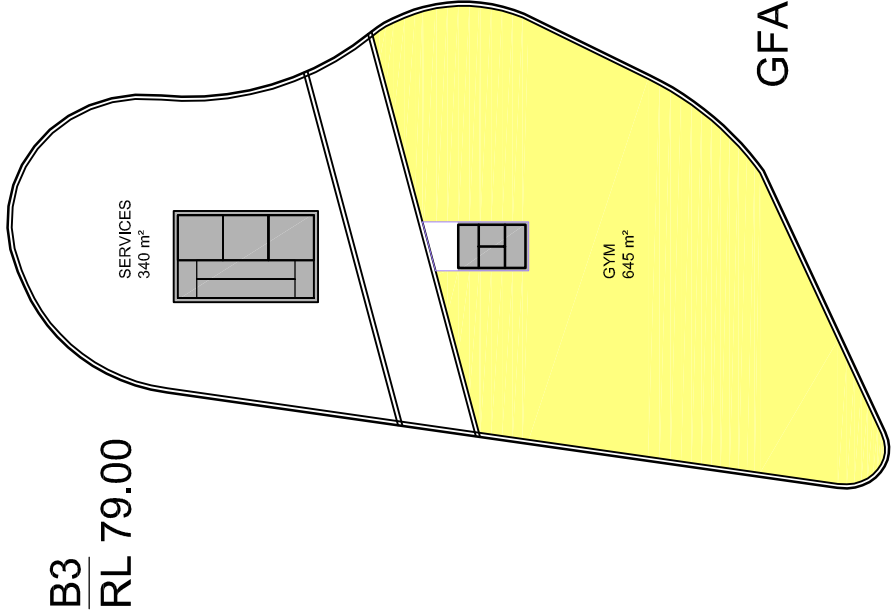
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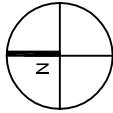
150mm ON ORIGINAL

TOTAL GFA:

RESIDENTIAL 7785 m² + FOYER 135 m² + NON-RESI. 2185 m²
= 10105 m²



3 NON-RESIDENTIAL FLOORS



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NORWEST TOWN CENTRE
EAST PRECINCT - 'THE GREENS'

LOT 2103, DP 1176614, SOLENT CIRCUIT, BAULKHAM HILLS

G.F.A. DIAGRAMS
BUILDING B (1/2)

ARCHITECT



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PLANNING PROPOSAL

DATE 30/09/2016
SCALE 1:500 @ A3



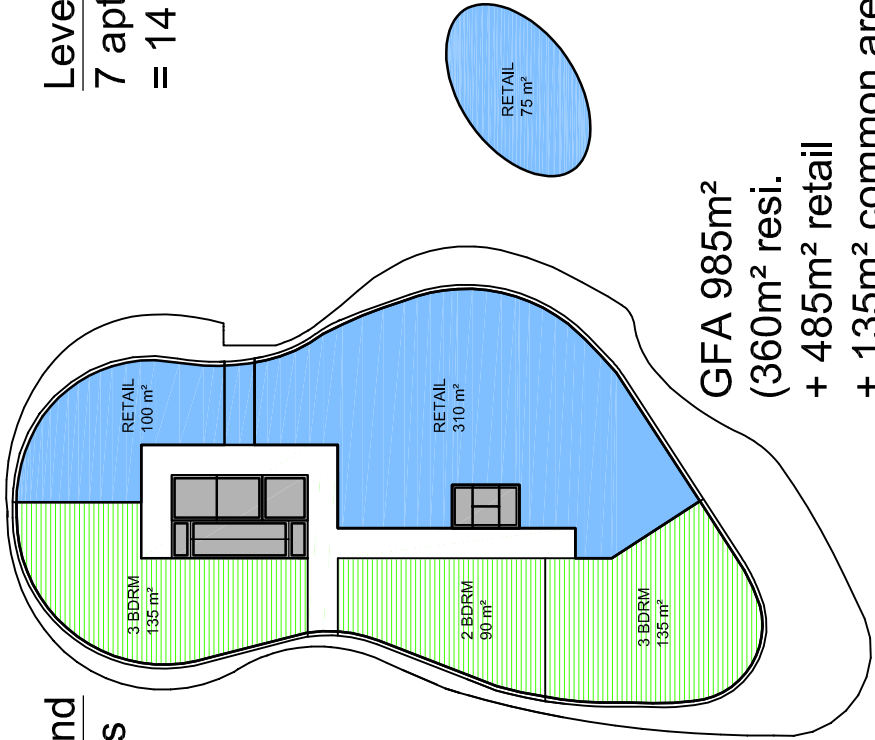
PROJECT NO. DRAWING NO. ISSUE
1614 PP-GFA-01 01

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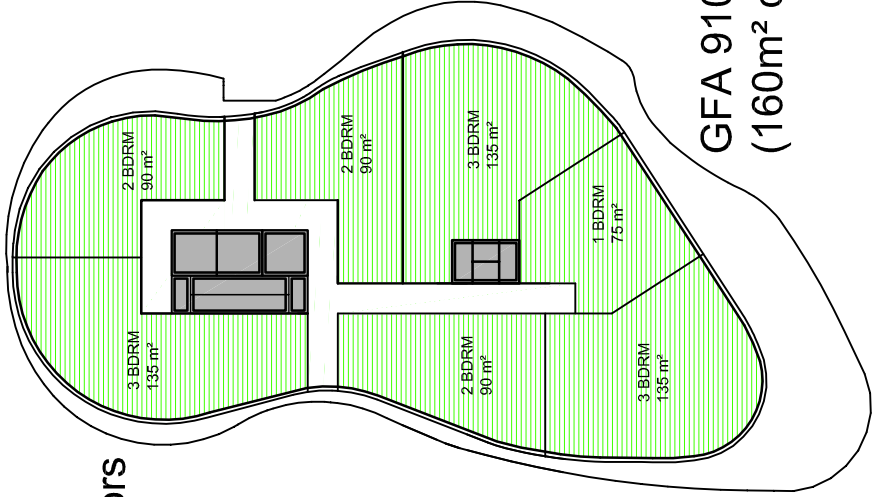
100mm

150mm ON ORIGINAL

Ground
3 apts

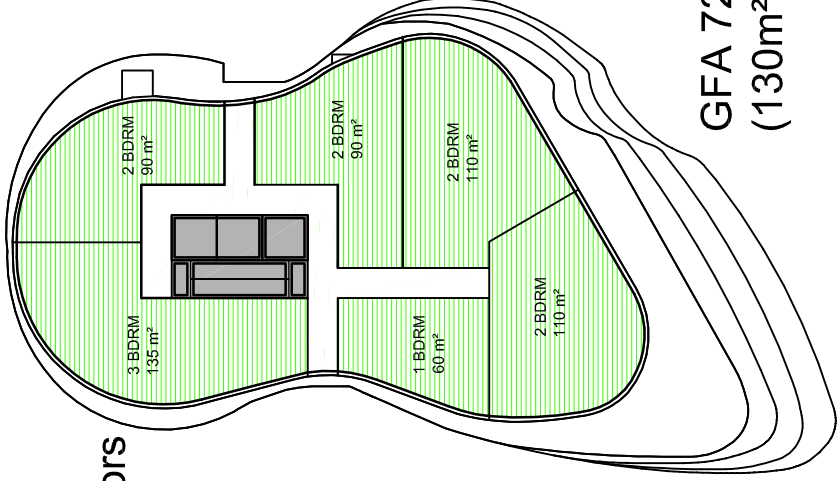


Level 1 - 2
7 apts x 2 floors
= 14 apts



GFA 985m²
(360m² resi.
+ 485m² retail
+ 135m² common area)

Level 3 - 6
6 apts x 4 floors
= 24 apts

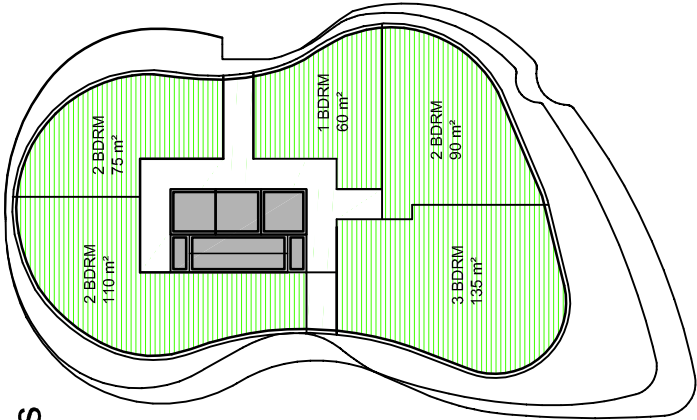


GFA 910m² / floor
(160m² common area)

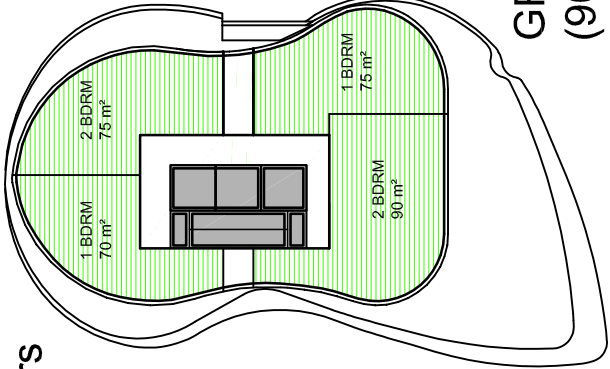
GFA 725m² / floor
(130m² common area)

13 RESIDENTIAL FLOORS 63 APARTMENTS

Level 7 - 8
5 apts x 2 floors
= 10 apts

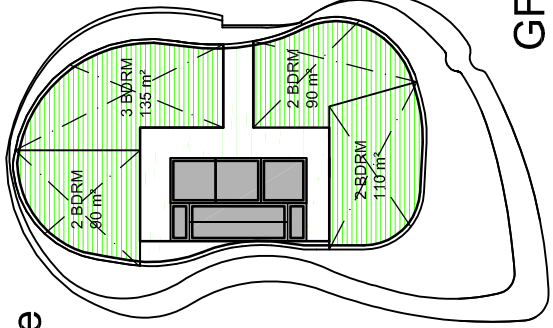


Level 9 - 10
4 apts x 2 floors
= 8 apts



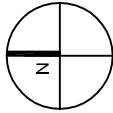
GFA 580m² / floor
(110m² common area)

Level 11 - 12
4 penthouse
apts



GFA 400m² / floor
(90m² common area)

GFA 305m² / floor
(185m² common area
across 2 floors)



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NORWEST TOWN CENTRE EAST PRECINCT - 'THE GREENS'

LOT 2103, DP 1176614, SOLENT CIRCUIT, BAULKHAM HILLS

G.F.A. DIAGRAMS
BUILDING B (2/2)

PLANNING PROPOSAL

DATE 30/09/2016

SCALE 1:500 @ A3



PROJECT NO.

DRAWING NO.

ISSUE

1614 PP-GFA-02 01

ARCHITECT



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150mm

100mm

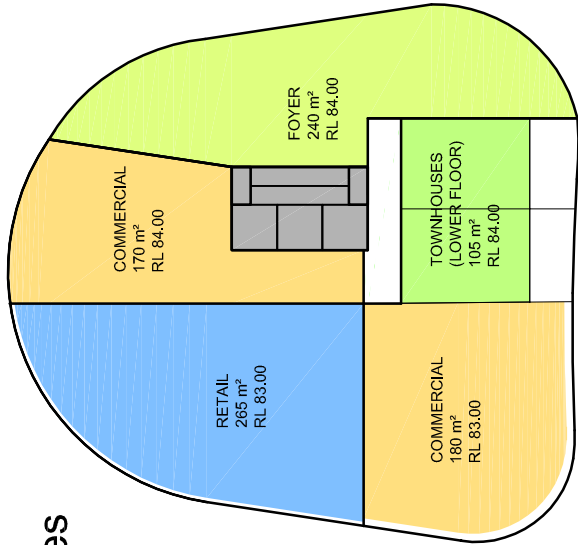
150mm ON ORIGINAL

A3

TOTAL GFA:

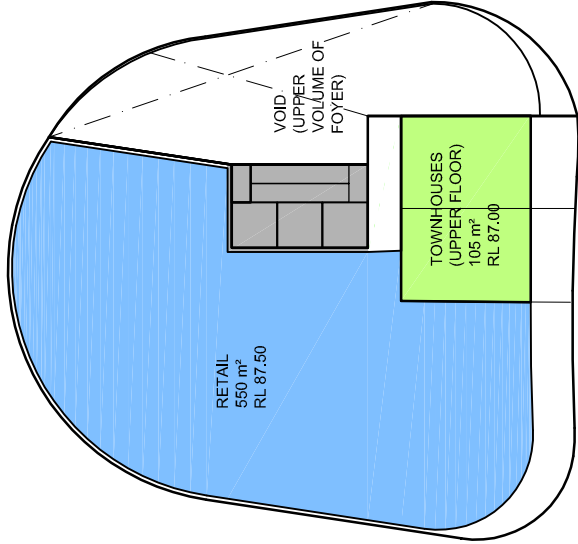
RESIDENTIAL 14725 m² + NON-RESI. 1675 m² + FOYER 240 m²
= 16640 m²

LG / B1
RL 83.00
2 townhouses



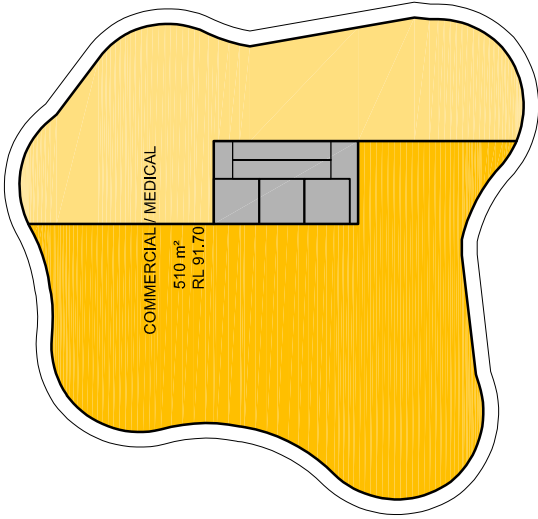
GFA 990 m²
(615 m² commercial / retail + 105 m² resi.
+ 30 m² common area + 240 m² foyer)

GROUND



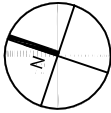
GFA 675 m²
(550 m² retail + 105 m² resi.
+ 20 m² common area)

Level 1



GFA 510 m²
(commercial / medical)

3 NON-RESIDENTIAL FLOORS
2 TOWNHOUSES



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NORWEST TOWN CENTRE
EAST PRECINCT - 'THE GREENS'

LOT 2103, DP 1176614, SOLENT CIRCUIT, BAULKHAM HILLS

G.F.A. DIAGRAMS
BUILDING C (1/2)

PLANNING PROPOSAL

DATE 30/09/2016
SCALE 1:500 @ A3



PROJECT NO.
1614

DRAWING NO.
PP-GFA-03

ISSUE
01



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150mm ON ORIGINAL

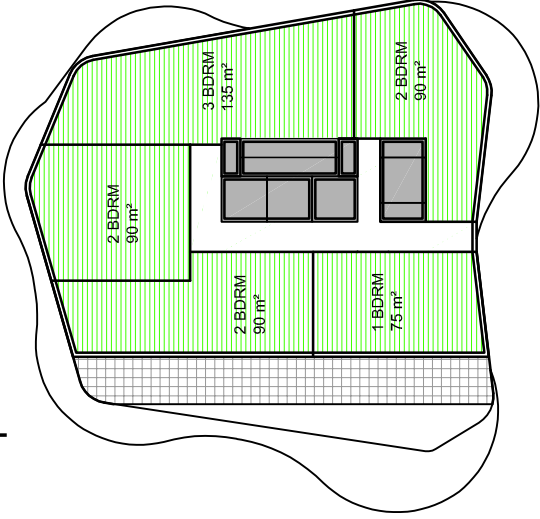
50mm

Level 2-18
6 apts x 17 floors
= 102 apts



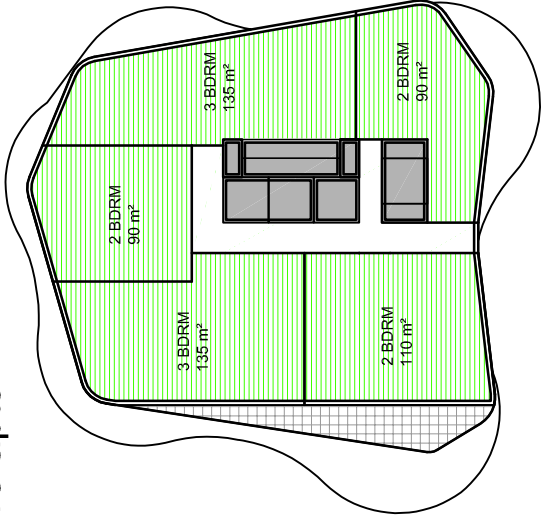
GFA 665 m² / floor
(50 m² common area)

Level 21-22
5 apts x 2 floors
= 10 apts



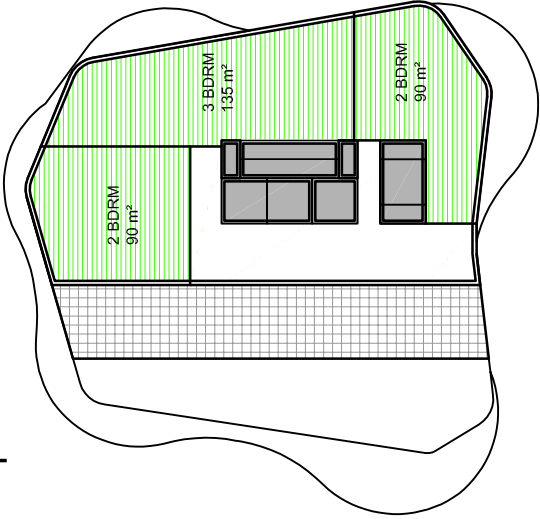
GFA 545 m² / floor
(65 m² common area)

Level 19-20
5 apts x 2 floors
= 10 apts



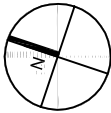
GFA 625 m² / floor
(70 m² common area)

Level 23-24
3 apts x 2 floors
= 6 apts



GFA 410 m² / floor
(95 m² common area)

23 RESIDENTIAL FLOORS 128 APARTMENTS



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NORWEST TOWN CENTRE EAST PRECINCT - 'THE GREENS'

LOT 2103, DP 1176614, SOLENT CIRCUIT, BAULKHAM HILLS

**G.F.A. DIAGRAMS
BUILDING C (2/2)**

ARCHITECT



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50mm

100mm

150mm ON ORIGINAL

PLANNING PROPOSAL

DATE 30/09/2016

SCALE 1:500 @ A3



PROJECT NO.

1614

DRAWING NO.

PP-GFA-04

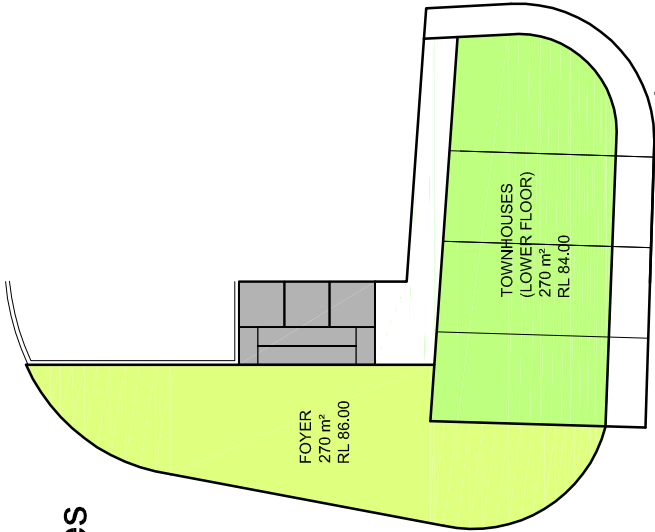
ISSUE

01

A3

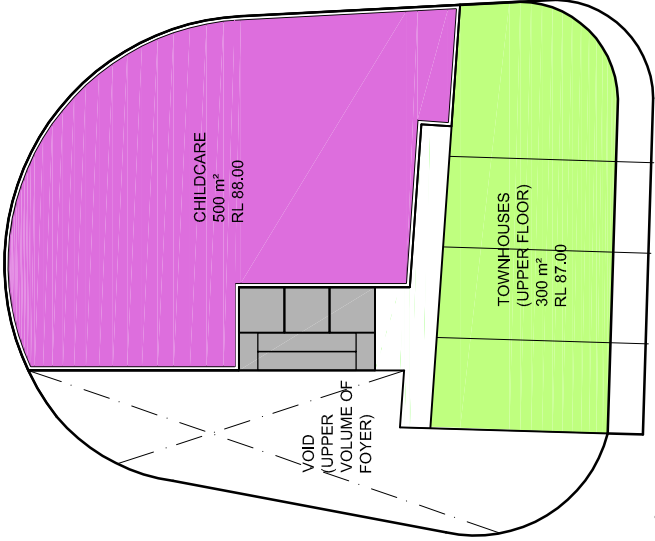
TOTAL GFA:
RESIDENTIAL 14800 m² + NON-RESI. 1100 m² + FOYER 270 m²
= 16170 m²

LG / B1
RL 83.00
4 townhouses



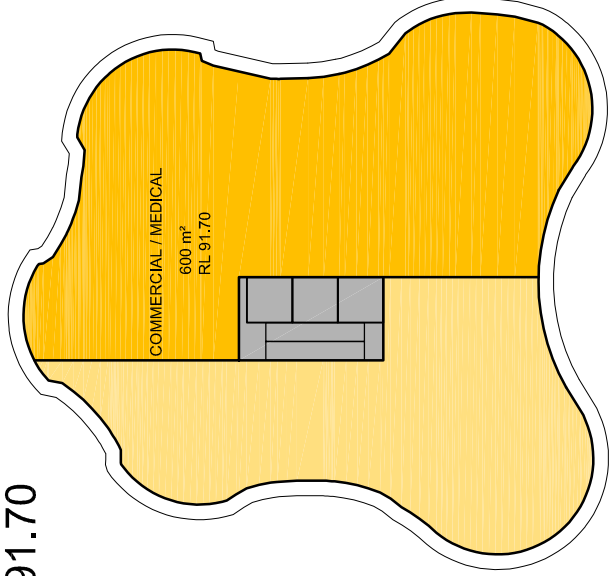
GFA 600 m²
(270 m² residential
+ 60 m² common area
+ 270 m² foyer)

Ground
RL 87.00



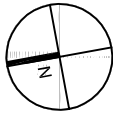
GFA 850 m²
(500 m² childcare
+ 300 m² residential
+ 50 m² common area)

Level 1
RL 91.70



GFA 600 m²
(commercial / medical)

3 NON-RESIDENTIAL FLOORS
4 TOWNHOUSES



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PROPRIETOR

NORWEST TOWN CENTRE
EAST PRECINCT - 'THE GREENS'
LOT 2103, DP 1176614, SOLENT CIRCUIT, BAULKHAM HILLS

G.F.A. DIAGRAMS
BUILDING D (1/2)

PLANNING PROPOSAL

DATE 30/09/2016
SCALE 1:500 @ A3



PROJECT NO. DRAWING NO. ISSUE
1614 PP-GFA-05 01

ARCHITECT
krikis
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Level 2-14

7 apts x 13 floors
= 91 apts



GFA 820 m² / floor
(115 m² common area)

Level 15-16

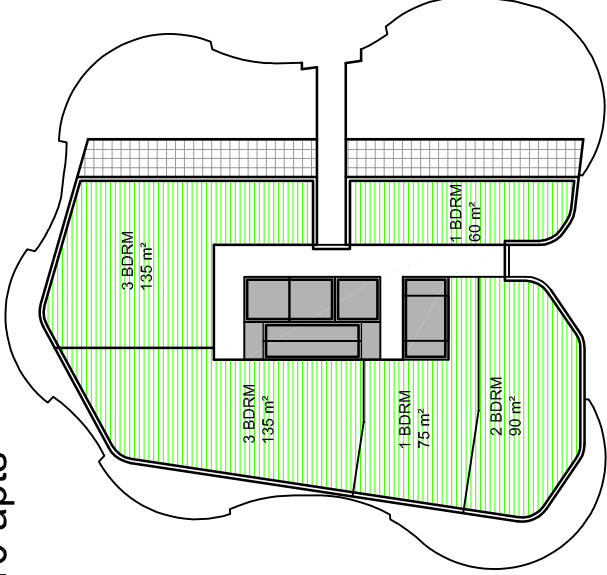
6 apts x 2 floors
= 12 apts



GFA 670 m² / floor
(115 m² common area)

Level 17-18

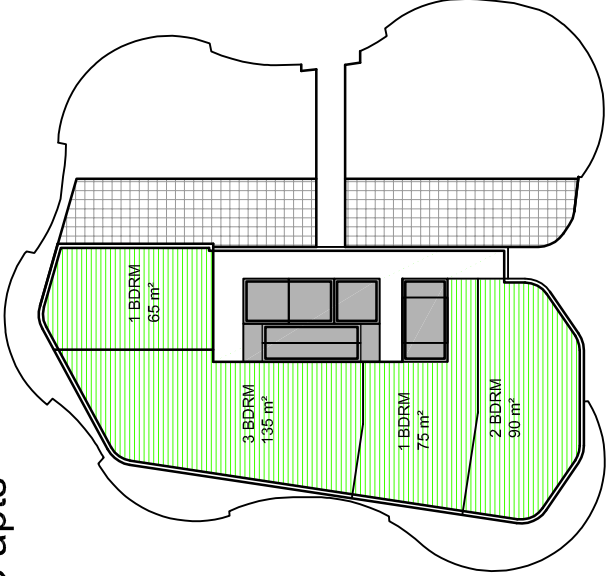
5 apts x 2 floors
= 10 apts



GFA 595 m² / floor
(100 m² common area)

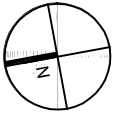
Level 19 -20

4 apts x 2 floors
= 8 apts



GFA 465 m² / floor
(100 m² common area)

19 RESIDENTIAL FLOORS
121 APARTMENTS



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NORWEST TOWN CENTRE
EAST PRECINCT - 'THE GREENS'

LOT 2103, DP 1176614, SOLENT CIRCUIT, BAULKHAM HILLS

G.F.A. DIAGRAMS
BUILDING D (2/2)



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ARCHITECT

PLANNING PROPOSAL

DATE 30/09/2016
SCALE 1:500 @ A3



PROJECT NO. DRAWING NO. ISSUE
1614 PP-GFA-06 01

50mm

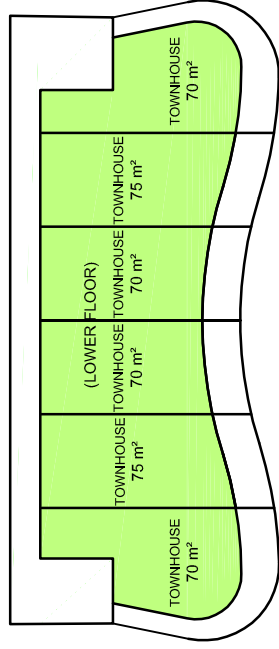
100mm

150mm ON ORIGINAL

Lower Ground Floor

RL 86.00

6 townhouses



GFA 550 m²

(120 m² common area)

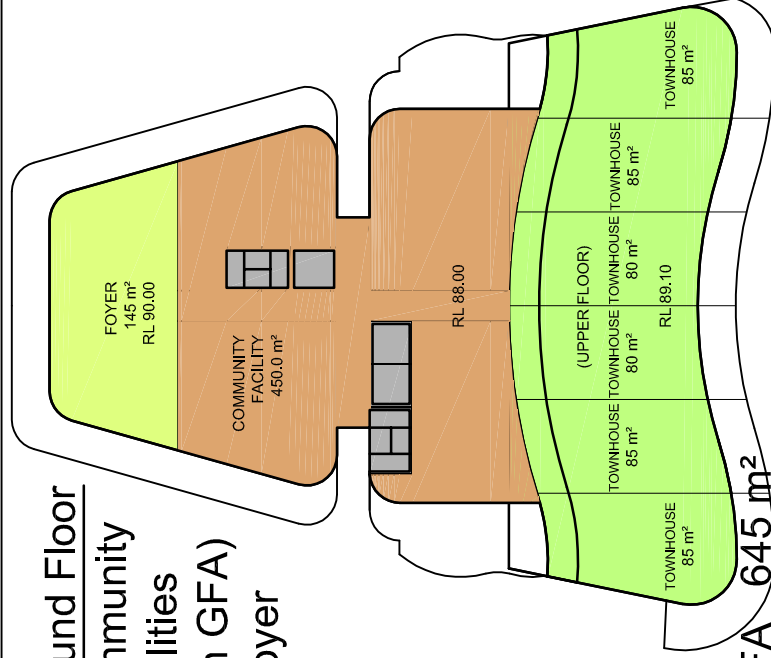
Ground Floor

Community

Facilities

(non GFA)

+ Foyer

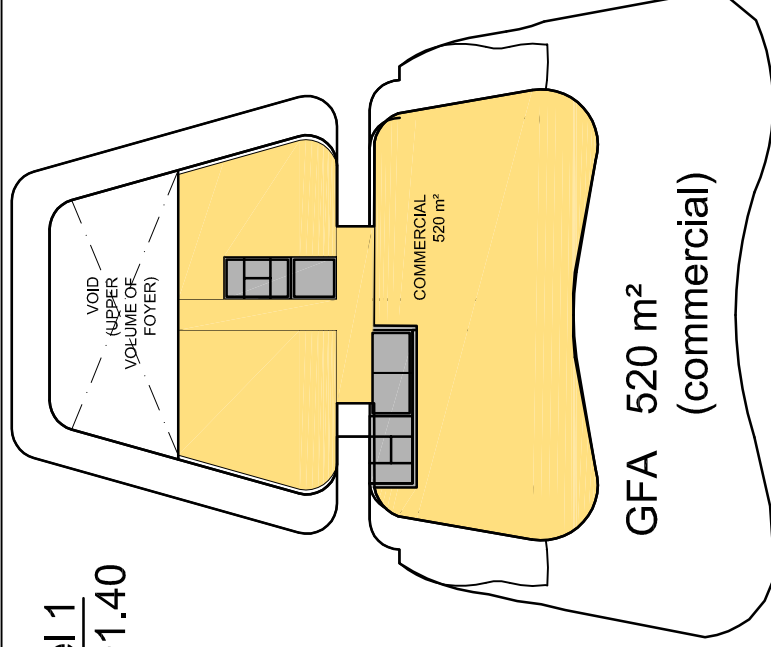


GFA 645 m²

(500 m² resi. + 145 m² foyer)

Level 1

RL 91.40



GFA 520 m²

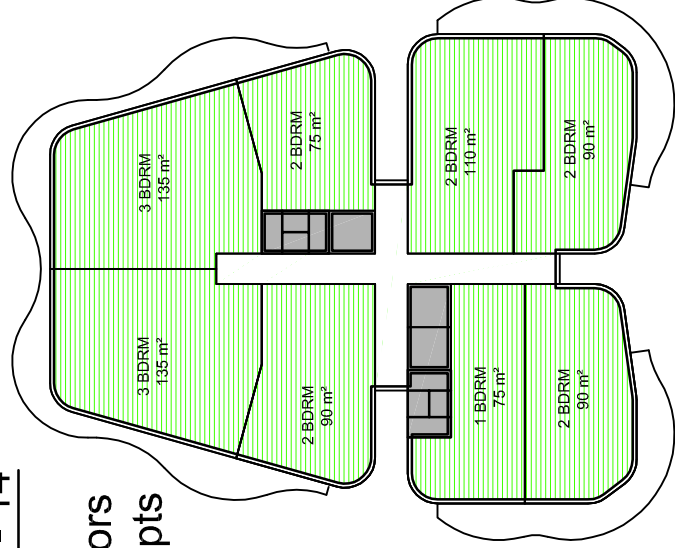
(commercial)

Level 2 - 14

8 apts

x 13 floors

= 104 apts

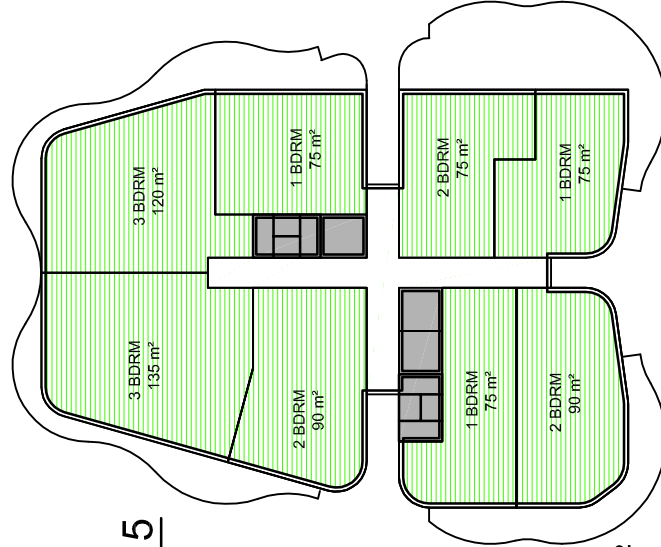


GFA 910 m² / floor

(110 m² common area)

Level 15

8 apts



GFA

845 m²

(110 m² common area)

Level 16

8 apts



GFA

845 m²

(110 m² common area)

Level 17

6 apts



GFA

750 m²

(115 m² common area)

Level 18

6 apts



GFA

750 m²

(115 m² common area)

TOTAL GFA:

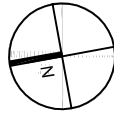
RESIDENTIAL 16070 m² +

NON-RESI. 520 m² + FOYER 145 m²

= 16735 m²

NORWEST TOWN CENTRE
EAST PRECINCT - 'THE GREENS'

LOT 2103, DP 1176614, SOLENT CIRCUIT, BAULKHAM HILLS



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G.F.A. DIAGRAMS
BUILDING E

ARCHITECT



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DATE 30/09/2016
SCALE 1:500 @ A3



PROJECT NO. DRAWING NO. ISSUE

1614 PP-GFA-07 01

PLANNING PROPOSAL

17 RESIDENTIAL FLOORS
6 TOWNHOUSES & 132 APARTMENTS

150mm

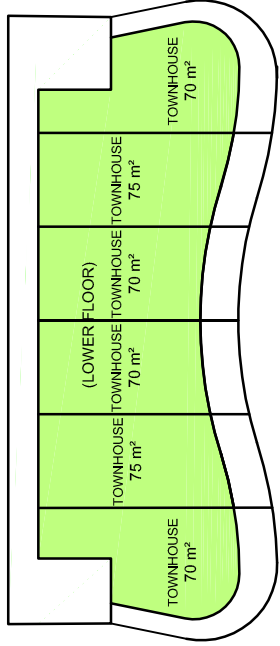
100mm

150mm ON ORIGINAL

A3

Lower Ground Floor

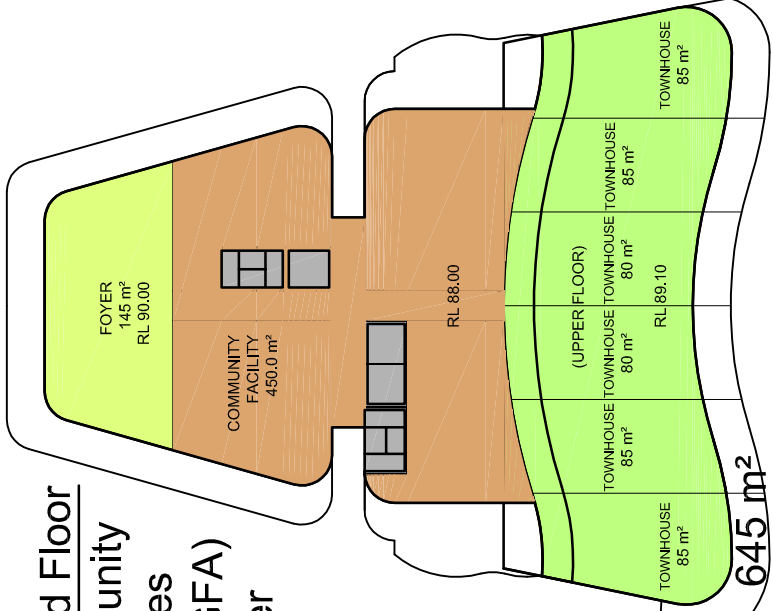
RL 86.00
6 townhouses



GFA 550 m²
(120 m² common area)

Ground Floor

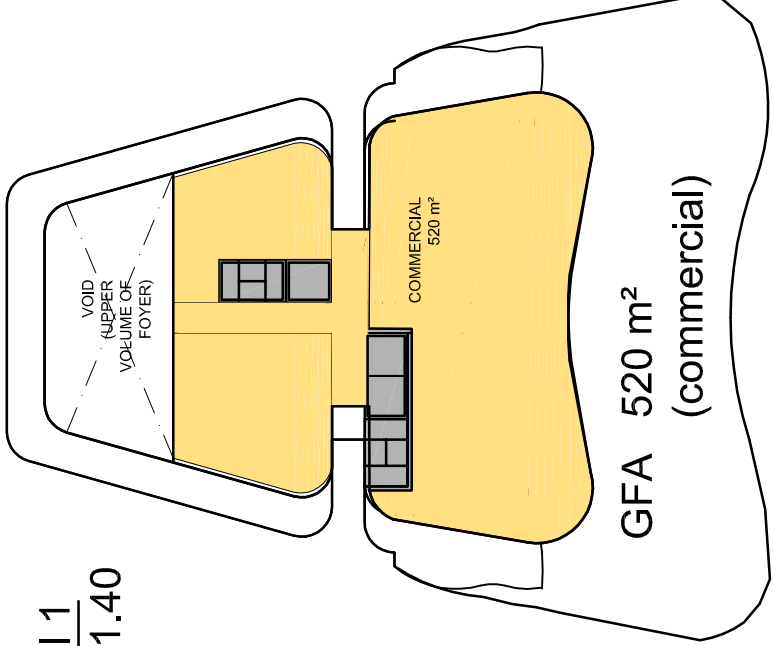
Community
Facilities
(non GFA)
+ Foyer



GFA 645 m²
(500 m² resi. + 145 m² foyer)

Level 1

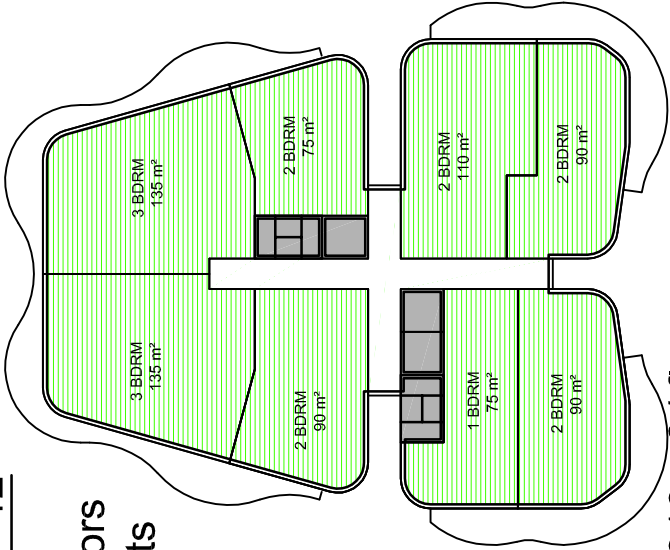
RL 91.40



GFA 520 m²
(commercial)

Level 2 - 12

8 apts
x 11 floors
= 88 apts



GFA 910 m² / floor
(110 m² common area)

Level 13

8 apts



GFA 845 m²
(110 m² common area)

Level 14

8 apts



GFA 845 m²
(110 m² common area)

Level 15

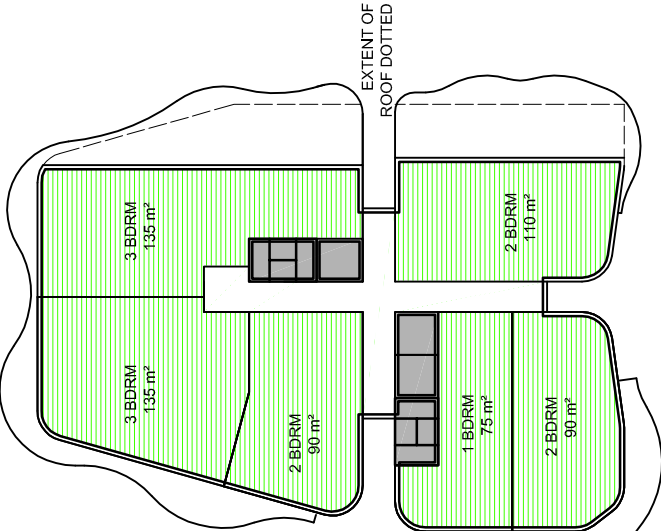
6 apts



GFA 750 m²
(115 m² common area)

Level 16

6 apts

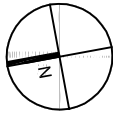


GFA 750 m²
(115 m² common area)

TOTAL GFA: RESIDENTIAL 14250 m² +
NON-RESI. 520 m² + FOYER 145 m²
= 14915 m²

15 RESIDENTIAL FLOORS
6 TOWNHOUSES & 116 APARTMENTS

PLANNING PROPOSAL



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PROPRIETOR

G.F.A. DIAGRAMS
BUILDING F

NORWEST TOWN CENTRE
EAST PRECINCT - 'THE GREENS'

LOT 2103, DP 1176614, SOLENT CIRCUIT, BAULKHAM HILLS

ARCHITECT



a level 7 97 pacific highway
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PROJECT NO.

1614 PP-GFA-08

ISSUE

01

DATE 30/09/2016

SCALE 1:500 @ A3



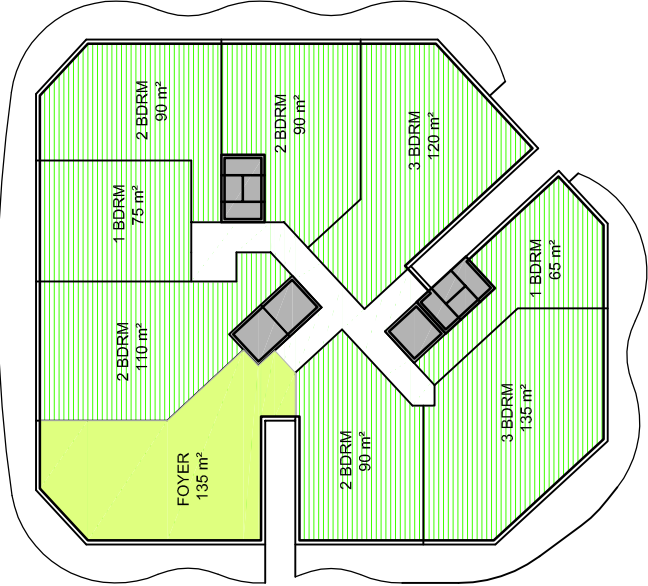
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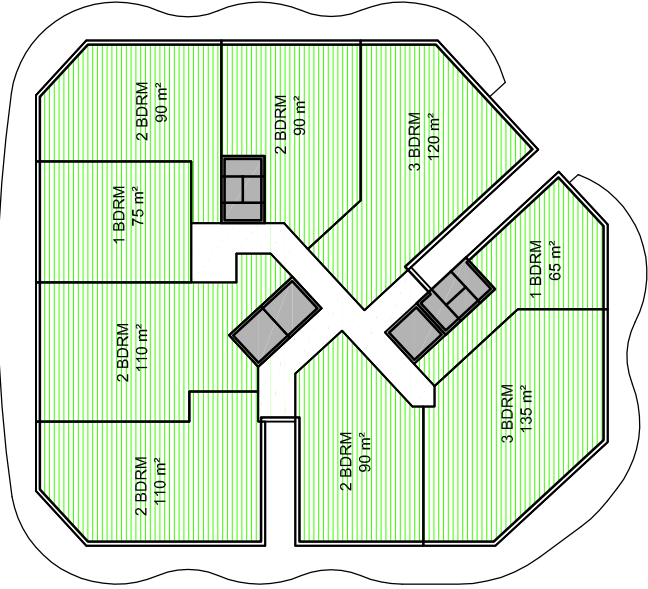
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Level 2
8 apts



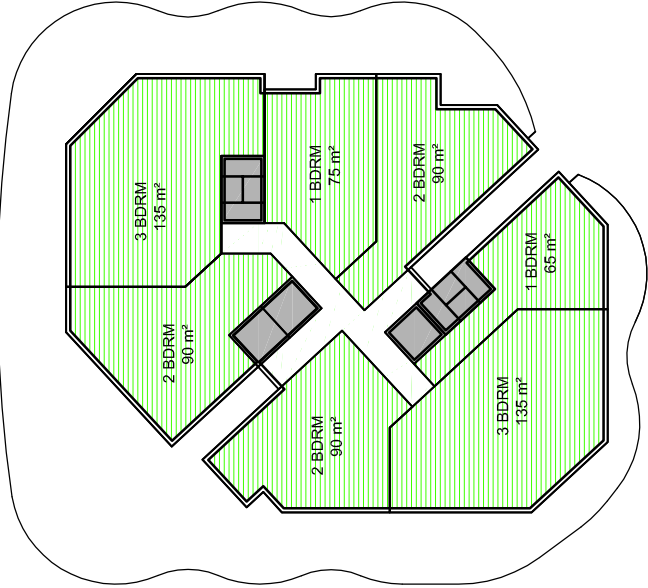
GFA 1035 m²
(125 m² common area
& 135 m² foyer)

Level 3
9 apts



GFA 1035 m²
(150 m² common area)

Level 4
7 apts



GFA 770 m²
(90 m² common area)

Level 5 - Level 6
7 apts x 2 floors
= 14 apts



GFA 770 m² / floor
(90 m² common area)

Level 7
7 apts



GFA 755 m²
(100 m² common area)

Level 8
6 apts



GFA 650 m²
(75 m² common area)

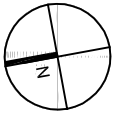
Level 9
5 apts



GFA 530 m²
(75 m² common area)

8 RESIDENTIAL FLOORS 56 APARTMENTS

TOTAL GFA: 6315 m²



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PROPRIETOR

G.F.A. DIAGRAMS
BUILDING G

NORWEST TOWN CENTRE EAST PRECINCT - 'THE GREENS'

LOT 2103, DP 1176614, SOLENT CIRCUIT, BAULKHAM HILLS

PLANNING PROPOSAL

DATE 30/09/2016

SCALE 1:500 @ A3



PROJECT NO.

1614

DRAWING NO.

PP-GFA-09

ISSUE

01

ARCHITECT



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150mm ON ORIGINAL

50mm

Level 2
8 apts



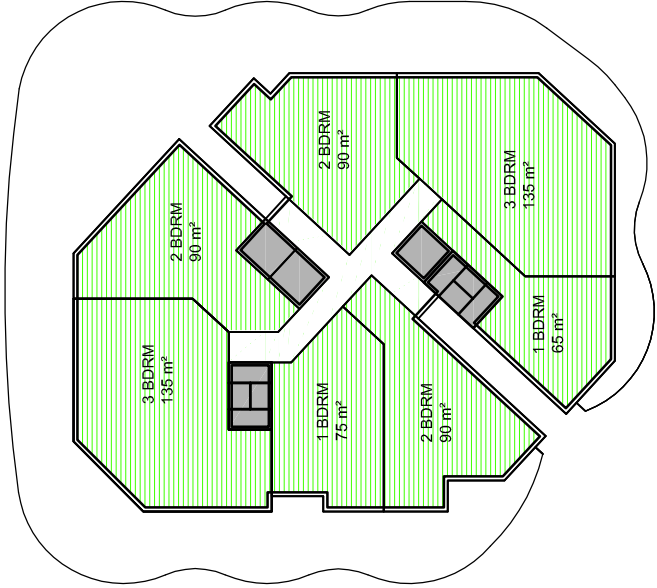
GFA 1035 m²
(125 m² common area
& 135 m² foyer)

Level 3
9 apts



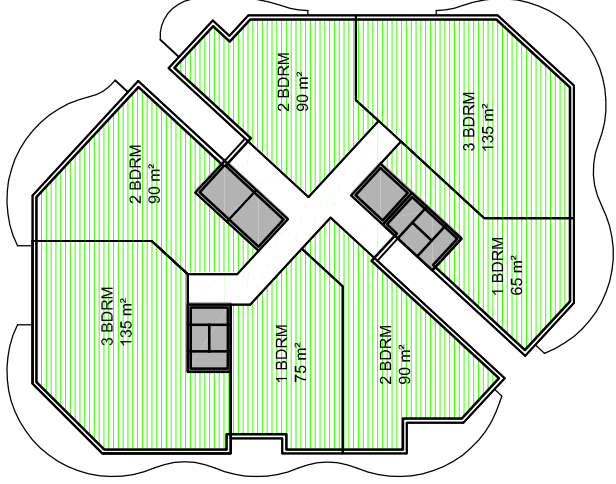
GFA 1035 m²
(150 m² common area)

Level 4
7 apts



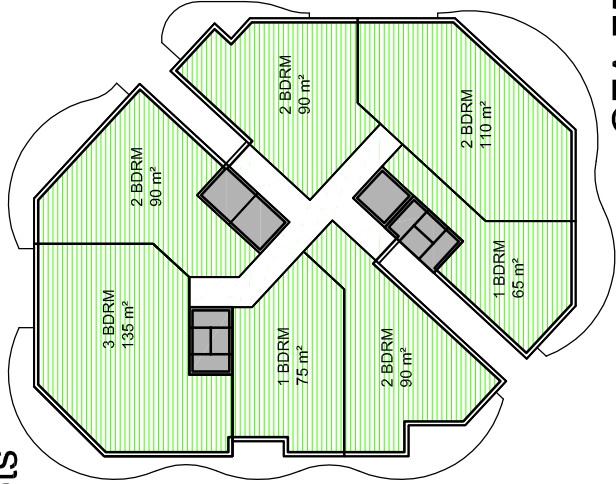
GFA 770 m²
(90 m² common area)

Level 5 - Level 12
7 apts x 8 floors
= 56 apts



GFA 770 m² / floor
(90 m² common area)

Level 13
7 apts



GFA 755 m²
(100 m² common area)

Level 14
6 apts



GFA 650 m²
(75 m² common area)

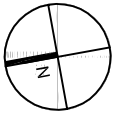
Level 15
5 apts



GFA 530 m²
(75 m² common area)

14 RESIDENTIAL FLOORS 98 APARTMENTS

TOTAL GFA: 10935 m²



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G.F.A. DIAGRAMS
BUILDING H

NORWEST TOWN CENTRE EAST PRECINCT - 'THE GREENS'

LOT 2103, DP 1176614, SOLENT CIRCUIT, BAULKHAM HILLS

PLANNING PROPOSAL

DATE 30/09/2016
SCALE 1:500 @ A3



PROJECT NO. DRAWING NO. ISSUE
1614 PP-GFA-10 01



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50mm

100mm

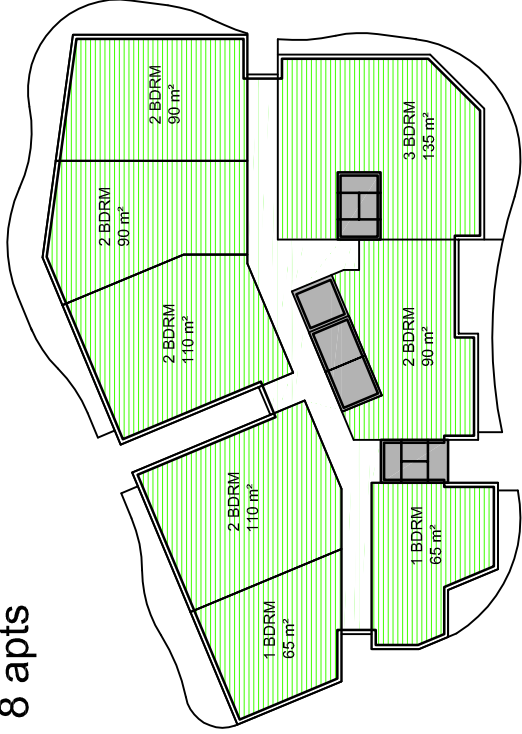
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Level 2
7 apts



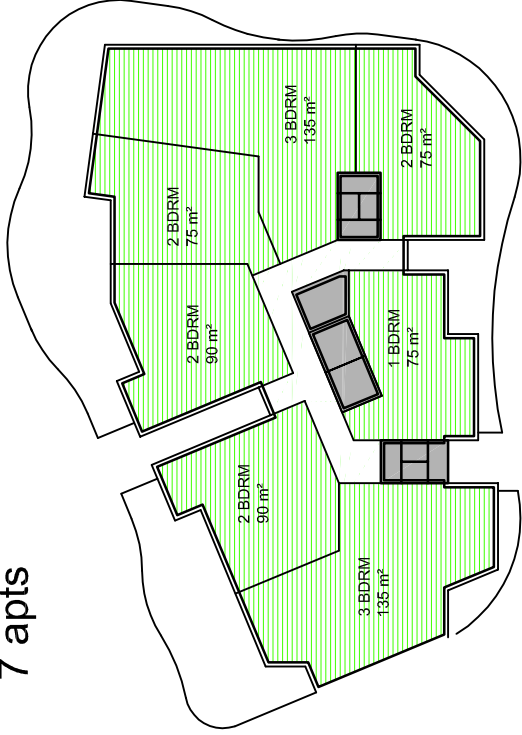
GFA 900 m²
(110 m² common area
& 100 m² foyer)

Level 3
8 apts



GFA 900 m²
(145 m² common area)

Level 4
7 apts



GFA 765 m²
(90 m² common area)

Level 5 - Level 10
7 apts x 6 floors
= 42 apts



GFA 765 m² / floor
(90 m² common area)

Level 11
7 apts



TOTAL GFA: 9190 m²

Level 12
6 apts



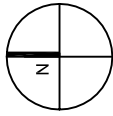
GFA 675 m²
(90 m² common area)

Level 13
6 apts



GFA 635 m²
(90 m² common area)

12 RESIDENTIAL FLOORS 83 APARTMENTS



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PROPRIETOR

G.F.A. DIAGRAMS
BUILDING I

NORWEST TOWN CENTRE EAST PRECINCT - 'THE GREENS'

LOT 2103, DP 1176614, SOLENT CIRCUIT, BAULKHAM HILLS

PLANNING PROPOSAL

DATE 30/09/2016
SCALE 1:500 @ A3



PROJECT NO. DRAWING NO. ISSUE
1614 PP-GFA-11 01

ARCHITECT



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150mm ON ORIGINAL

100mm

50mm

8 RESIDENTIAL FLOORS
49 APARTMENTS

Level 2
7 apts



TOTAL GFA: 5555 m²

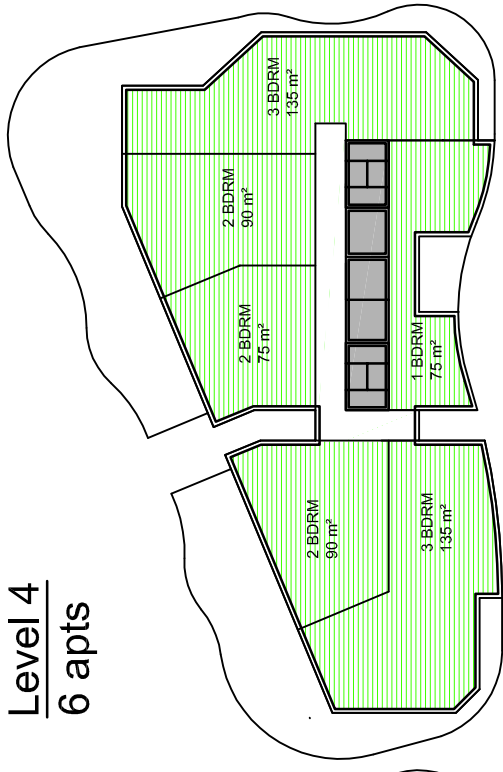
GFA 840 m²
(100 m² common area
& 85 m² foyer)

Level 3
8 apts



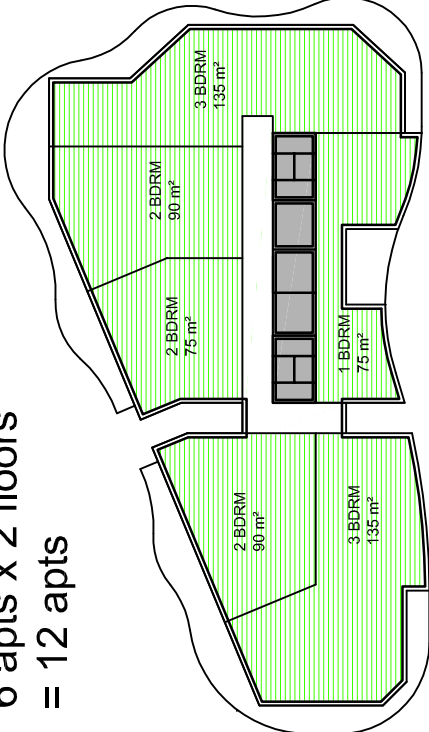
GFA 840 m²
(95 m² common area)

Level 4
6 apts



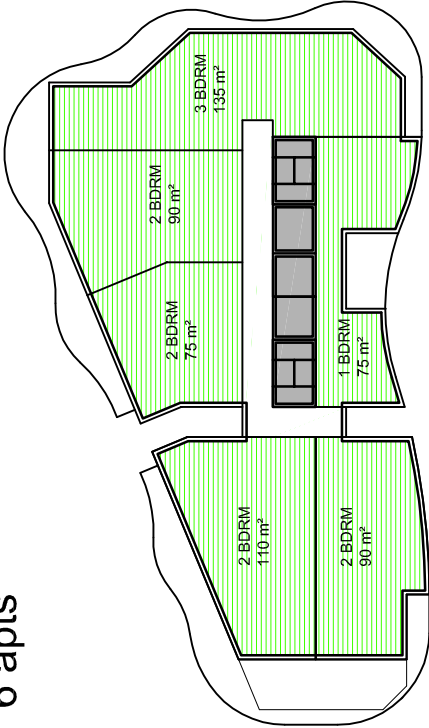
GFA 685 m²
(85 m² common area)

Level 5 - 6
6 apts x 2 floors
= 12 apts



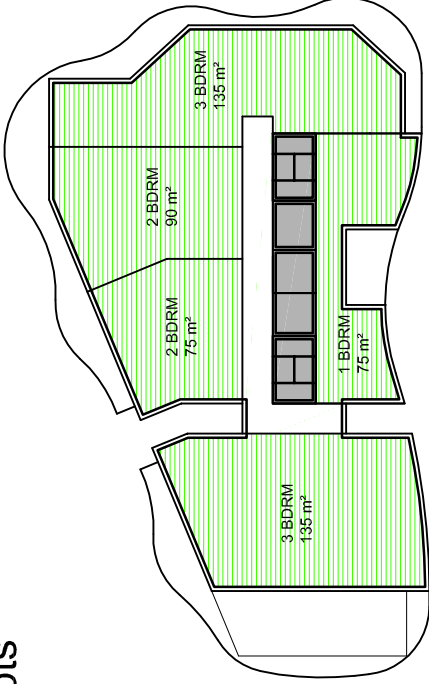
GFA 685 m² / floor
(85 m² common area)

Level 7
6 apts



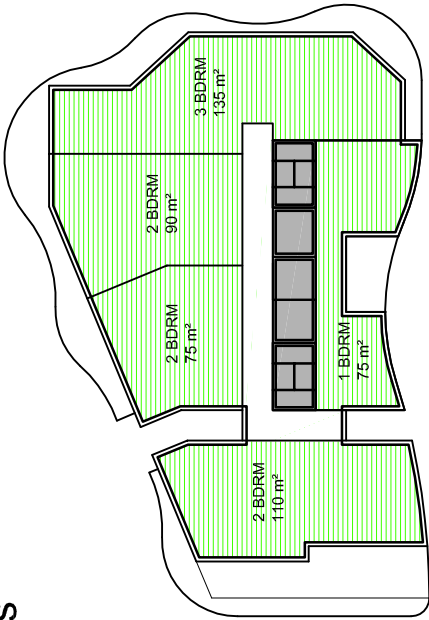
GFA 655 m²
(80 m² common area)

Level 8
5 apts

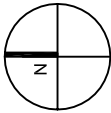


GFA 605 m²
(95 m² common area)

Level 9
5 apts



GFA 560 m²
(75 m² common area)



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G.F.A. DIAGRAMS
BUILDING J

NORWEST TOWN CENTRE
EAST PRECINCT - 'THE GREENS'

LOT 2103, DP 1176614, SOLENT CIRCUIT, BAULKHAM HILLS

PLANNING PROPOSAL

DATE 30/09/2016
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PROJECT NO. DRAWING NO. ISSUE
1614 PP-GFA-12 01

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50mm

150mm ON ORIGINAL

GFA CALCULATION



30 September 2016

Residential

Building B			Total
	No. of Levels	SQ M/floor	SQ M
Foyer @ LG	1	135	135.0
Ground	1	495	495.0
Level 1-2	2	910	1820.0
Level 3-6	4	725	2900.0
Level 7-8	2	580	1160.0
Level 9-10	2	400	800.0
Level 11-12	2	305	610.0
Subtotal	13		7920.0

Building C			Total
	No. of Levels	SQ M/floor	SQ M
Foyer @ LG	1	240	240.0
Level 2-18	17	665	11305.0
Level 19-20	2	625	1250.0
Level 21-22	2	545	1090.0
Level 23-24	2	410	820.0
Subtotal	23		14705.0

Building D			Total
	No. of Levels	SQ M/floor	SQ M
Foyer @ LG	1	270	270.0
Level 2-14	13	820	10660.0
Level 15-16	2	670	1340.0
Level 17-18	2	595	1190.0
Level 19-20	2	465	930.0
Subtotal	19		14390.0

Building E			Total
	No. of Levels	SQ M/floor	SQ M
Foyer @ G	1	145	145.0
Level 2-14	13	910	11830.0
Level 15-16	2	845	1690.0
Level 17-18	2	750	1500.0
Subtotal	17		15165.0

Building F			Total
	No. of Levels	SQ M/floor	SQ M
Foyer @ G	1	145	145.0
Level 2-12	11	910	10010.0
Level 13-14	2	845	1690.0
Level 15-16	2	750	1500.0
Subtotal	15		13345.0

Building G			Total
	No. of Levels	SQ M/floor	SQ M
Foyer @ L2	1	135	135.0
Level 2	1	900	900.0
Level 3	1	1035	1035.0
Level 4-6	3	770	2310.0
Level 7	1	755	755.0
Level 8	1	650	650.0
Level 9	1	530	530.0
Subtotal	8		6315.0

Building H			Total
	No. of Levels	SQ M/floor	SQ M
Foyer @ L2	1	135	135.0
Level 2	1	900	900.0
Level 3	1	1035	1035.0
Level 4-12	9	770	6930.0
Level 13	1	755	755.0
Level 14	1	650	650.0
Level 15	1	530	530.0
Subtotal	14		10935.0

Building I			Total
	No. of Levels	SQ M/floor	SQ M
Foyer @ L2	1	100	100.0
Level 2	1	800	800.0
Level 3	1	900	900.0
Level 4-10	7	765	5355.0
Level 11	1	725	725.0
Level 12	1	675	675.0
Level 13	1	635	635.0
Subtotal	12		9190.0

Building J			Total
	No. of Levels	SQ M/floor	SQ M
Foyer @ L2	1	85	85.0
Level 2	1	755	755.0
Level 3	1	840	840.0
Level 4-6	3	685	2055.0
Level 7	1	655	655.0
Level 8	1	605	605.0
Level 9	1	560	560.0
Subtotal	8		5555.0

Townhouses			Total
	No. of Levels	SQ M/floor	SQ M
Building C (2 units)	2	130	260.0
Building D (4 units)	2	340	680.0
Building E (6 units)	2	525	1050.0
Building F (6 units)	2	525	1050.0
Subtotal 18 units			3040.0

Total GFA	Residential	100,560.0
	(including foyer area)	1,390.0

Non Residential Uses

Commercial		Total
Level	Location/Building	SQ M
B1	C	180.0
B1	C	170.0
Level 1	C	510.0
Level 1	D	600.0
Level 1	E	520.0
Level 1	F	520.0
Subtotal		2500.0

Gym		Total
Level	Location/Building	SQ M
B3	B	645.0
B1	B	855.0
Subtotal		1500.0

Community Facilities		Total
Level	Location/Building	SQ M
Ground Floor	C/D/J	450.0
Ground Floor	E	450.0
Ground Floor	F	450.0
Level 1	H/I/E	510.0
Subtotal		1860.0

Retail		Total
Level	Location/Building	SQ M
B1	B	200.0
B1	C	265.0
Ground Floor	B	410.0
Ground Floor	C	550.0
Ground Floor	B/C	75.0
Subtotal		1500.0

Childcare		Total
Level	Location/Building	SQ M
Ground Floor	D	500.0
Subtotal		500.0

Total GFA	Non Residential	6,000.0
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Total GFA	Residential + Non Residential Uses	100560 + 6000	106,560
(not including 1860 sqm of community facilities)			



01 20 MARCH / 23 SEPTEMBER - 9 am



02 20 MARCH / 23 SEPTEMBER - 10 am



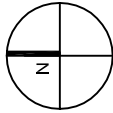
03 20 MARCH / 23 SEPTEMBER - 11 am



04 20 MARCH / 23 SEPTEMBER - 12 noon

SHADOWS FROM PROPOSAL

EXISTING SHADOWS



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NORWEST TOWN CENTRE EAST PRECINCT - 'THE GREENS'

LOT 2103, DP 1176614, SOLENT CIRCUIT, BAULKHAM HILLS

PLANNING PROPOSAL

DATE 30/09/2016
SCALE N.T.S.

ARCHITECT



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SHADOW DIAGRAMS

EQUINOX (1/2)

PROJECT NO. DRAWING NO. ISSUE

1614 PP08-01 01

150mm ON ORIGINAL

100mm

50mm



01 20 MARCH / 23 SEPTEMBER - 1 pm

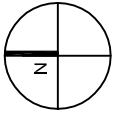


02 20 MARCH / 23 SEPTEMBER - 2 pm



03 20 MARCH / 23 SEPTEMBER - 3 pm

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- EXISTING SHADOWS



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NORWEST TOWN CENTRE EAST PRECINCT - 'THE GREENS'

LOT 2103, DP 1176614, SOLENT CIRCUIT, BAULKHAM HILLS

SHADOW DIAGRAMS EQUINOX (2/2)

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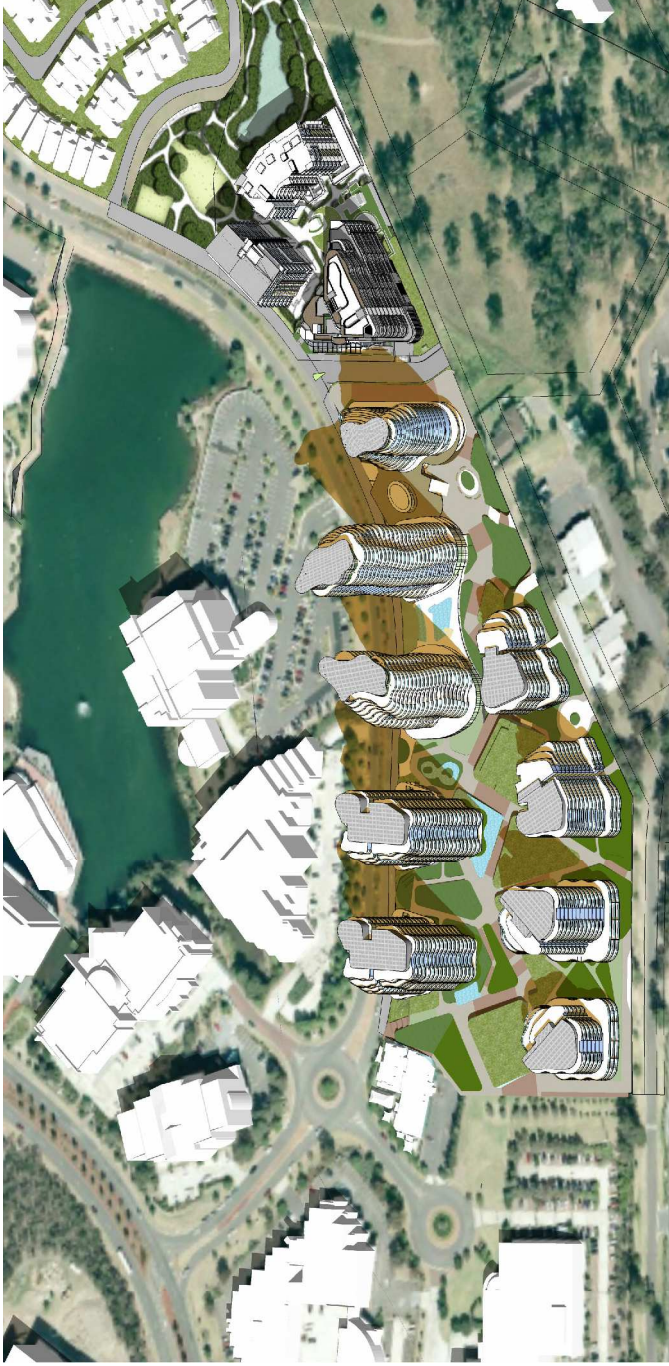
PLANNING PROPOSAL

DATE 30/09/2016
SCALE N.T.S.

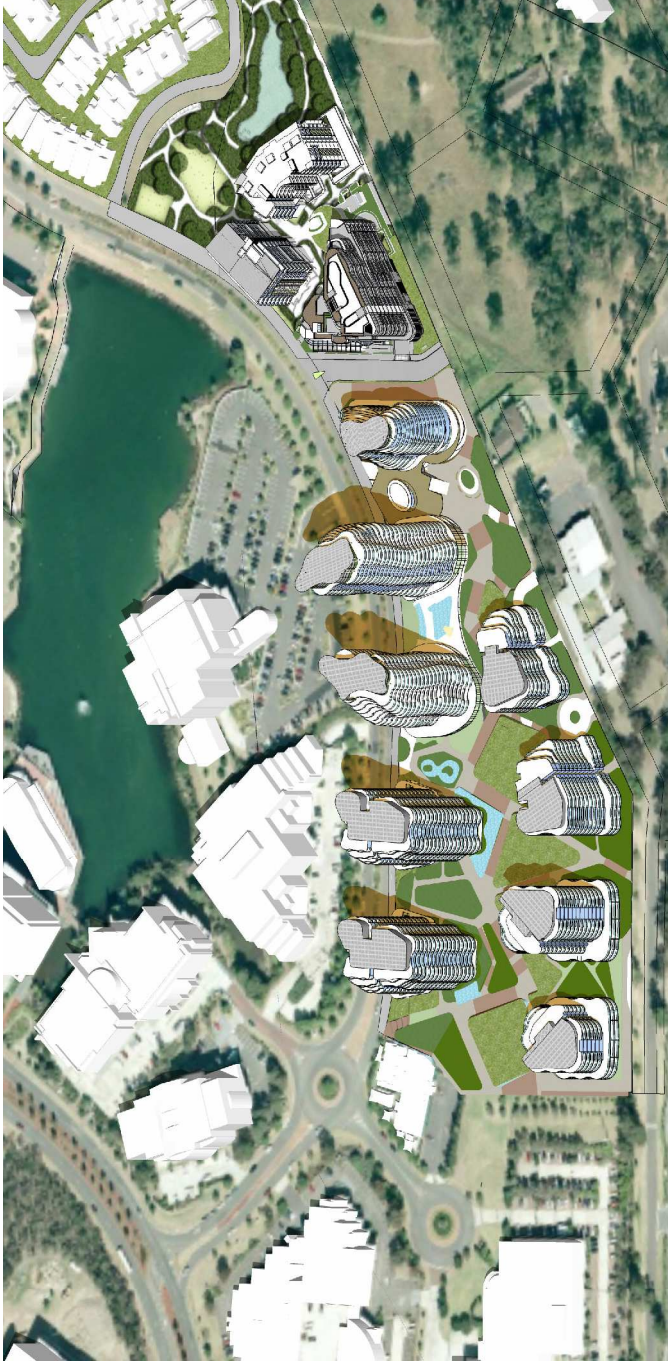
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1614 PP09-01 01



01 20 MARCH / 23 SEPTEMBER - 9 am



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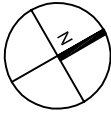
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SHADOWS FROM PROPOSAL

EXISTING SHADOWS



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PLANNING PROPOSAL

NORWEST TOWN CENTRE EAST PRECINCT - 'THE GREENS'

LOT 2103, DP 1176614, SOLENT CIRCUIT, BAULKHAM HILLS

SOLAR ACCESS DIAGRAMS - 3D

EQUINOX (1/2)

DATE 30/09/2016
SCALE N.T.S.

PROJECT NO. 1614
DRAWING NO. PP10-01
ISSUE 01

50mm

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01 20 MARCH / 23 SEPTEMBER - 1 pm



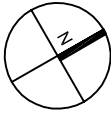
02 20 MARCH / 23 SEPTEMBER - 2 pm



03 20 MARCH / 23 SEPTEMBER - 3 pm

SHADOWS FROM PROPOSAL

EXISTING SHADOWS



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NORWEST TOWN CENTRE EAST PRECINCT - 'THE GREENS'

LOT 2103, DP 1176614, SOLENT CIRCUIT, BAULKHAM HILLS

SOLAR ACCESS DIAGRAMS - 3D

EQUINOX (2/2)

PLANNING PROPOSAL

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PROJECT NO.

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DRAWING NO.

PP11-01

ISSUE

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50mm

100mm

150mm ON ORIGINAL



01 21 JUNE - 9 am



02 21 JUNE - 10 am

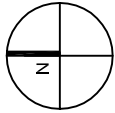


03 21 JUNE - 11 am



04 21 JUNE - 12 noon

- SHADOWS FROM PROPOSAL
- EXISTING SHADOWS



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PROPRIETOR

NORWEST TOWN CENTRE EAST PRECINCT - 'THE GREENS'

LOT 2103, DP 1176614, SOLENT CIRCUIT, BAULKHAM HILLS

SHADOW DIAGRAMS WINTER SOLSTICE (1/2)

PLANNING PROPOSAL

DATE 30/09/2016
SCALE N.T.S.

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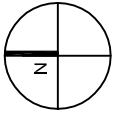


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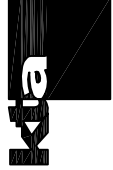
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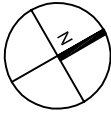
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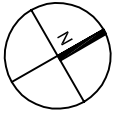


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THE GREENS COMMON, NORWEST TOWN CENTRE EAST

LANDSCAPE CONCEPT AND PLACEMAKING REPORT



PREPARED BY SITE IMAGE
WITH KRIKIS TAYLER ARCHITECTS
FOR MULPHA NORWEST
26 JUNE 2016, ISSUE H

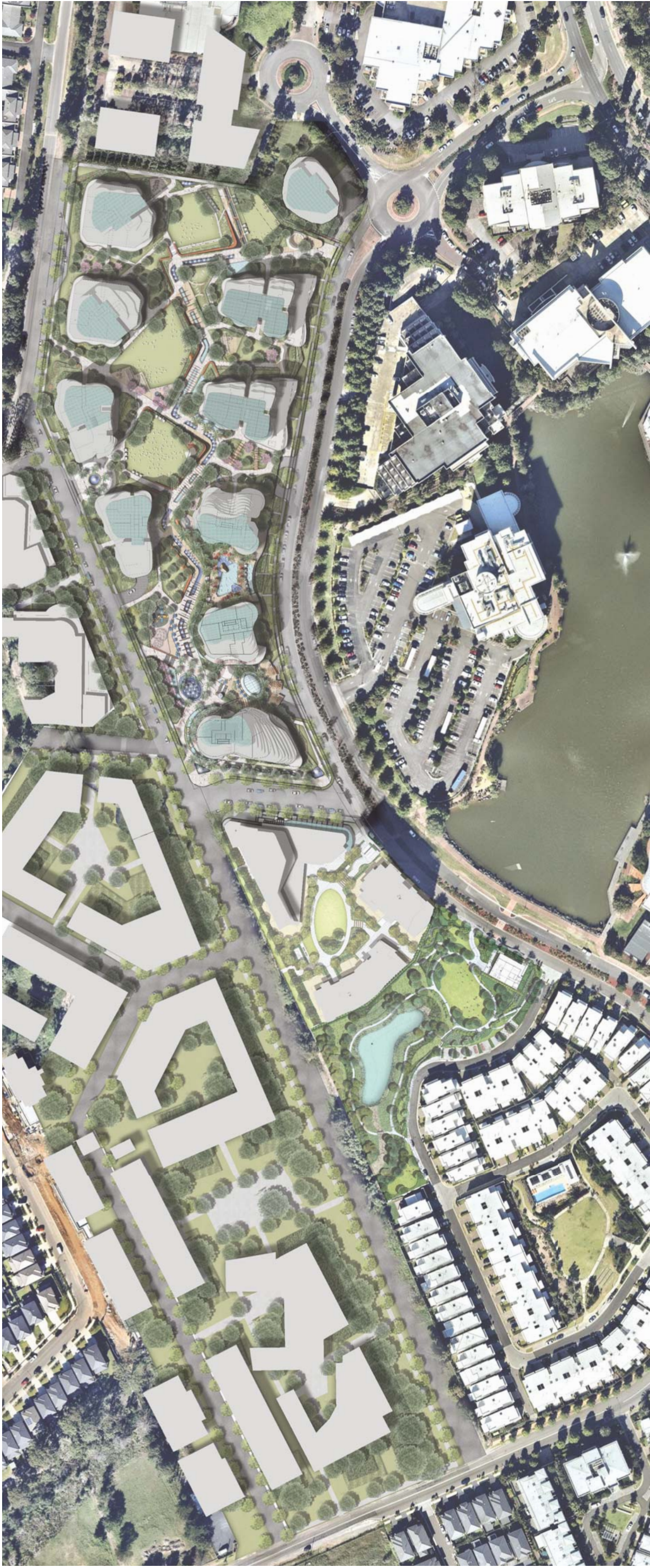


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The Greens, Norwest - Planning Proposal Amendment
Landscape Concept & Placemaking Report

1. Introduction

This Landscape and Placemaking concept report has been prepared in support of the Planning Proposal update to the previous proposal for site planning, built form, open space and landscape for the subject site. This report is to be read in conjunction with architectural, planning, traffic and supportive related documentation. The Greens site is set on the northern side of the successful Norwest Business Park, and located within easy walking distance of the new Sydney Metro Northwest railway station. Norwest has a renowned landscape, and ‘The Hills’ is known for it’s green setting, undulating landform and natural environment and waterways.

This report provides a summary of landscape analysis and design considerations in the formulation of the Masterplan proposal for the site, and how this proposal relates to the site and surrounds, and conforms with relevant Council and authorities codes and guidelines.

The landscape analysis includes landform and levels, physical, functional and visual analysis, and relationship to adjoining sites and context. The design process included consideration of a range of landscape open space options; urban form and civic identity; road network, address, access and links; relationship to landform, pedestrian circulation and access; and distribution of amenity areas and buildings, activities, facilities and landscape features.

The landscape design proposals provide a well structured hierarchy of streetscape and address, civic and residential open space and landscape. The open space provides a comprehensive range of amenity and activity areas, landscape surrounds for residential apartment towers, podium and rooftop gardens, and individual residential courtyards. Communal and public access areas provide an unusually large and diverse range of amenity that aims at creating a strong sense of community and identity. The proposals are considered to provide a comprehensive setting for the proposed buildings , be well integrated with adjoining streets and sites, and provide a high quality living environment for the proposed residential community and visitors to the site.



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SS16-3266

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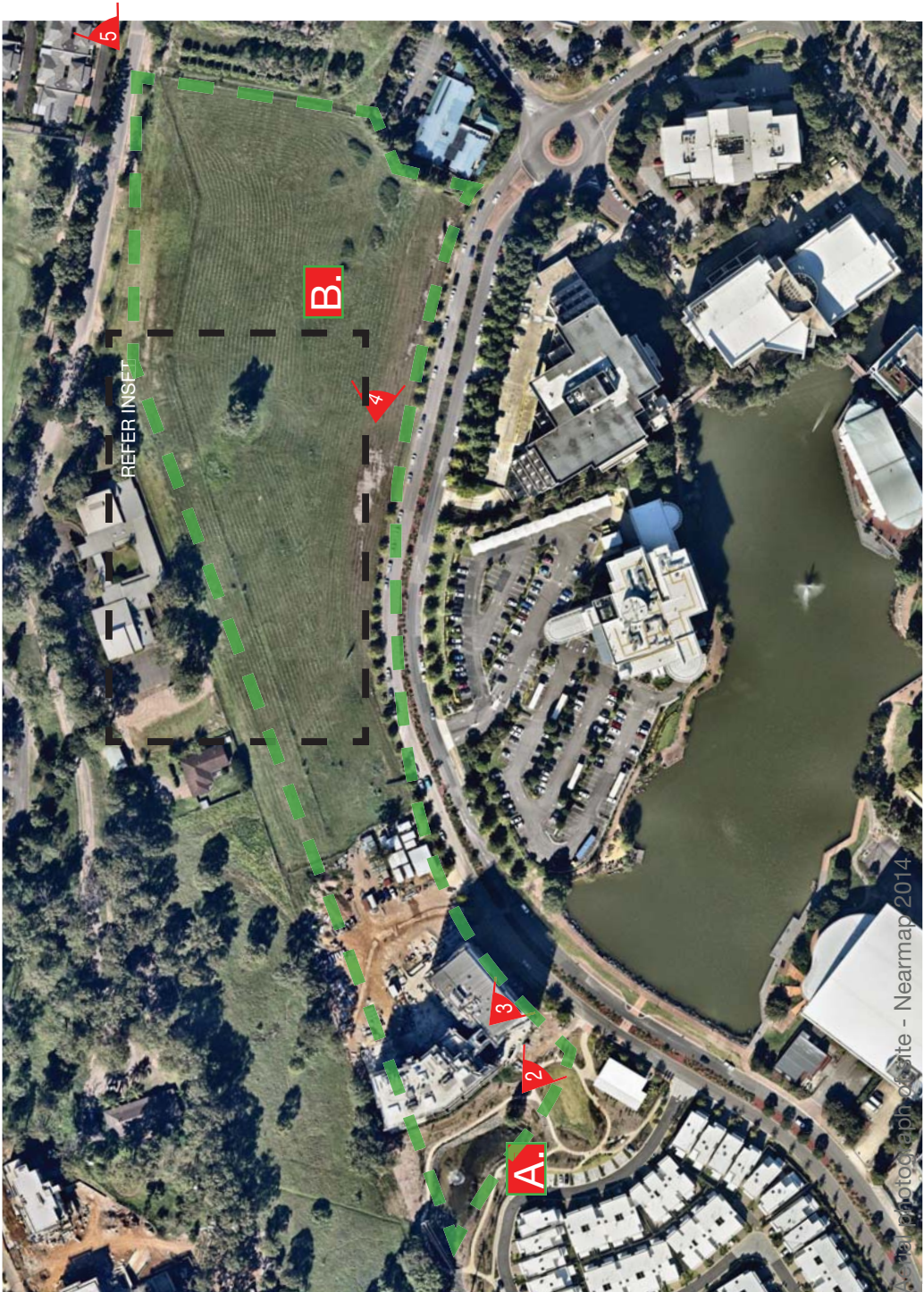
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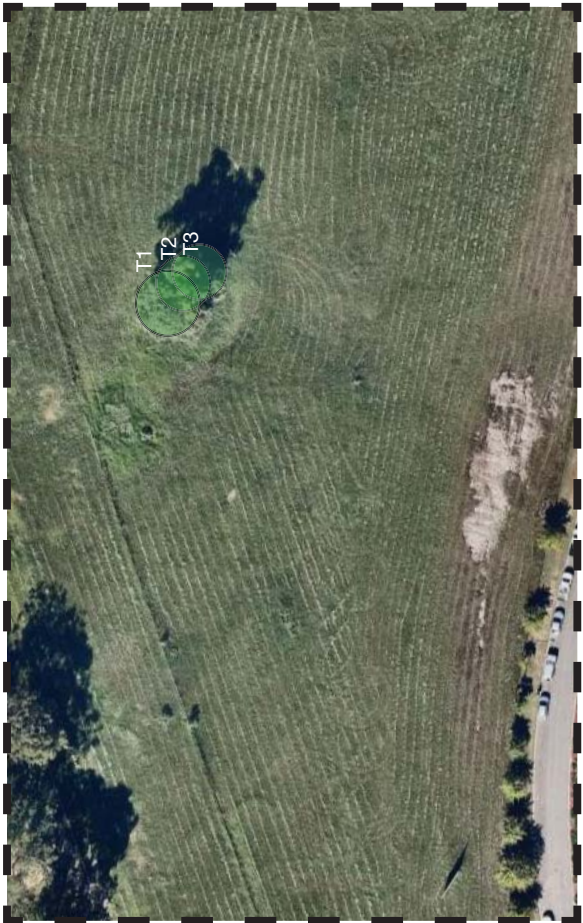
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2. Existing Landscape



The site is largely comprised of cleared grazing lands with scattered mature native trees, with Pinoak (Quercus palustris) street trees establishing along Solent Circuit. The site rises from west to east and south to north, with a high point 3/4 along the length of the site. Ecologist reports provide detailed assessment of the site trees and ecology, and provided detailed Vegetation and Ecology Management Plans. The VMP for the riparian area to western end of the site has been implemented with construction of a new riparian park, including protection of tree T26, being a Turpentine tree (Syncarpia glomulifera). Trees T1, T2, and T3 towards the west are nominated for retention and TPZ zones have been identified and documented in CAD for protection in the concept proposals.



KEY



Habitat Trees to be retained

Ecology Report - Habitat Tree Assessment Extract



A: Retained Turpentine (T26) to riparian park



B: Trees and grassy slope to Solent Circuit



Elevated view from site across lake



Street level view from site across lake



Eastern portion of Solent Circuit frontage



Spurway Drive to the north-east of the site



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3. The Greens Common - Vision Statement

The Greens Common is to create a series of open space parks and garden spaces that express the landscape heritage and cultural identity of 'The Hills' area.

The masterplan layout and patterns has similarities with the overall urban and rural landscape of 'The Hills', with it's waterways meandering through the undulating landform, and the landscape heritage having a distinctive mosaic pattern of landuses.

The distinctive contemporary landscape architecture and community buildings set in the landscape create a highly distinctive parkland with a focus on providing extensive amenity and interaction.

The extensive open space, walkways and recreation opportunities encourage an active lifestyle with a focus on broad participation and interaction for residents, to create a strong sense of community, belonging and shared identity.



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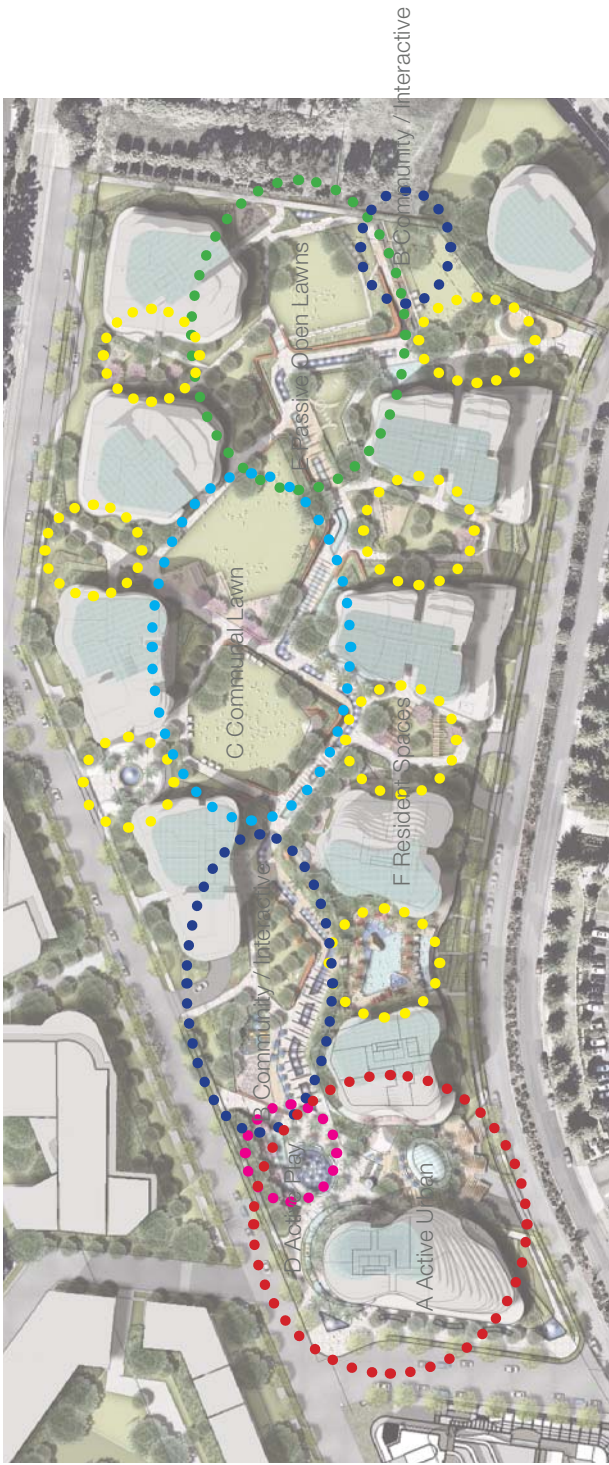
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4. Landscape Concept Principles

Design formulation included analysis of context & links, built form & shadows, levels, circulation, spatial & visual analysis. Research of innovative outcomes & amenities, demographics and user requirements guided outcomes.



4.1 PHYSICAL AND SPATIAL ANALYSIS



4.3 OPEN SPACE TYPOLOGY



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Placemaking and contemporary design reference the landscape and identity of The Hills.
An exciting diversity of open space amenity integrates the physical, user requirements and functional analysis.



4.4 AMENITY & RECREATION

5. Central Promenade and Urban Stream

The central urban stream and accompanying promenade provide a meandering walkway to access the many features of the park and access residential lobbies, retail and commercial areas, and community undercroft spaces below the landscape terraces.



Activated walkway, with sequence of active and visual destinations



Accompanying water features change in character along the promenade, providing interest, movement and noise.



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6. The Greens Common - Landscape Features



A. Active street of cafes and Gateway Plaza



B. Children's water play area; water cascades / cafes



C. Adventure Play and family seating lawn adjacent



D. Amphitheatre lawn, stage & multi-purpose event lawns



E. Large open lawn areas for family picnics & general play



F. Community/ activity/ amenity rooms below lawn areas



G. 'Community Gardens', & Garden Club shelters



H. Outdoor terrace cafes / Activated Streetscape



I. Cross site link, & destination / entertainment terraces



J. Resort rooftop pool and gardens / infinity edge



K. Urban stream as walkway feature along promenade



L. 'Residential Gardens' as peaceful respite areas



M. Sculpture garden and gallery breakout area



N. Passive recreation and family area / barbeques



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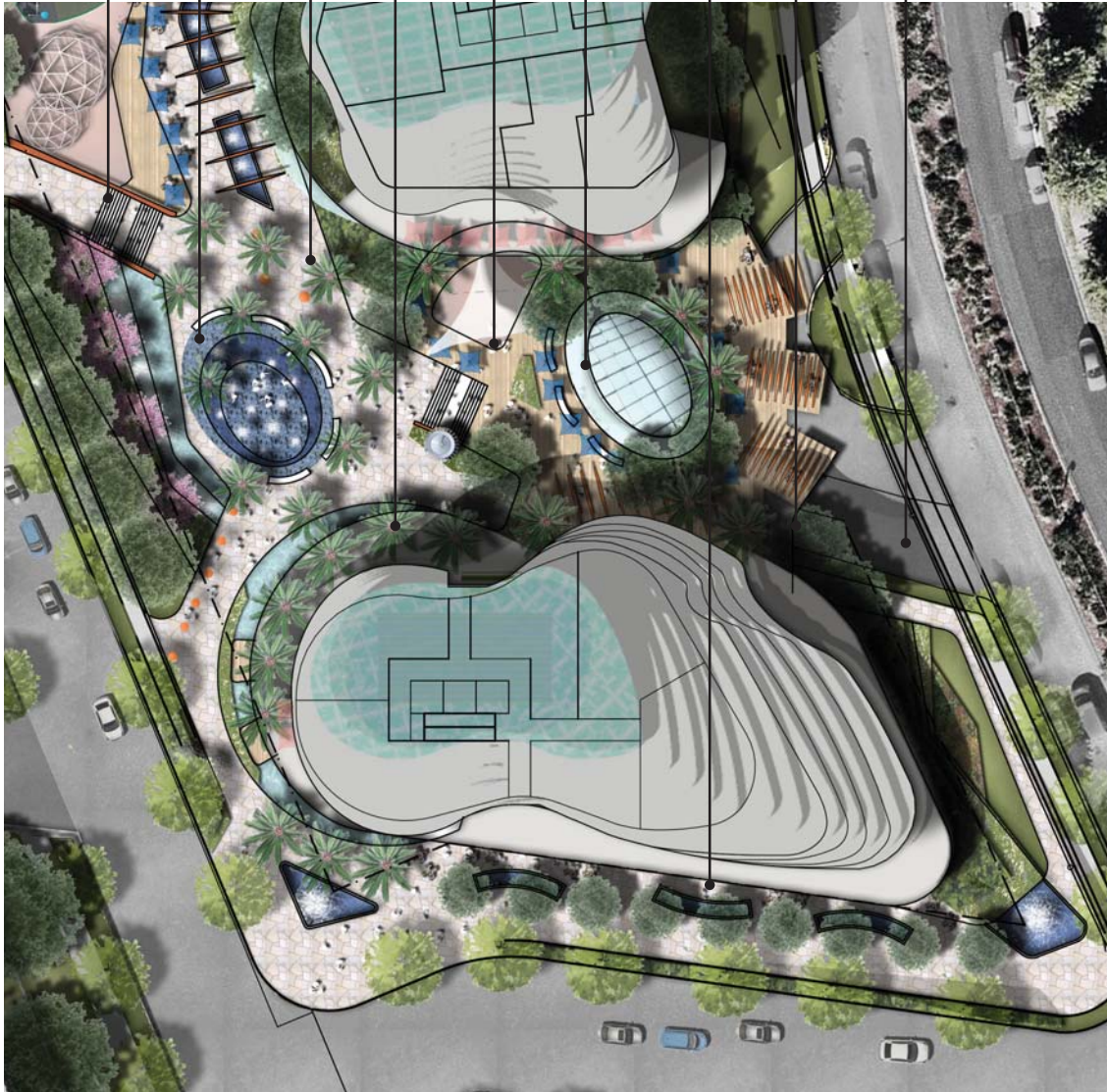
7.1 ‘The Hub’ Entertainment, Leisure and Civic Spaces



An active cafe, retail, entertainment and meeting area that provides a vibrant place for families, lunch, drinks and dinner, and a general hub of activity.

Features include:

- Streetfront cafes and fountains / cross site retail link;
- Water play and adjacent cafe, florist, family seating;
- Vibrant restaurant / cafe / drinks upper terrace;
- Signature pavilion as signature centrepiece to are;
- Cantilevered seating pods with lake/street outlook.



Cross site pedestrian link / stair

Water play area and adjoining water cascades with seating edge

Lower cafe and florist relating to water play and community gardens

Cafe terrace set into the water of the adjacent urban stream water feature

Feature playground to terrace to activate cafe overlooking water play / promenade

Signature pavilion building with restaurant opening to north & south active areas

Cafes and retail to the streetfront, terraced in response to the slope of the frontage

Gym on 2 levels, with breakout terrace for meeting and social activities

Porte cochere and feature residential address landscape and street trees

Precinct Plan



Design Imagery



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7.2 Adventure Children's Zone



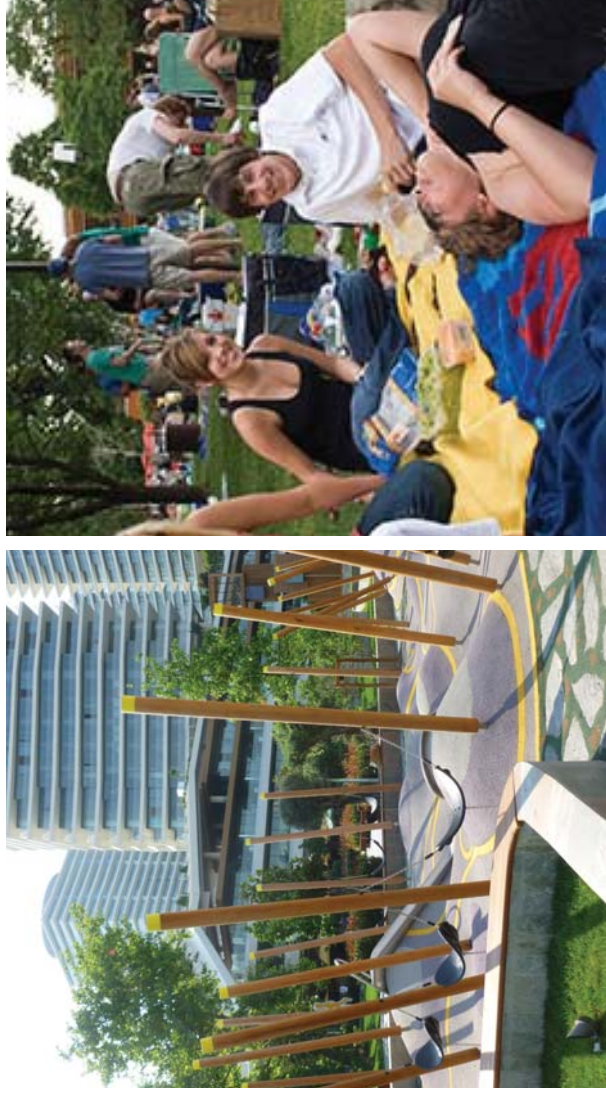
Significant adventure play structures as central visual and activity focus, with allied family seating lawn.

Features include:

- Colourful, vertical climbing structures as feature;
- Broad spectrum of play elements for all ages;
- Secure fencing hidden in landscape edge;
- Broad adjoining lawn for overlooking family seating.



Precinct Plan



Design Imagery

7.3 Resident Resort Area



Resort pool area for residents, with secure access and extensive poolside facilities, seating, amenity.

Features include:

- Secure access / screening from adjacent main walk;
- Main family pool with sheltered seating;
- Lush planting backdrop and resort character;
- Signature series of pool pavilions, alcoves, seating areas all set in lush landscape setting



Walkway continues with allied 'Urban Stream

Secure access through strong green screen as backdrop / visual screen

Shallow zones with water play to provide for supervised children's play

Pool pavilion building set into pool edge with 'swim up' service potential

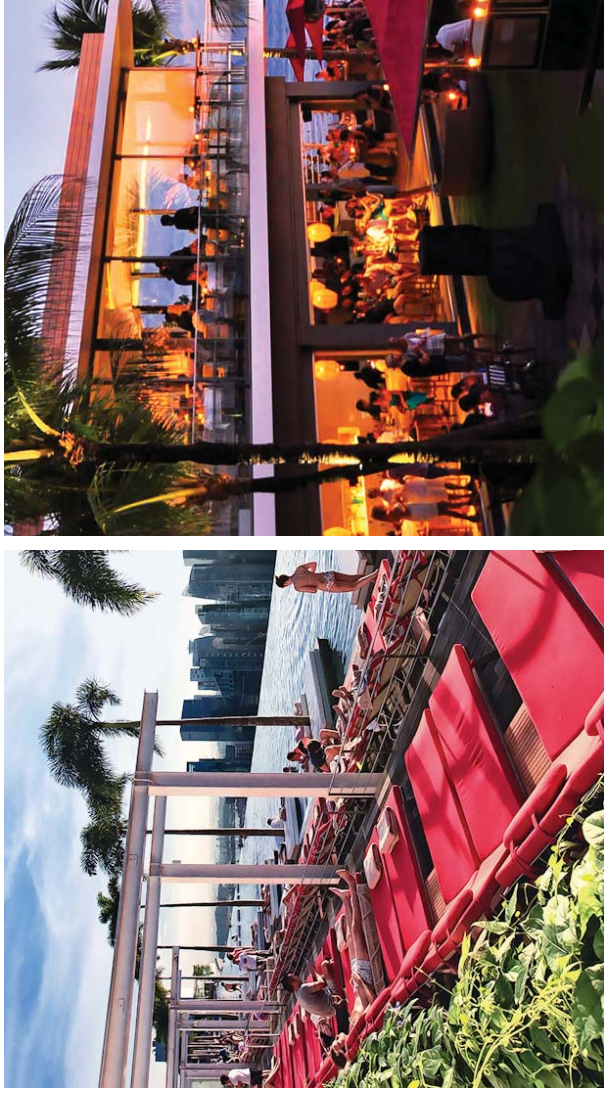
Extensive seating shelters that are visual features and shading / accousitc canopies

Distinctive second pool potentially with glass front seen in view from street

Terraces to streetfront with landscape to create an activated residential street

Street trees to reinforce the existing avenue character of Solent Circuit

Precinct Plan



Design Imagery

7.4 ‘Central Lawn’ general recreation and event space



Large entertainment / general recreation lawn, with overflow events area to north, together creating a significant communal open space for residents.

Features include:

- Gentle sloping lawn down to stage setup area;
- Shaded lawn areas behind as event setup areas;
- Provisions for temporary stalls and event activities;
- Community rooms below southern edge of lawn.



Precinct Plan

Feature shared residential setbackdown, providing service access to lawn area

Buffer planting to ground floor apartment garden terraces

Footings and services provisions for temporary kiosks for events

Dual path network with stairs and accessible sloping path access

Existing tree retention possible as shown, but suggest removal and replacement

Broad sloping lawn with overhead grid of downlights to create ‘outdoor room’ effect

Stage setup facilities to lower lawn area

Walkway continues with allied ‘Urban Stream’ as feature to breakout seating



Design Imagery

7.5 ‘Picnic Park’ for families and play



Flexible use lawn with picnic facilities to activate weekend gathering and family barbeques.

Features include:

- Gentle sloping lawn with scattered shade trees;
- Picnic seating and shelters / shade canopies;
- Fixed tables and chairs and barbeque facilities;
- Signature tree grove and walkway sculpture



Landscaped setback to residential and ground floor apartment gardens

Barbeques and shelters to paved area

Open lawns for informal use and picnics

Significant sculpture as destination / turning point for pedestrian walkway

Possible specific activity areas such as boche court / table tennis, badminton

Community rooms / toilets under lawn open out onto adjacent promenade

Walkway continues with allied ‘Urban Stream’ as feature to breakout seating

Precinct Plan



Design Imagery

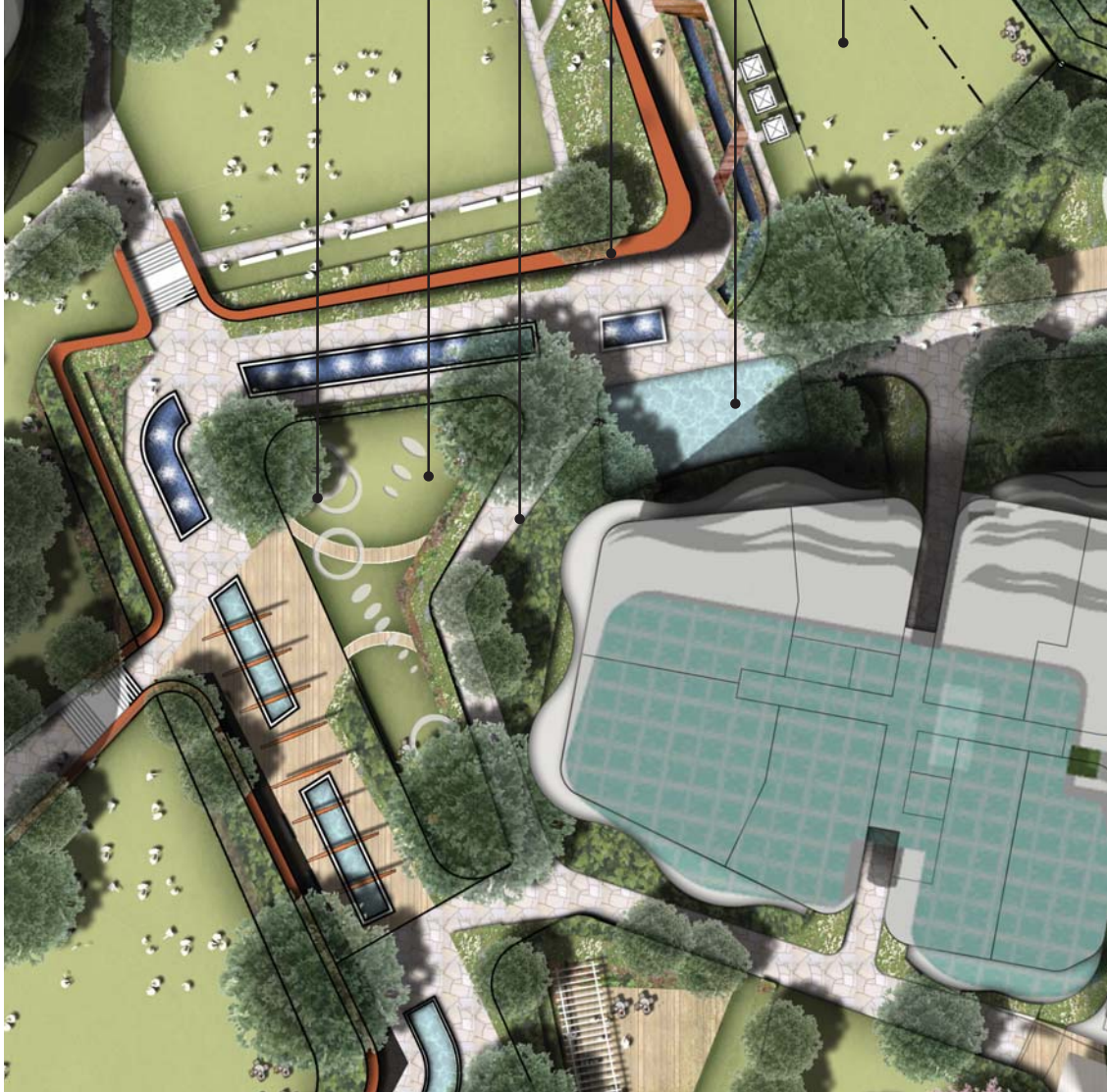
7.6 ‘Sculpture Park’ Reflection + Sculpture Exhibit Area



Focal sculpture garden area, with adjacent community rooms under lawns able to have gallery events, art classes and functions.

Features include:

- Fixed public art elements in water features / gardens;
- Pedestals / lighting for temporary works / exhibitions;
- Seating and gathering areas integrated with displays;
- Community rooms opening onto sculpture gardens.



Permanent sculptures integral with water features and thematic story of site

Pedestals for temporary installations and art / sculpture exhibitions

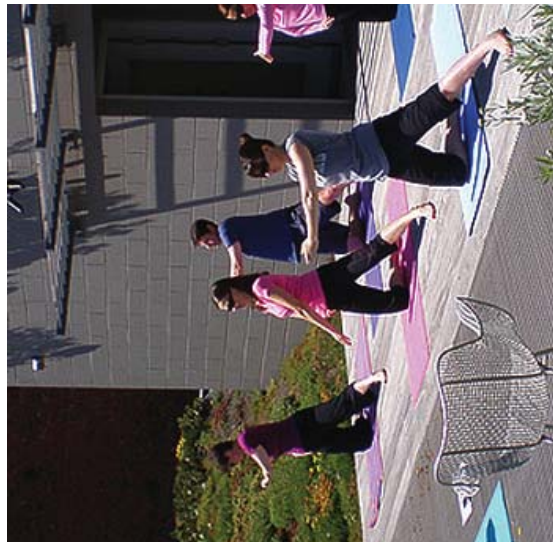
Loop path link allowing direct access, and walk around of sculpture garden

Gallery and art class uses for community rooms under lawns above

Broad water feature with pedestals and lighting for sculpture displays on water

Reflection terrace for Yoga, Tai Chi, and outdoor group exercises

Precinct Plan



Design Imagery

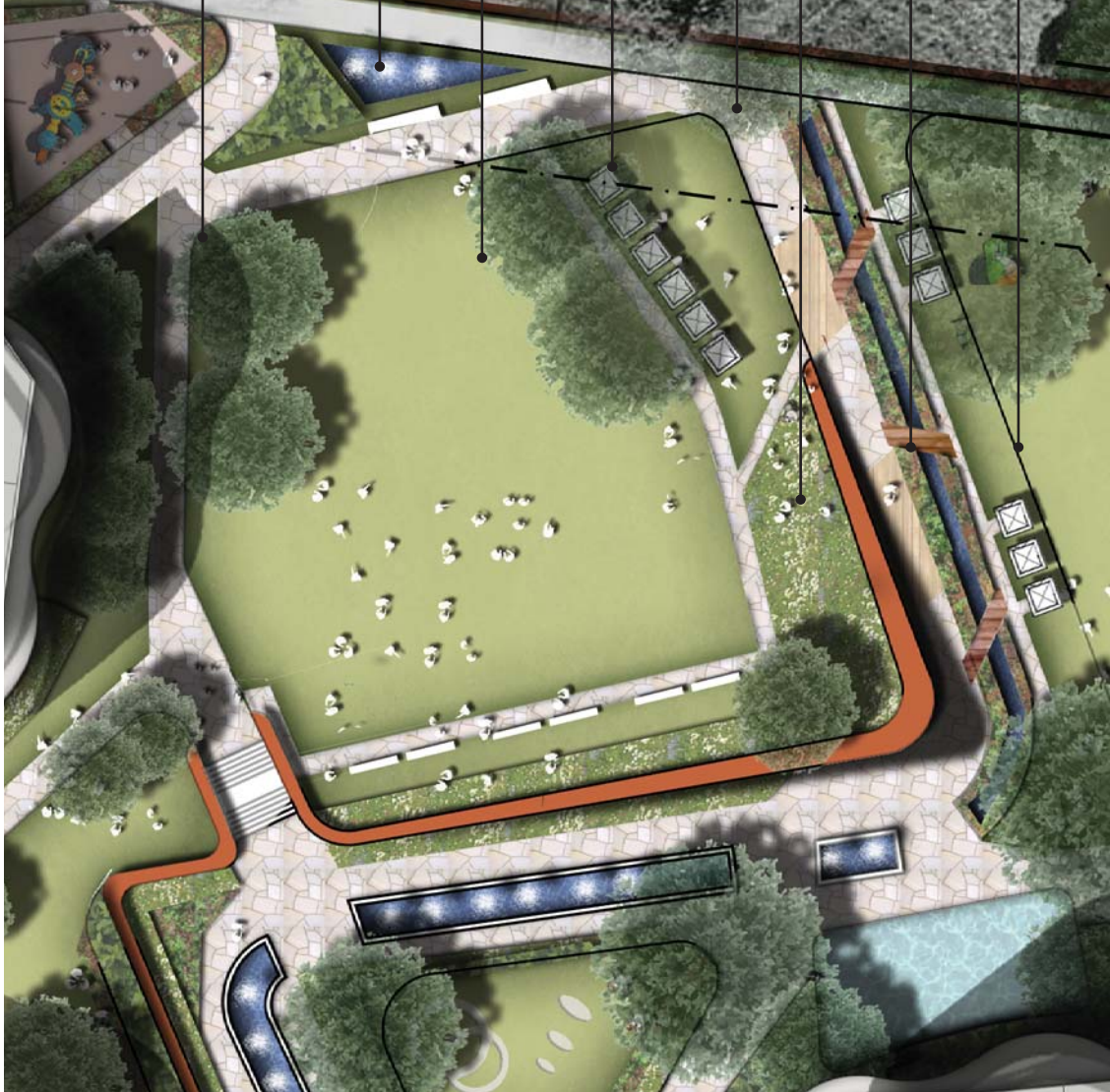
7.7 ‘The Backyard’ - Community Gardens + Recreation Area



Community Gardens with garden club shelters, with defined planting areas with identification for specific ‘garden groups’. Market stalls provision for events to sell produce.

Features include:

- Terraced planters and access walkways as feature;
- ‘Men’s Shed allied with Gardening supplies / storage;
- Adjacent canopy trees scattered over open lawn;
- Adjacent lower lawns area with shelters for family gatherings / barbeque informal activities



Precinct Plan

Broad adjoining lawn leading up to seating overlooking the area

Water feature as notional destination and turning point for promenade walking

Open lawn with scattered canopy trees for general use, encouraged as a community space for weekend stalls / events

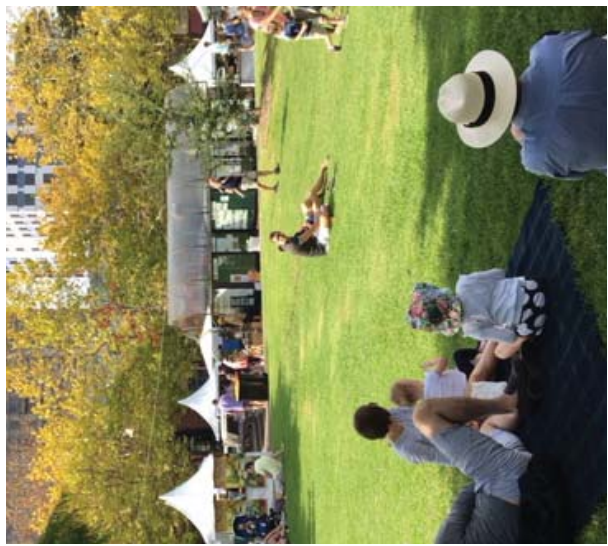
Gardening Club shelters and storage and allied seating, display and gathering area.

Potential for stalls along promenade

Community gardens and paths, elevated above promenade below

‘Urban Stream’ created by series of water features / landscapes allied with walkway

Shelters for family gatherings and barbeque type informal activities



Design Imagery

8.0 The Greens Common - Placemaking and Public Art

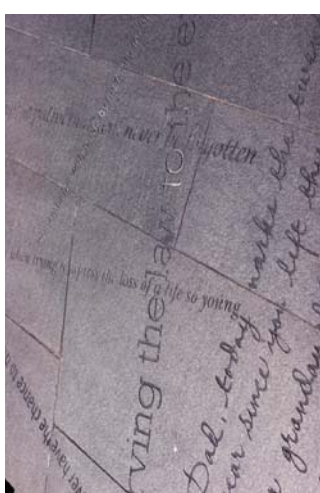
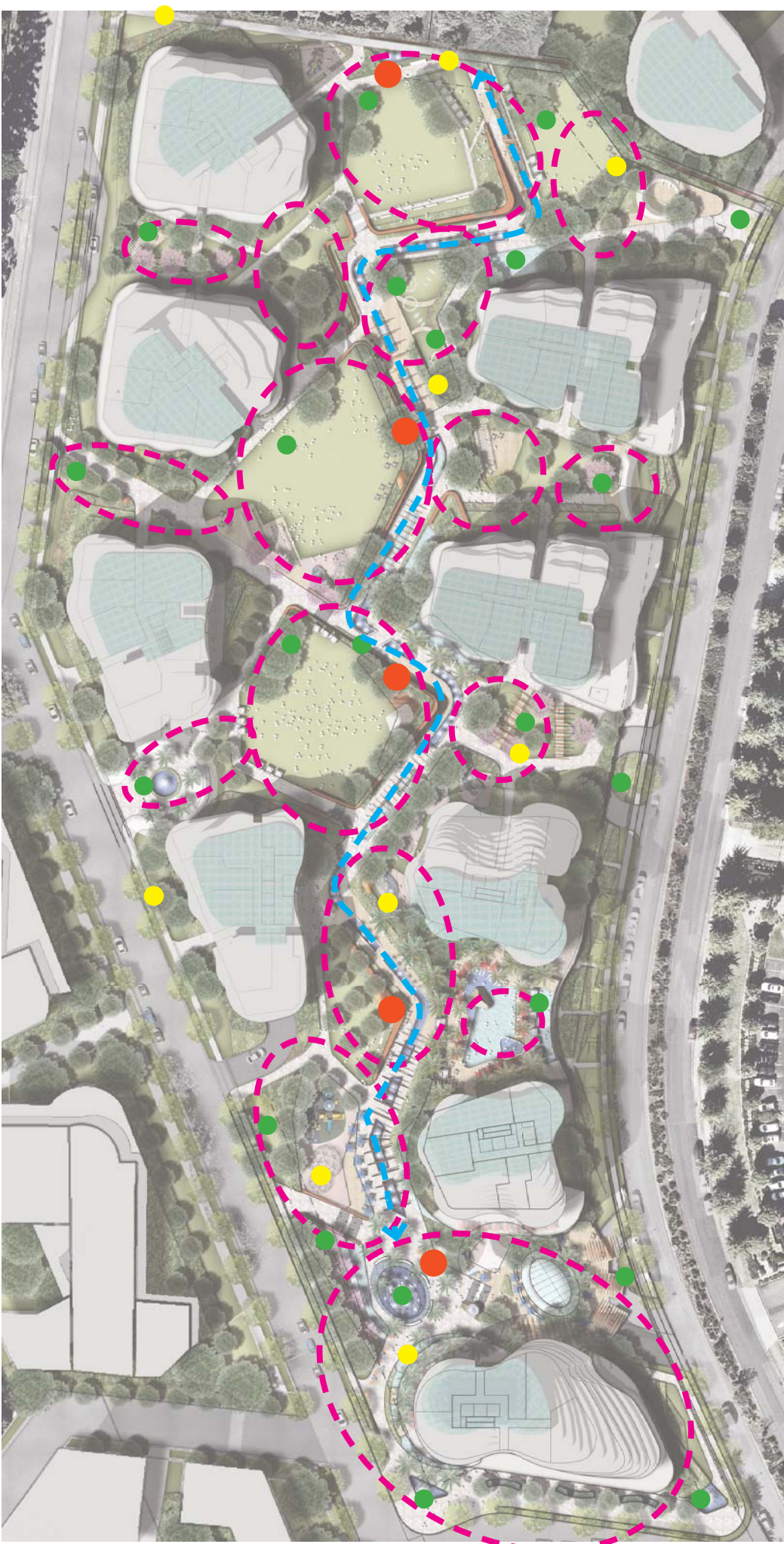
'The Greens Common' naming references the traditional 'Common' of shared pastures, orchards, market gardens and 'Village Green' as a parkland area for community meeting, leisure and recreation.

The primary placemaking features of the space are:

- the meandering urban stream and strong allied landform echoes the undulating hills and waterways of 'The Hills';
- the mosaic forms of open space and civic spaces referencing the natural & rural heritage & urban landuse patterns of the area;
- vertical sculptural elements provide signature focal destinations along the central promenade. These have environmental themes, providing 'lantern' lighting & wayfinding elements.

The 'sense of place' created collectively by the landscape, water features, public art and interpretive features distinctively reinforces the landscape identity of 'The Hill's' with a striking contemporary form that is clearly legible and has a clear storyboard and thematic.

- (---) Landscape precinct
- ↔ Urban Stream / Promenade Walkway
- 'Lantern' Elements as vertical markers along path
- Public Art potential locations
- Heritage Interpretation potential locations



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9. The Greens - Landmark for The Hills

The open space for The Greens has been prepared to respond to the specific and unusual opportunity provided by large scale of this site and the volume of open space relative to built form. The Greens Common creates a striking contemporary landscape with an extensive range of spaces and facilities that provide comprehensive amenity for not only residents, but also in part for broader use by the community.

The development of public art, placemaking and landscape features was prepared with consideration of the specific site context and landscape design themes, and the distinctive range of architectural expression. Placemaking has integrated the identity and context of 'The Hills', and of the distinct civic and landscape identity of Norwest and Bella Vista resulting from the Sydney Metro Northwest rail project.

The Greens Common proposes a residential community open space without peer in Australia, providing a world class outcome and outstanding project precedent for The Hills Shire Council.



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Mulpha Norwest

The Greens Residential
Development

Norwest Town Centre East Precinct
Norwest Business Park



Traffic and Parking Report for Amended Planning Proposal

June 2016

Mulpha Norwest

The Greens Residential Development
Norwest Town Centre East Precinct
Norwest Business Park

Traffic and Parking Report for Updated Stage 1 Master Plan

Quality Assurance Statement

Prepared by:

Fred Gennaoui



Principal Consultant

Reviewed by:

Mark Apeldoorn



Director

Approved for Issue by:

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Principal Consultant

Status: Finalreport

Date: 10 May 2016

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Appendix A

Existing Traffic Volumes

Appendix B

Concept of Carriageway Capacity and Level of Service

Appendix C

Guidelines for Evaluation of Intersection Capacity

1. Introduction

1.1 Background

The Norwest Town Centre East Precinct known as 'The Greens' is the final stage of the development of the Norwest Town Centre site. Mulpha-Norwest is currently developing a mixed use residential development off Solent Circuit at Norwest. The development comprises the Peninsula (West Precinct), Central Park (Central Precinct) and the green (East Precinct).

Approval was granted by Council for the development of 328 residences in The Greens precinct including some 88 townhouses and 240 apartments within six (6) buildings. The application was the subject of a parking requirement and traffic assessment report (Gennaoui, 2013). Since then approval has been granted to increase the height and number of units in Buildings A1 and A2 to 100 units. Furthermore approval was granted to replace 25 townhouses west of the new link road with a new building A3 to accommodate 76 apartments and 400 m² of neighbourhood shops.

Mulpha-Norwest is currently seeking to amend the approved Master Plan to provide on the eastern side of the new Central roadway, nine (9) high rise mixed use residential and commercial buildings. The total number of units including the approved Buildings A1 to A3 is anticipated to be 1,038 on the site. Some 6,000 m² GFA of commercial use will also be provided.

TDG in association with Gennaoui Consulting Pty Ltd has been commissioned to investigate the traffic implications and parking requirements of the latest Planning proposal, and associated access.

1.2 Site Location and Study Area

The site of the proposed developments is shown on **Figure 1**. The Greens precinct will be situated on the northern side of Solent Circuit. Access to all accommodation will be via Solent Circuit and Spurway Drive to underground car parking. The immediate study area has been defined as the area bounded by and including Norwest Boulevard, Solent Circuit and Fairway Drive.

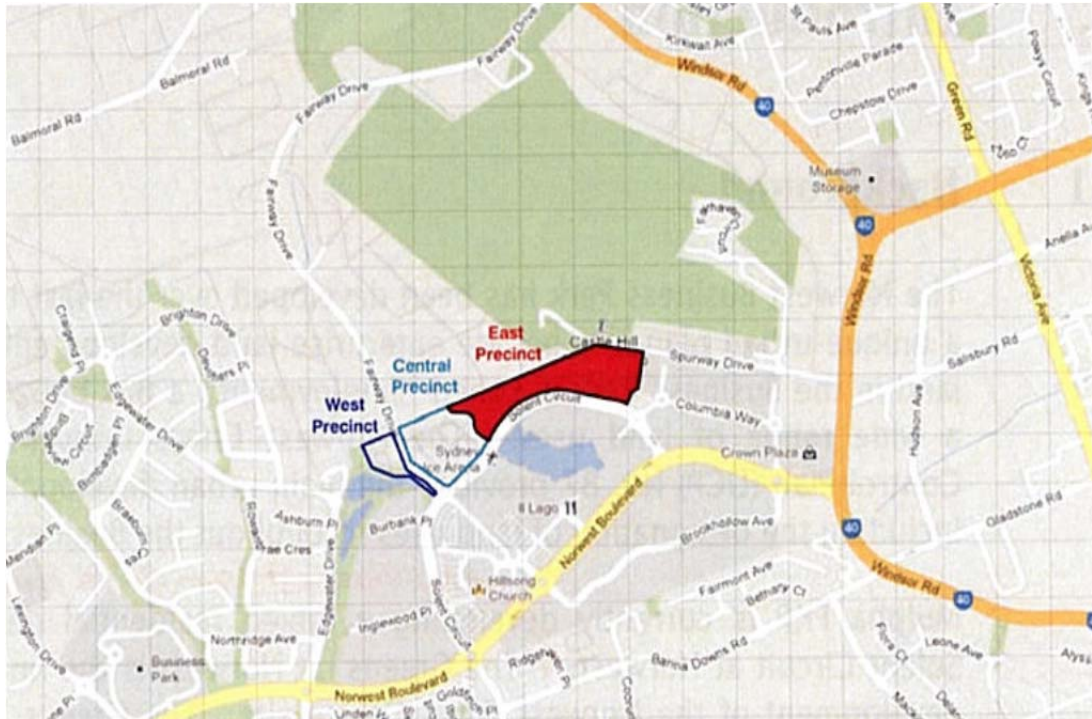


Figure 1: Location of the Greens Estate

1.3 Study Approach

The approach adopted to assess the traffic impacts of The Greens proposed development submitted with the Planning Proposal and Master Plan was previously agreed with Council's traffic manager and included the following steps:

- The estimated car parking requirements will be determined in relation to RMS and Council requirements. In this regard the impact of public transport, including the rail effects, on traffic demands and car parking will be determined for this planning proposal;
- Assessment of existing traffic conditions using traffic counts previously carried out at the intersections of Norwest Boulevard with Solent Circuit (roundabout) and with Solent Circuit East (T junction), and also at the roundabout located at the junction of Solent Circuit with Fairway Drive;
- Estimate traffic generation and distribution of each type of residential dwelling and commercial land use proposed in the Master Plan; a comparison has been made between this proposal and the previous approved Master Plan;
- Assessment of traffic impacts of proposed Master Plan on all major and local approach roads and critical intersections to assess their suitability to accommodate future traffic; and
- Assessment of access and egress to the site.

1.4 Scope of Report

This report summarises the findings, conclusions and recommendations with respect to the parking requirements and traffic impacts of proposed Master Plan. All major access to the estate has also been assessed.

2. Access and Parking

2.1 The Proposal

Mulpha Norwest is currently developing a residential estate, on the northern side of Solent Circuit at the Norwest Business Park, as shown in **Figure 1**. The following part of the development has been completed or is under construction:

- The Peninsula (West) Precinct:- the western side of Fairway Drive with access from Fairway Drive. Completed with 11 detached dwelling, 12 townhouses and 12 apartments;
- Central Park (Central) Precinct:- Construction completed between Fairway Drive and the Dam; this area consists of 36 detached dwellings and 50 townhouses. Access is provided onto Fairway Drive (all movements) and Solent Circuit (left turn in and out only);
- The Greens (East) Precinct:- Buildings A1 to A3 accommodating 176 apartments and including 400 m² of neighbourhood shops;

Mulpha Norwest now propose to amend the existing Master Plan for the eastern part of the estate to provide some 864 new apartments in nine buildings (B to J) as illustrated on **Figure 2**. Buildings B to D will also include some 6,000 m² of commercial development.



Figure 2: The Proposal

The proposed access and parking locations shown on the plan in **Figure 2**, prepared by Krikis Tayler Architects are described below:

- Vehicular access to and from Buildings B and C will be via a common driveway off Solent Circuit;

- Vehicular access to and from Buildings D, E and F will be via a common driveway off Solent Circuit.
- Vehicular access to and from Buildings G and H will be via a common driveway off Spurway Drive.
- Vehicular access to and from Buildings I and J will be via separate driveways off Spurway Drive;
- New Link Road consisting of an 8.5m carriageway with 3.5m footpath on both sides to provide access to Spurway Drive from Solent Circuit.

The median in Solent Circuit will be retained along the whole length of the development thus restricting all access to the estate to left turn in and out only. All driveways off Solent Circuit will be designed in accordance with Council's requirements.

In addition to providing some 864 new apartments in nine buildings (B to J) as illustrated in **Figure 2**, the proposal will also include the provision of 2,000 m² of offices, a 1,500 m² Gymnasium, retail and restaurant/coffee covering 2,000 m² and a Child Care Centre catering for 50 children (500 m² GFA). This information is summarised in **Table 1**.

Land Use Residential	Access from Solent Circuit Buildings B to F	Access from Spurway Drive Buildings G to J	Total
Residential			
1 Bedroom Units	96	69	165
2 Bedroom Units	311	145	456
3 Bedroom Units	171	72	243
Total Units	578	286	864
Commercial			
Office/medical	2,000	-	2,000
Gymnasium	1,500	-	1,500
Retail	1,100	-	1,100
Restaurant	900	-	900
Child Care Centre	500	-	500
Total GFA m²	6,000	0	6,000

Table 1: Proposed Solent Circuit Residential Development

2.2 Parking Requirements

2.2.1 Council's Requirements

Council's approval for the current Master Plan of the residential development on the Greens Estate has accepted the following parking provisions for apartments:

- **Residential:**
 - 1 space per 1 bedroom units;
 - 1.5 spaces per 2 bedrooms units;
 - 2 spaces per 3 bedrooms units; and
 - 2 visitor spaces per 5 units.
- **Commercial:**
 - Office:- 1 space per 25 m² GFA;
 - Gymnasium: -1 space per 25 m² GFA;
 - Retail:- 1 space per 18.5 m² GLFA;
 - Restaurants:- During daytime 1 space per 25 m² GFA; After hours 15 spaces per 100 m² applies; and
 - Child Care Centre: 1 space per employee and 1 space per 6 children. The proposed Centre is likely to cater for 50 children looked after by up to 10 staff.

Applying the above rates, some 1,681 spaces including visitor parking spaces would be needed for the apartments in the updated Master Plan to comply as noted in **Table 2**. An additional 253 spaces are required for the office and retail components of this Master Plan for the area to the East of the central roadway.

Residential Parking Requirements		Council accepted Rates		RMS Sepp 65	
Type of Units	Units	Rates	Spaces	Rates	Spaces
1 Bedroom	165	1	165	0.6	99
2 Bedrooms Small and Medium	456	1.5	684	0.9	410
3 Bedrooms	243	2	486	1.4	340
Sub Total	864		1,335		850
Visitors		0.4	346	0.2	173
Total			1,681		1,022

Commercial Parking Requirements		Council DCP		RMS Sepp 65	
Office	2,000	1 per 25 m ²	80		80
Gymnasium	1,500	1 per 25 m ²	60		60
Retail	1,100	1 per 18.5 m ²	59		59
Restaurant	900	1 per 25 m ²	36		36
Child Care Centre	500	1 per staff and 1 per 6 children	18		18
Total	6000		253		253
Overall Total Spaces			1,934		1,276

Table 2: Council and RMS Parking Requirement for Development

At night time and on weekends, the restaurants would require about 135 parking spaces. During those periods, the offices, retail and child care centre are generally closed or operate with much reduced staff levels. It would therefore be appropriate for the restaurants patrons and staff to have access to the spaces required by these developments during the day.

2.2.2 SEPP 65 Requirements

Recent changes to SEPP 65 include a number of standards which if met cannot be used as grounds for refusal of a development application. These are contained in Clause 30 (1) (a) which relates to parking:

“If the car parking for the building will be equal to, or greater than, the recommended minimum amount of car parking specified in Part 3J of the Apartment Design Code” which states for development in the following locations:

- *On sites that are within 800m of a railway station or light rail stop in the Sydney Metropolitan area; or*
- *On land zoned, and sites within 400m of land zoned B3 Commercial Core, B4 Mixed Use or equivalent in a nominated regional centre;*
- *The minimum car parking requirement for residents and visitors is set out in the Guide to Traffic Generating Developments, or the car parking requirement prescribed by the relevant council, whichever is the less”*

The site is well within 800m of the Norwest Railway Station which is under construction. SEPP 65 therefore could apply. It should be noted that the railway station is certain and would most probably be operational by the time any of the proposed residential flat buildings B to J were ready for occupation.

The Guide to Traffic Generating Developments (RTA, 2002) stipulates the following parking requirement for High Density Residential Flat Buildings (Metropolitan Sub-Regional Centre)

- 0.6 space per 1 bedroom unit;
- 0.9 space per 2 bedrooms units;

- 1.4 spaces per 3 bedrooms units; and
- 1.0 visitor space per 5 units.

Applying the above rates, some 1,022 spaces would be required for the proposed residential component of the development as noted in **Table 2**. A total of 1,276 spaces would thus be required to comply with the requirement of SEPP 65.

2.3 Proposed Parking Supply

The following rates were adopted for the residential component of the development:

- 1.0 space per 1 bedroom units;
- 1.5 spaces per 2 bedrooms units;
- 2.0 spaces per 3 and 4 bedrooms units; and
- 1.0 visitor space per 5 units.

It should be noted that the proposed parking rates for one and three bedrooms apartments are similar to Council rates. The proposed variation applies for visitor spaces which are lower than Council's accepted rates but equal to those in the RMS Guide to Traffic Generating Developments (RTA, 2002).

The usage of available commercial spaces during the evenings and weekends is not affected. Thus 1,761 spaces would be required if the proposed rates were adopted; 1,508 spaces for residents and their visitors, and 253 spaces for the commercial components as noted in **Table 3**.

Proposed Parking Supply			
Residential Parking Requirements			
Type of Units	Units	Rates	Spaces
1 Bedroom	165	1 per unit	165
2 Bedrooms Small and Medium	456	1.5 per unit	684
3 Bedrooms	243	2.0 per unit	486
Sub Total	864		1,335
Visitors		1 per 5 units	173
Total			1,508
Commercial Parking Requirements		m ² GFA	
Office	2,000	1 per 25 m ²	80
Gymnasium	1,500	1 per 25 m ²	60
Retail	1,500	1 per 18.5 m ²	59
Restaurant	500	1 per 25 m ²	36
Child Care Centre (50 children, 10 staff)	500	1 per staff and 1 per 6 children	18
Total	6,000		253
Overall Total Spaces			1,761

Table 3: Proposed Parking Supply

Whilst the proposed parking supply of 1,761 spaces is lower than Council's requirement, it is well in excess of the requirements of SEPP 65 and is therefore considered appropriate given its proximity to the forthcoming Norwest railway station.

3. Existing Traffic Conditions

3.1 The Road Network

Access to all areas within the Norwest Business Park is provided by Norwest Boulevard, which connects Windsor Road to Old Windsor Road then onto the M7 Motorway. The main access to the proposed residential development will be via Solent Circuit; access to buildings G to J will be provided by Spurway Drive.

Solent Circuit has a four lane divided carriageway. At Burbank Place it has a continuous median restricting access to and from Burbank Place to left turning only movements.

Spurway Drive has a two lane carriageway providing access to a large number of residential dwellings between Windsor Road and the Golf Club. It will be extended along the northern boundary of the Greens Estate to connect with the proposed Central Roadway. Access from and to Windsor Road is restricted to left turn in and out of Spurway Drive.

Fairway Drive provides access to the Balmoral Estate to the north of the Business Park. It has a four-lane undivided carriageway including parking on both sides. It is controlled by a one lane circulating roundabout at Solent Circuit; the roundabout also provides access to the Hillsong site.

Norwest Boulevard has a four lane divided carriageway between Windsor Road and Old Windsor Road. Two-lane circulating roundabouts control most intersections along Norwest Boulevard, between Windsor Road and Old Windsor Road. Windsor Road has a four lane divided carriageway excluding long turning lanes at Norwest Boulevard and Showground Road.

Traffic signals are installed at the intersections of Norwest Boulevard with Windsor Road and with Old Windsor Road. The NSW Roads & Maritime Services (RMS) has recently provided additional capacity at this location by providing a third right turning lane from Norwest Boulevard into Windsor Road.

3.2 Operation of Existing Road System

3.2.1 Traffic Counts

The base peak hourly volumes obtained in August 2013 (Gennaoui, 2013), shown in **Appendix A**, at the following intersections were adopted for this study:

- Norwest Boulevard with Windsor Road (signalised);
- Norwest Boulevard with Solent Circuit (roundabout);
- Solent Circuit with Fairway Drive (roundabout);
- Norwest Boulevard with Solent Circuit east (T-junction).

Traffic volumes peaked between 8.00 and 9.00 am and from 4.30 to 5.30pm during the morning and afternoon respectively.

3.2.2 Operation of Major Approach Roads

The existing traffic volumes along Solent Circuit, Norwest Boulevard, and Windsor Road are summarised in **Table 4**, together with their appropriate level of service.

The concepts of carriageway capacity and Level of Service (LoS) are discussed in **Appendix B** together with criteria for their assessment. The absence of traffic movements entering/crossing Windsor Road and Norwest Boulevard from major developments, being access denied roads, means that the service one-way hourly volumes included in Table B1 of **Appendix B** could be used for these two roads.

Location	Lanes	AM Peak			PM Peak		
		East/ North	South/ West	LoS	East/ North	South/ West	LoS
Solent Circuit							
Norwest Bvd to Inglewood Pl	4DP	677	372	A	205	567	A
West of Fairview Dr	4DP	208	453	A	429	384	A
East of Fairway Dr	4DP	198	102	A	159	208	A
Norwest Bvd to Maitland Ct	4DP	325	61	A	76	294	A
Norwest Boulevard*							
Windsor Rd to Columbia	4DCL	837	2645	C	2245	1307	A
Columbia to Solent Cir (east)	4DCL	822	1988	A	1628	1130	A
West of Solent Cir (east)	4DCL	876	1778	A	1363	1083	A
Brookhollow to Reston Gr	4DCL	1229	1674	A	1572	1472	A
Solent Cir to Westwood Dr	4DCL	1235	1817	A	1716	1571	A
Windsor Road							
North of Norwest Boulevard	4DCL	783	2536	B	2189	1372	A
South of Norwest Boulevard	4DCL	1583	1528	A	1526	1647	A

Table 4: Existing Carriageway Level of Service

4DCL 4 lanes divided carriageway with clearway and limited access and limited intersections

4DP 4 lanes divided carriageway with parking

Interrupted volumes (Table 1 Appendix C)

Uninterrupted volumes (Table 2 Appendix C)

Norwest Boulevard operates at a satisfactory LoS of “C” or better. To the north of Norwest Boulevard, Windsor Road operates at a Level of Service “B” improving to a very good level of service “A” to the south of Norwest Boulevard.

Solent Circuit operates at a very good Level of Service “A”.

3.2.3 Operation of Existing Critical Intersections

The concepts of intersection capacity and level of service, as defined in the Guidelines published by the RTA (2002), are discussed in **Appendix C** together with criteria for their assessment. The assessment of the level of service of traffic signals is based on the evaluation of the average delay (seconds/vehicle) of vehicles on all approaches. The assessment of the level of service of roundabouts and signed controlled intersections is based on the average delay (seconds/vehicle) of the critical movement.

An analysis of the operation of critical intersections in the vicinity of the site was carried out using the SIDRA computer modelling program. The results of this analysis are summarised in **Table 5** and presented in **Appendix D**.

Intersection	AM		PM	
	Delay sec/v	LoS	Delay sec/v	LoS
Traffic Signals				
Norwest Boulevard with:				
■ Windsor Road	30.9	C	34.5	C
Roundabouts				
Solent Circuit with:				
■ Norwest Boulevard / Reston Grange	35.0	C	47.6	D
■ Fairway Drive	13.0	A	12.7	A
Signs				
Norwest Boulevard with:				
■ Solent Circuit (East)	14.8	B	>70	F

Table 5: Existing Operation of Intersections

The unsignalised intersection of Solent Circuit East with Norwest Boulevard currently operates at a good level of service "B" during the morning peak hour. Conditions worsen to a very poor Level of Service "F" during the afternoon peak; this is largely due to the extensive delays experienced by vehicles left turning out of Solent Circuit as a result of the heavy traffic volumes along Norwest Boulevard. Traffic signals are currently planned for installation at this location.

The traffic signals at the intersection of Norwest Boulevard with Windsor Road operates at a satisfactory level of service "C" during the morning and afternoon peak periods. This good operation is a reflection of the recent construction of a third right turning bay from Norwest Boulevard into Windsor Road, and a second left turning lane from Windsor Road into Norwest Boulevard.

During the morning peak period, the roundabout controlling the intersection of Norwest Boulevard with Solent Circuit and Reston Grange operates at satisfactory level of service "C". Conditions worsened in the afternoon when it operates near capacity at a lesser level of service "D". It is understood that the RMS and Council are planning to replace the roundabout with traffic signals in the next few years. The roundabout at the intersection of Fairway Drive with Solent Circuit operates at a very good Level of Service "A".

The Central roadway will provide access to Building A3 to the west of the roadway and to buildings G to J off Spurway Drive. At Solent Circuit, movements to and from Central roadway are restricted to left turn in and out only.

4. Traffic Impact of Proposed Development

4.1 Peak Hourly Trip Generation and Distribution

4.1.1 Trip Generation of Proposed Developments

The following approach was adopted to estimate the trip generations of the latest proposed development.

Residential: - The RMS Technical Directive 04a (2013) indicates that the average trip generation rates for high density residential buildings near railway stations is an average 0.19 trips/units based on a range of 0.07 to 0.32 trips/units (from 8 high density buildings) during the morning peak hour. During the afternoon peak hour, is 0.15 trips/units based on a range of 0.06 to 0.41 trips/units.

The higher rate of 0.32 trips per unit has been adopted for the proposed Greens Estate being the upper level of surveyed high density residential developments. This rate was used for both the morning and afternoon peak periods noting that the afternoon high rate of 0.41 trips/units was for a smaller building with the remaining seven buildings generating between 0.06 and 0.18 trips per units.

Office: - The rates determined in the Norwest Business Park Master Plan Study (Gennaoui, 2003) for office of 1.68 and 1.41 trips per 100 m² GFA for morning and afternoon peak hour respectively were used to estimate the trip generation of the office component of the development.

Gymnasium: - The RTA guidelines (2002) suggest a peak rate of 9.0 trips per 100 m² which occur between 6.00 and 7.00pm. As this period is outside the peak on-street traffic in Norwest, a rate of 4.51 trips per hour was adopted for the morning and afternoon on-street peak hour periods. This rate was determined from a relationship developed for a study of five gymnasiums (Gennaoui, 2013).

Retail: - The rates determined in the Norwest Business Park Master Plan Study (Gennaoui, 2003) for retail of 9.9 trips per 100 m² GFA for afternoon peak hour were used to estimate the trip generation of this component of the development. A trip generation rate equivalent to 25 percent of the afternoon peak was adopted for the morning peak hour.

Restaurant: The restaurant/cafe would generate most of their traffic during the evening peak periods and weekends and to a lesser extent during the lunch time period. Trip generation during the morning and afternoon would be at its minimum. A nominal trip generation rate of 0.1 trips per 100 m² GFA has been assumed.

Child Care Centre: - The proposed development would cater for up to 50 children and will be operated five days a week by about 10 staff including the manager at any one time, from 7.00am to 6.30pm. Trip generation rates published by the RMS (RTA, 2002) of 0.80 and 0.7 trips per child were used to estimate the number of trips likely to be generated by the proposed long day Childcare centre during the morning and afternoon peak hour respectively.

East of the Central roadway, the Greens development is expected to generate about 450 and 525 vehicle trips during the morning and afternoon peak hours respectively as noted in **Table 7**.

Land Use	Trip	Buildings B to F		Buildings G to J		Buildings A1 and A2		Buildings A3		Total
AM Peak	Rates	Units/m ²	Trips	Units /m ²	Trips	Units /m ²	Trips	Units /m ²	Trips	
Residential	0.32	578	185	286	92	100	32	76	24	333
Commercial										
Office	1.68	2,000	34							34
Gymnasium	4.51	1,500	68							68
Retail	2.5	1,100	28					400	10	38
Restaurant	1	900	9							9
Child Care Centre#		500	40							40
Total Commercial		6,000	178		0		0		10	188
Total GFA m²			363		92		32		34	521
PM Peak		Units/m ²	Trips	Units /m ²	Trips	Units /m ²	Trips	Units /m ²	Trips	
Residential	0.32	578	185	286	92	100	32	76	24	333
Commercial Trips per 100m²										
Office	1.41	2,000	28							28
Gymnasium	4.51	1,500	68							68
Retail	10	1,100	110					400	40	150
Restaurant	1.0	900	9							9
Child Care Centre#	0.7	500	35							35
Total Commercial		6,000	250		0		0		40	290
Total GFA m²			435		92		32	400	64	623

No of children in child care centre is 50. Trips are 0.8 per child for AM, and 0.7 per child PM

Table 7: Trip Generation of Proposed Development East of Central Roadway

4.1.2 Trip Distribution and Assignment

The median in Solent Circuit will be retained along the whole length of the development thus restricting all direct access to the estate to left turn in and out only.

Furthermore, it has been assumed that traffic signals proposed at the intersection of Solent Circuit east with Norwest Boulevard would be in place at which time the right turning movement from Solent Circuit east into Norwest Boulevard would be permitted. It has further been assumed that the planned replacement of the roundabout at the intersection of Norwest Boulevard with Solent Circuit and Reston Grange with traffic signals is completed.

The route distribution for approaching and departing traffic, included in **Table 8**, was adopted to assign the additional traffic to the road network. The distribution adopted in previous studies has been slightly adjusted to include the Fairway Drive access to Norwest.

Approach Routes	AM Peak		PM Peak	
	Arr	Dep	Arr	Dep
From the west Norwest Bvd, Solent Ct	25%	38%	38%	23%
Reston Grange, Solent Ct	17%	10%	10%	16%
Windsor Rd (N), Norwest Bvd, Solent Ct	28%	17%	17%	26%
Windsor Rd (S), Norwest Bvd, Solent Ct	15%	20%	20%	23%
Fairway Dr, Solent Ct	5%	5%	5%	5%
Sub-Total	90.0%	90.0%	90.0%	90.0%
Market Town	3%	5%	3%	5%
Brookhollow Ave Businesses	3%	1%	3%	1%
Business west of Solent Ct	4%	4%	4%	4%
Sub-Total	10%	10%	10%	10%
Total	100.0%	100.0%	100.0%	100.0%

Table 8: Peak Trip Distribution for Proposed Development

The distribution in **Table 8** was then applied to the trips generated by developments within “The Greens” to derive the origin and distribution of trips as presented in **Table 9**. Traffic was then assigned to the road network as follows:

- Vehicular access to and from Buildings B to F will be off Solent Circuit;
- Vehicular access to and from Buildings G to J will be off Spurway Drive;
- Vehicular access to and from Buildings A1 and A2 will be off Solent Circuit;
- Vehicular access to and from Buildings A3 will be off the link roadway to Rosetta Crescent which connects to Spurway Drive;
- All traffic travelling to the west of the development would either use the proposed right turn from Solent Circuit east to Norwest Boulevard or make a U-turn at the Maitland Place roundabout;
- Traffic accessing Buildings B to F arriving from the east of the development would have the choice to travel along Norwest Boulevard and either turn right at the roundabout at Reston Grange or turn right at the eastern arm of Solent Circuit then do a U-turn at the roundabout at Fairway Drive to gain access to the proposed development; the latter is more likely and was used;
- Traffic arriving to buildings G to J from the south or departing those buildings to the north would use Windsor Road and Spurway Drive;
- Traffic to Fairway Drive, would access Solent Circuit, then U turn at the Maitland Place roundabout to access Fairway Drive.

Approach Routes	Buildings B to F		Buildings G to J		Building A1&2		Building A3	
Morning Peak	Arr	Dep	Arr	Dep	Arr	Dep	Arr	Dep
From the West Norwest Bvd, Solent Ct	38	79	7	24	2	9	5	5
Reston Grange, Solent Ct	26	21	5	6	2	2	1	4
Windsor Rd (N), Norwest Bvd, Solent Ct	43	36	8	11	3	4	2	5
Windsor Rd (S), Norwest Bvd, Solent Ct	23	42	4	13	1	4	2	5
Fairway Dr, Solent Ct	8	10	1	3	0	1	1	1
Sub-Total	136	188	25	57	8	20	11	20
Market Town	5	10	1	3	0	0	0	1
Brookhollow Ave Businesses	5	2	1	1	0	0	0	0
Business West of Solent Ct	6	8	1	3	0	1	0	1
Sub-Total	16	20	3	7	1	1	1	2
Total	152	208	28	64	9	21	12	22
Afternoon Peak	Arr	Dep	Arr	Dep	Arr	Dep	Arr	Dep
From the West Norwest Bvd, Solent Ct	87	47	21	8	5	5	13	7
Reston Grange, Solent Ct	23	33	5	6	3	1	3	5
Windsor Rd (N), Norwest Bvd, Solent Ct	39	47	9	8	5	2	6	7
Windsor Rd (S), Norwest Bvd, Solent Ct	46	47	11	8	3	3	7	7
Fairway Dr, Solent Ct	12	10	3	2	1	1	2	1
Sub-Total	207	184	50	32	17	12	31	27
Market Town	7	10	2	2	1	1	1	1
Brookhollow Ave Businesses	7	2	2	0	1	0	1	0
Business West of Solent Ct	9	8	2	1	1	1	1	1
Sub-Total	23	20	6	3	3	2	3	2
Total	230	204	56	35	20	14	34	29

Table 9: Peak Trip Distribution of Proposed Development

4.2 Traffic Impact of Proposed Development

4.2.1 Impact on Major Approach Roads

The carriageway traffic volumes along Solent Circuit and other major approach roads are summarised in **Table 10**, together with their appropriate level of service, for traffic conditions including the proposed Greens Estate development.

The proposed development will only marginally affect the level of service of all major approach roads to the site. Solent Circuit would continue to operate at Level of Service "A". The section of Norwest Boulevard between Windsor Road and Columbia Place would operate at level of service "B". All other roads would continue to operate at their current levels of service.

Location	Lanes	AM Peak			PM Peak		
		East/ North	South/ West	LoS	East/ North	South/ West	LoS
Solent Circuit							
Norwest Bvd to Inglewood Pl	4DP	781	372	A	395	567	A
West of Fairway Dr	4DP	312	453	A	619	384	A
East of Fairway Dr	4DP	390	195	A	471	327	A
Norwest Bvd to Maitland Ct	4DP	418	334	A	181	540	A
Spurway Drive							
Adjacent to Buildings G to J	2U	33	56	A	54	35	A
Norwest Boulevard*							
Windsor Rd to Columbia.	4DCL	934	2723	C			
					2353	1412	B
Columbia to Solent Cir (east)	4DCL	919	2066	A	1736	1235	A
West of Solent Cir (east)	4DCL	876	1954	A	1363	1221	A
Brookhollow to Reston Gr	4DCL	1229	1844	A	1572	1613	A
Solent Cir to Westwood Dr	4DCL	1294	1943	A	1852	1648	A
Windsor Road							
North of Norwest Boulevard	4DCL	823	2590	B	2252	1430	A
South of Norwest Boulevard	4DCL	1613	1591	A	1591	1710	A

4DCL 4 lanes divided carriageway with clearway and limited access and limited intersections
 4DP 4 lanes divided carriageway with parking
 4UC 4 lanes undivided carriageway with clearway
 2UC 2 wide lanes with clearway and limited access
 Interrupted flows Uninterrupted Flows

Table 10: Carriageway Level of Service with The Greens Development

4.2.2 Impact on Critical Intersections

For the purpose of this assessment, it has been assumed, as described above, that traffic signals will be in place at the intersections of Norwest Boulevard with Solent Circuit east, and with Reston Grange and Solent circuit. An analysis of the operation of the four intersections likely to be affected by the proposed expanded development was also carried out using the SIDRA computer intersection modelling program. The results of this analysis are summarised in **Table 11** and also included in **Appendix D**.

Intersection	AM		PM	
	Delay sec/v	LoS	Delay sec/v	LoS
Traffic Signals				
Norwest Boulevard with:				
■ Windsor Road	33.6	C	42.7	D
■ Solent Circuit (east)	17.9	B	14.9	B
■ Solent Circuit Reston Grange	29.2	C	28.0	B/C
Roundabouts				
Solent Circuit with:				
■ Fairway Drive	13.4	A	14.1	A/B

Table 11: Operation of Intersections with Developments

The roundabout at the intersection of Fairway Drive with Solent Circuit would continue to at a good Level of Service “B” or better.

The traffic signals at the intersection of Norwest Boulevard with Windsor Road would continue to operate at a satisfactory level of service “C” during both the morning and afternoon peak periods.

A signalised intersection of Solent Circuit East with Norwest Boulevard would operate in the future at a level of service B during the morning peak and the afternoon peak.

The replacement of the roundabout controlling the intersection of Norwest Boulevard with Solent Circuit and Reston Grange with traffic signals would operate at a satisfactory level of service “C” during the morning and afternoon peak periods.

5. Summary and Conclusions

5.1 Access and Parking

Mulpha-Norwest is currently seeking to amend the approved Master Plan to provide some 864 new apartments in nine buildings to the east of the Central roadway which would also include the provision of 2,000 m² of offices, a 1,500 m² Gymnasium, retail and restaurant/coffee covering 2,000 m² and a Child Care Centre catering for 50 children (500 m² GFA). The total number of units including the approved Buildings A1 to A3 is anticipated to be 1,040 on the site.

All tenant and visitors parking spaces needed for the development would be provided on-site. The nine buildings will accommodate 1,508 tenant and visitor spaces for the residential component, and some 253 spaces for the commercial component.

5.2 Traffic Impact

The proposed Greens development east of the Central roadway is expected to generate about 450 and 525 vehicle trips during the morning and afternoon peak hours respectively. Including the trip generation of Buildings A1 to A3, already approved, a total of about 520 and 620 trips are likely to be generated during the morning and afternoon peak hours respectively.

The proposed development will only marginally affect the level of service of all major approach roads to the site. Solent Circuit would continue to operate at Level of Service "A". The section of Norwest Boulevard between Windsor Road and Columbia Place would operate at level of service "B". All other roads would continue to operate at their current levels of service.

The proposed development would not adversely affect the current operation of the intersections of Norwest Boulevard with Windsor Road and of Solent Circuit with Fairway Drive.

The provision of traffic signals at the intersections of Norwest Boulevard with Solent Circuit East and with Reston Grange and Solent Circuit East would result in considerably improved conditions in the future.

5.3 Conclusions

The Greens Proposal would only have a minor impact on the road network.

Therefore, there are no traffic reasons why, with the recommended improvement works, approval should not be granted for the Planning Proposal and Master Plan.

6. References

Baulkham Hills Council (2004). "Development Control Plan No 12 Parking". September.

Gennaoui Consulting Pty Ltd (2003). "Traffic Master Plan – Norwest Business Park."
Norwest Limited and Baulkham Hills Shire Council. May. Sydney.

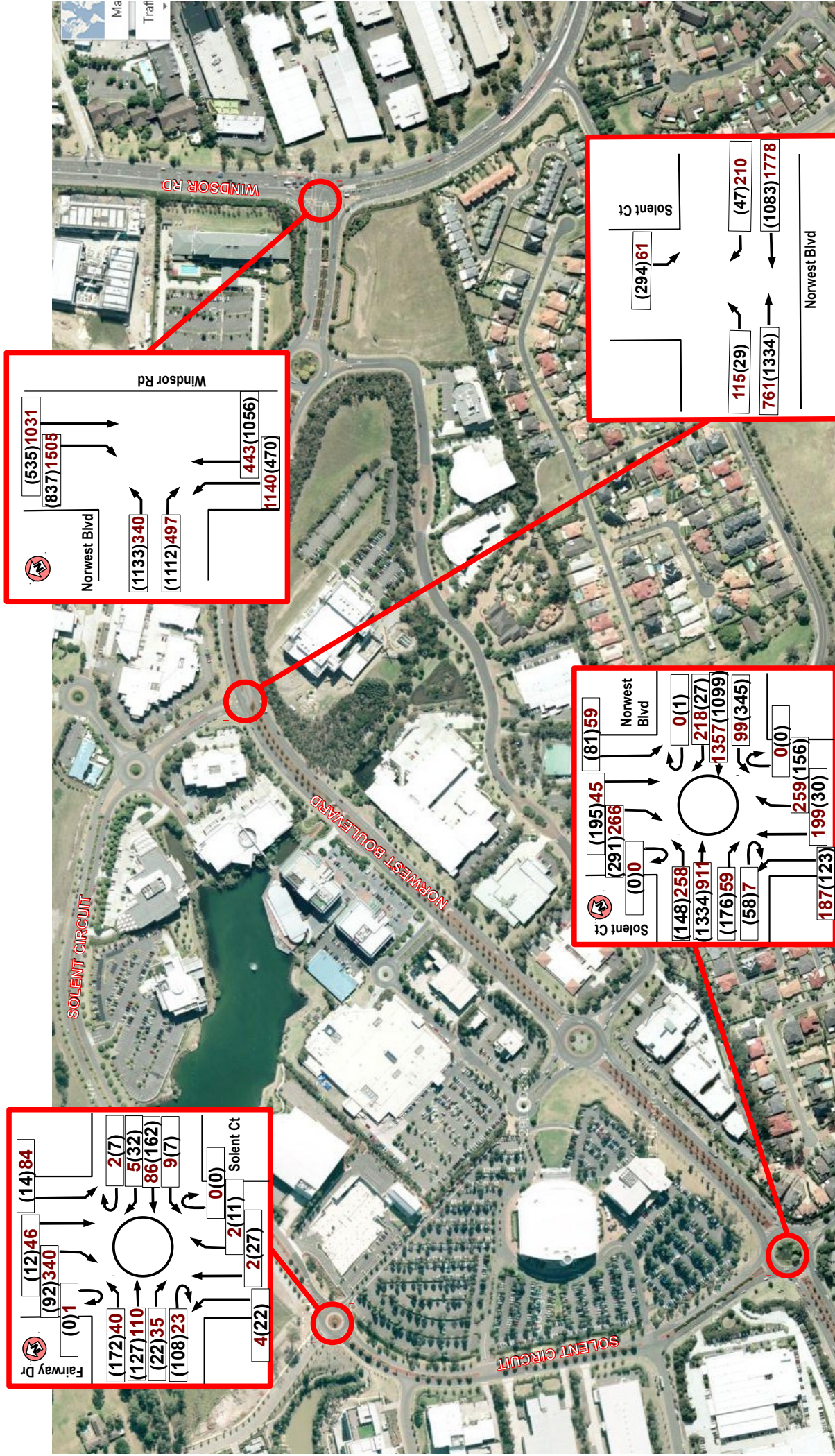
Gennaoui Consulting Pty Ltd (2013). "Plus Fitness Studios – Parking Demand Study."
Australian Fitness Management. January.

Roads and Traffic Authority of NSW (2002) "Guide to Traffic Generating Developments".
Issue 2.2. October.

Traffic Design Group Ltd in association with Gennaoui Consulting

Appendix A

Existing Traffic Volumes



LEGEND	
000(000)	– AM(PM) flows, veh/hr
AM (8:00 am – 9:00 am)	
PM (4:30 pm – 5:30 pm)	

Figure 1
Existing Volumes

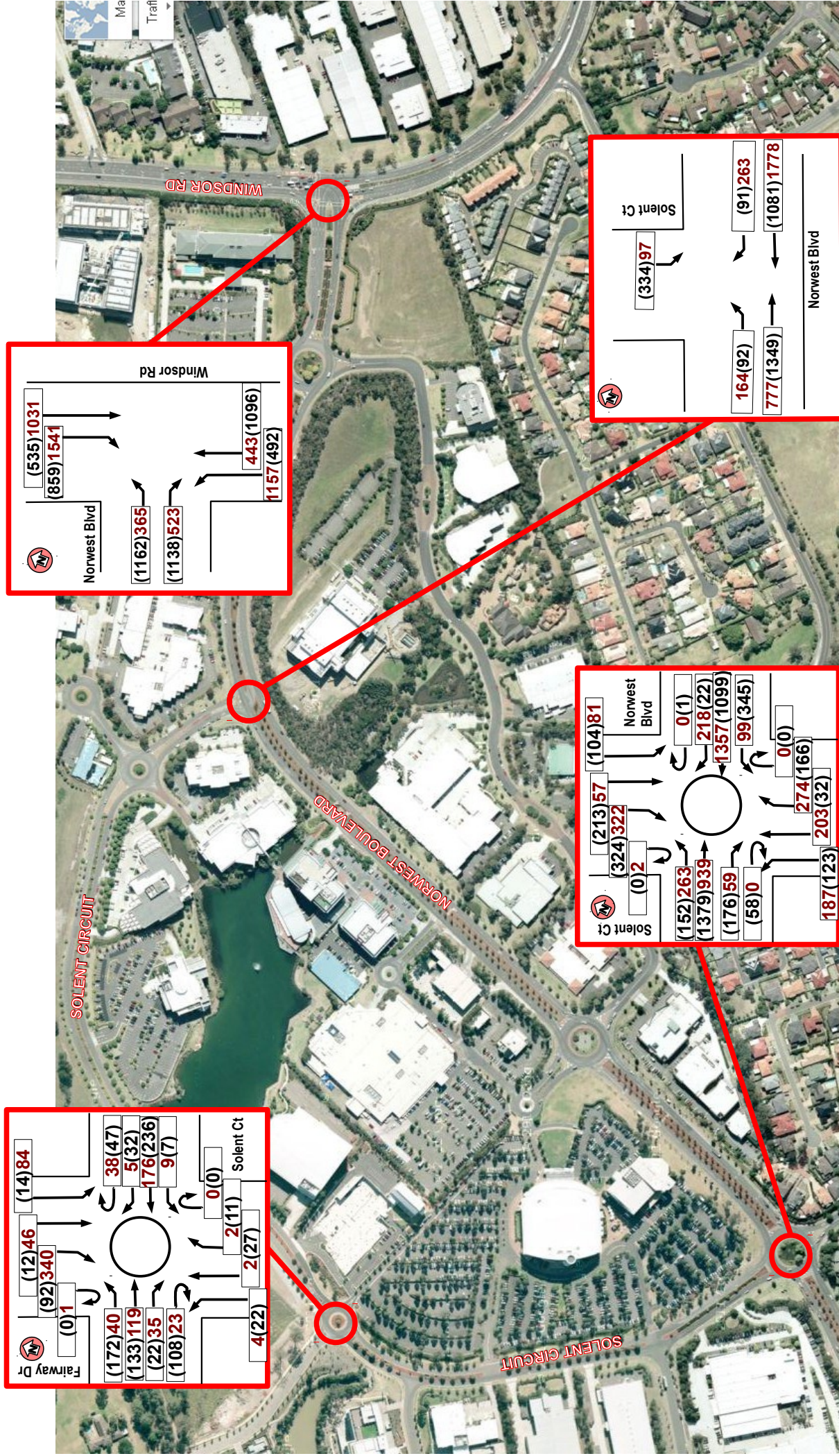


Figure 2
With Future Proposed Development

Appendix B

Concept of Carriageway Capacity and Level of Service

The capacity of major streets within an urban area can be based on an assessment of their operating Level of Service. Level of service is defined by NAASRA (1988) as a "qualitative measure of the effects of a number of features, which include speed and travel time, traffic interruptions, freedom to manoeuvre, safety, driving comfort and convenience, and operating costs. Levels of service are designated from A to F from best (free flow conditions) to worst (forced flow with stop start operation, long queues and delays) as follows:

***LEVELS OF SERVICE**

- A - Free flow (almost no delays);
- B - Stable flow (slight delays);
- C - Stable flow (acceptable delays);
- D - Approaching unstable flow (tolerable delays);
- E - Unstable flow (congestion; intolerable delays); and
- F - Forced flow (jammed).

A service volume, as defined by Austroads, is the maximum number of vehicles that can pass over a given section of roadway in one direction during one hour while operating conditions are maintained at a specified level of service. It is suggested that ideally arterial and sub-arterial roads should not exceed service volumes at level of service C. At this level, whilst most drivers are restricted in their freedom to manoeuvre, operating speeds are still reasonable and acceptable delays experienced. However, in urban situations, arterial and sub-arterial roads operating at Level of Service D are still considered adequate. Traffic Volumes along urban roads with interrupted and uninterrupted flow conditions are included in Table B1 and B2 respectively.

Description	Level of Service					
	A	B	C	D	E	F
2 Lane Undivided	540	630	710	810	900	F
4 Lane Undivided	900	1050	1200	1350	1500	O
4 Lane Undivided with Clearways	1080	1260	1440	1620	1800	R
4 Lane Divided with Clearways	1140	1330	1520	1710	1900	C
4 Lane Divided with Clearways, Limited Access and Limited Intersections	1610	1870	2140	2410	2670	E
6 Lane Undivided	1440	1680	1920	2160	2400	D
6 Lane Divided with Clearway	1740	2030	2320	2610	2900	

Table B1: Level of Service Interrupted Flow Conditions along Urban Roads (One Way Hourly Volumes)

Description	Level of Service					
	A	B	C	D	E	F
4 Lane Undivided (13m)	1260	1470	1680	1890	2100	O
4 Lane Undivided with Clearways	1510	1760	2010	2270	2520	R
4 Lane Divided with Clearways	1600	1860	2130	2400	2660	C
4 Lane Divided with Clearways, Limited Access and limited intersections	2250	2620	3000	3380	3740	D
6 Lane Undivided	2020	2350	2690	3020	3360	D
6 Lane Divided with Clearway	2440	2840	3250	3660	4060	
6 Lane Divided with Clearways, Limited Access and Limited Intersections	3375	3930	4500	5070	5610	

* 40% higher than base volumes in Table C1

Table B2: Level of Service Uninterrupted Flow Conditions along Urban Roads (One Way Hourly Volumes)

Appendix C

Guidelines for Evaluation of Intersection Capacity

The RTA has included in the "Guide to Traffic Generating Developments" (Dec 1993, Issue 2) a section on the assessment of intersections. The assessment of the level of service of an intersection is based on the evaluation of the following Measures of Effectiveness:

- (a) average delay (seconds/veh) (all forms of control)
- (b) delay to critical movement (seconds/veh) (all forms of control)
- (c) degree of saturation (traffic signals and roundabouts)
- (d) cycle length (traffic signals)

INTANAL was used to calculate the relevant intersection parameters. INTANAL is a software which allows comparisons between different forms of intersection control and different forms of intersection configurations to be readily evaluated. That is at each intersection the priority control, roundabout and signal control options will be examined to determine the most efficient form of control.

The best indicator of the level of service at an intersection is the average delay experienced by vehicles at that intersection. For traffic signals, the average delay over all movements should be taken. For roundabouts and priority control intersections (with Stop and Give Way signs or operating under the T-junction rule) the critical movement for level of service assessment should be that with the highest average delay.

With traffic signals, delays per approach tend to be equalised, subject to any over-riding requirements of signal co-ordination as well as to variations within individual movements. With roundabouts and priority - control intersections, the critical criterion for assessment is the movement with the highest delay per vehicle. With this type of control the volume balance might be such that some movements suffer high levels of delay while other movements have minimal delay. An overall average delay for the intersection of 25 seconds might not be satisfactory if the average delay on one movement is 60 seconds.

The average delay for level of service E should be no more than 70 seconds. The accepted maximum practical cycle length for traffic signals under saturated conditions is 120 - 140 seconds. Under these conditions 120 seconds is near maximum for two and three phase intersections and 140 seconds near maximum for more complex phase designs. Drivers and pedestrians expect cycle lengths of these magnitudes and their inherent delays in peak hours. A cycle length of 140 seconds for an intersection which is almost saturated has an average vehicle delay of about 70 seconds, although this can vary. If the average vehicle delay is more than 70 seconds, the intersection is assumed to be at Level of Service F.

Table C1 sets out average delays for different levels of service. There is no consistent correlation between definitions of levels of service for road links as defined elsewhere in this section, and the ranges set out in Table C1. In assigning a level of service, the average delay to the motoring public needs to be considered, keeping in mind the location of the intersection. For example, drivers in inner-urban areas of Sydney have a higher tolerance of delay than drivers in country areas. Table D1 provides a recommended baseline for assessment.

Level of Service	Average Delay per Vehicle (seconds/veh)	Traffic Signals, Roundabout	Give Way and Stop Signs
A	less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 - 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity and accident study required
E	57 to 70	At capacity; at signals, incidents will cause excessive delays Roundabouts require other control mode	At capacity, required other control mode

Table C1: Level of Service Criteria for Intersections

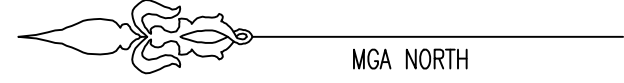
The figures in **Table C1** are intended as a guide only. Any particular assessment should take into account site-specific factors including maximum queue lengths (and their effect on lane blocking), the influence of nearby intersections and the sensitivity of the location to delays. In many situations, a comparison of the current and future average delay provides a better appreciation of the impact of a proposal, and not simply the change in the level of service.

The intersection degree of saturation (DS) can also be used to measure the performance of isolated intersections. At intersections controlled by traffic signals, both queue length and delays increase rapidly as DS approaches 1.0. An upper limit of 0.9 is appropriate. When DS exceeds 0.8 - 0.85, overflow queues start to become a problem. Satisfactory intersection operation is generally achieved with a DS of about 0.7 - 0.8. (Note that these figures are based on isolated signalised intersections with cycle lengths of 120 seconds. In co-ordinated signal systems DS might be actively maximised at key intersections). Although in some situations additional traffic does not alter the level of service, particularly where the level of service is E or F, additional capacity may still be required. This is particularly appropriate for service level F, where small increases in flow can cause disproportionately greater increases in delay. In this situation, it is advisable to consider means of control to maintain the existing level of absolute delay. Suggested criteria for the evaluation of the capacity of signalised intersections based on the Degree of Saturation are summarised in **Table C2**.

Level Of Service	Optimum Cycle Length (Seconds) (Co)	Volume/Saturation γ	Intersection Degree Of Saturation x
A/B Very good operation	< 90	< 0.70	< 0.80
C Satisfactory	90-120	0.70-0.80	0.80-0.85
D Poor but manageable	120-140	0.80-0.85	0.85-0.90
E/F Bad, extra capacity required	>140	>0.85	> 0.90

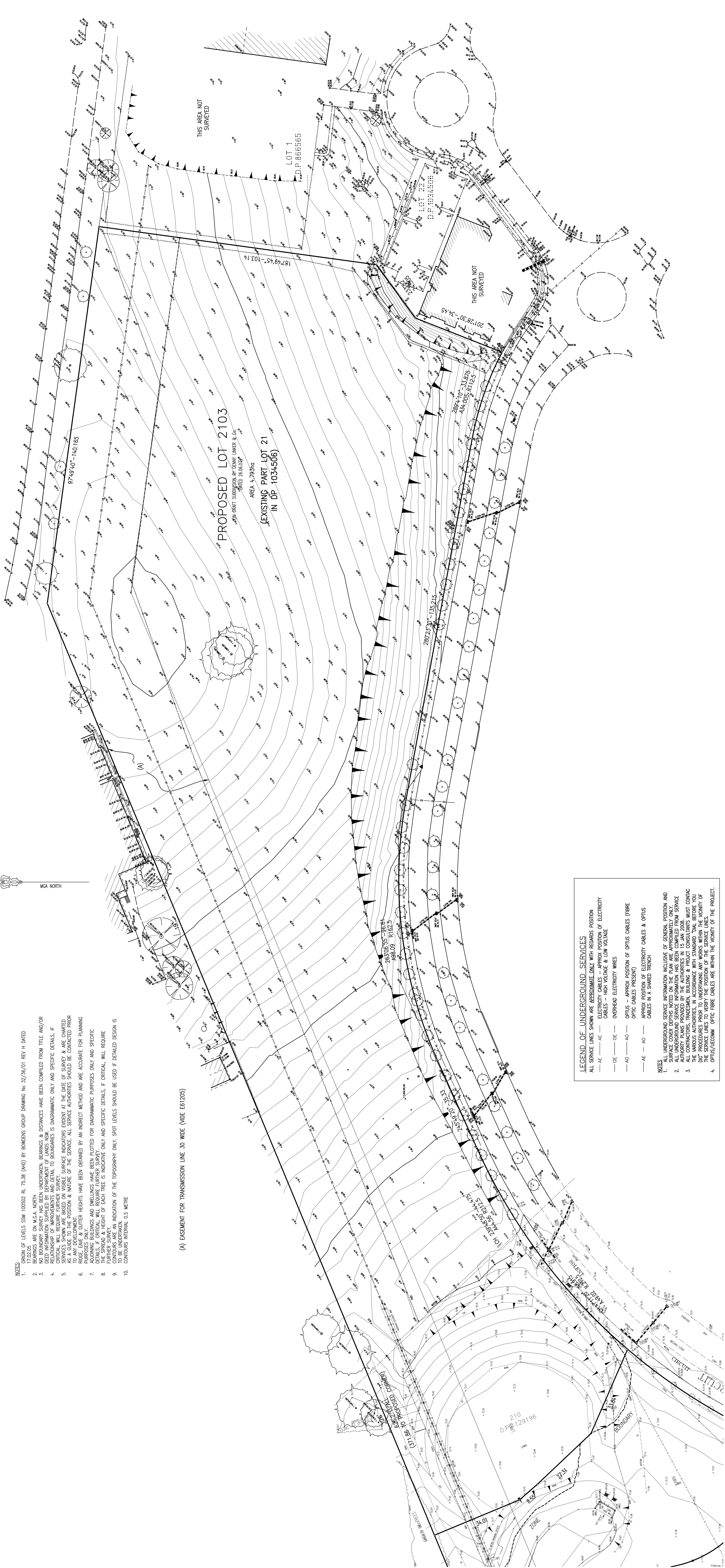
Table C2: Criteria for Evaluating Capacity Of Signalised Intersections*

* Source: Roads & Traffic Authority (2002)



- NOTES:
1. ORIGIN OF LEVELS SWM 105502 RL 75.38 (AHD) BY BOWEN'S GROUP DRAWING No. 32/75/01 REV H DATED 17/02/05
 2. ALL LEVELS ARE ON M.S.L. NORTH
 3. NO BOUNDARY SURVEY HAS BEEN UNDERTAKEN. BEARINGS & DISTANCES HAVE BEEN COMPILED FROM TITLE AND/OR DEED INFORMATION SUPPLIED BY DEPARTMENT OF LANDS NSW.
 4. ALL DISTANCES ARE MEASURED TO CENTRE OF ROAD OR TO BOUNDARIES. IS DIAGRAMMATIC ONLY AND SPECIFIC DETAILS, IF ANY, WILL REQUIRE FURTHER SURVEY.
 5. SERVICES SHOWN ARE BASED ON VISIBLE SURFACE INDICATORS EXISTENT AT THE DATE OF SURVEY & ARE CHARTED TO ANY DEVELOPMENT.
 6. RIDGE, EAVE & GUTTER HEIGHTS HAVE BEEN OBTAINED BY AN INDIRECT METHOD AND ARE ACCURATE FOR PLANNING PURPOSES ONLY.
 7. ADJOINING BUILDINGS AND DWELLINGS HAVE BEEN PLOTTED FOR DIAGRAMMATIC PURPOSES ONLY AND SPECIFIC DETAILS, IF CRITICAL, WILL REQUIRE FURTHER SURVEY.
 8. FURTHER SURVEY, IF CRITICAL, WILL REQUIRE FURTHER SURVEY.
 9. CONTOURS ARE AN INDICATION OF THE TOPOGRAPHY ONLY. SPOT LEVELS SHOULD BE USED IF DETAILED DESIGN IS REQUIRED.
 10. CONTOURS INTERVAL 0.5 METRE

(A) EASEMENT FOR TRANSMISSION LINE 30 WIDE (VOID E51205)



LEGEND OF UNDERGROUND SERVICES

ALL SERVICE LINES SHOWN ARE APPROXIMATE ONLY WITH REGARDS POSITION

— AE — AE — ELECTRICITY CABLES — APPROX POSITION OF ELECTRICITY CABLES — HIGH VOLTAGE & LOW VOLTAGE

— OE — OE — OVERHEAD ELECTRICITY WIRES

— AO — AO — OPTUS — APPROX POSITION OF OPTUS CABLES (FIBRE OPTIC CABLES PRESENT)

— AE — AO — APPROX POSITION OF ELECTRICITY CABLES & OPTUS CABLES IN A SHARED TRENCH

NOTES

1. ALL UNDERGROUND SERVICE INFORMATION INCLUDES OF GENERAL POSITION AND SURFACE COVER DEPTHS NOTED ON THE PLAN ARE APPROXIMATELY ONLY.
2. ALL UNDERGROUND SERVICE INFORMATION HAS BEEN COMPILED FROM SERVICE PROVIDERS, TRADING, BUILDING & PROJECT CONSULTANTS MUST CONTACT THE VARIOUS AUTHORITIES IN ACCORDANCE WITH STANDARD TYPAL BEFORE YOU UNDERTAKE ANY WORKS WITHIN THE VICINITY OF THE SERVICE LINES TO VERIFY THE POSITION OF THE SERVICE LINES.
3. OPTUS/VECOMM OPTIC FIBRE CABLES ARE WITHIN THE VICINITY OF THE PROJECT.

- LEGEND
- BOX BOLLARD
 - C/PIT CONCRETE PIT
 - BNK BOTTOM OF KERB
 - HYD HYDRANT
 - UP UP
 - DOWN DOWN
 - SWH STOP VALVE
 - TL TOP OF WALL
 - TH TOP OF TRENCH
 - SWP STORMWATER GRATED PIT

CONSULTING SURVEYORS				DATE	
LINKER SURVEYING PTY LTD				19/12/07	
SYDNEY				ISSUE	
SUITE 301 LEVEL 3 55 HOLT STREET				E	
SURRY HILLS N.S.W. 2010				DRAWN: SH/DW	
PH: (02) 9212 4655 FAX: (02) 9212 5254				AO	
REF.				DWC	
No.: 070402				ID: STAGE 2	

SHEET 1 OF 3 SHEETS				DATE	
PLAN SHOWING DETAIL & LEVELS OF STAGE 2 AT CENTRAL PRECINCT BELLA VISTA WATERS				E	
				D	
				C	
				B	
				A	
				ISSUE	



LEGEND OF UNDERGROUND SERVICES

ALL SERVICE LINES SHOWN ARE LOCATED WITH REGARDS TO POSITION

— AE — AE — CABLES — HIGH VOLTAGE & LOW VOLTAGE

— OE — OE — OVERHEAD ELECTRICITY WIRES

— AO — AO — OPTIC FIBRE POSITION OF OPTIC CABLES (FIBRE CABLES)

— AE — AO — OPTIC FIBRE POSITION OF OPTIC CABLES & OPTICS CABLES IN A SHARED TRENCH

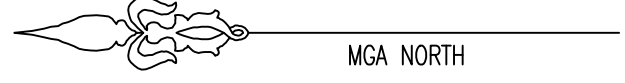
- NOTES
1. ALL UNDERGROUND SERVICE INFORMATION INCLUSIVE OF GENERAL POSITION AND SURFACE COVER HAS BEEN OBTAINED FROM THE PLAN AND IS APPROXIMATE. ON SERVICE AUTHORITY PLANS PROVIDED BY THE AUTHORITIES IN 15 JAN 2008.
2. ALL CONDUITS, TRENCHES, BUILDINGS & PROJECT CONSULTANTS MUST COMPLY WITH THE DPT PROCEDURES PRIOR TO UNDERTAKING ANY WORKS WITHIN THE VICINITY OF THE SERVICE LINES TO VERIFY THE POSITION OF THE SERVICE LINES.
3. OPTIC FIBRE CABLES ARE WITHIN THE VICINITY OF THE PROJECT.

CONSULTING SURVEYORS		DATE	
LINKER SURVEYING PTY LTD		19/12/07	
SYDNEY		SHEET	
SUITE 301 LEVEL 3 55 HOLT STREET		ISSUE	
SUNNY HILLS N.S.W. 2010		AO	
PH: (02) 9212 4655 FAX: (02) 9212 2254		DWC	
		ID: STAGE 2	

SHEET 2 OF 3 SHEETS		X:\0005\000502-BELLA VISTA WATERS-ADMIN\VECT\UTM\UTM-STAGE 2 ISSUE 1-18-07-2008	
PLAN SHOWING DETAIL & LEVELS OF STAGE 2 AT CENTRAL PRECINCT BELLA VISTA WATERS		E	
06/07/16		TREE LOCATION CHECK	
21/11/11		PLAN UPDATED FOR NEW ISSUE	
12/07/10		RIPERIAN BOUNDARY AMENDED	
30/06/10		RIPERIAN BOUNDARY AMENDED, ZONE BOUNDARY ADDED	
25/05/10		RIPERIAN BOUNDARY AMENDED	
DATE	BY	REVISION	ISSUE

- NOTES:
1. ORIGIN OF LEVELS SSM 1000002 RL 75.38 (AHD) BY BOWEN GROUP DRAWING No 32/26/01 REV H DATED 17/02/05
 2. ALL LEVELS ARE ON MGA NORTH
 3. NO BOUNDARY SURVEY HAS BEEN UNDERTAKEN, BEARINGS & DISTANCES HAVE BEEN COMPILED FROM TITLE AND/OR DEED INFORMATION SUPPLIED BY DEPARTMENT OF LANDS NSW
 4. THE POSITION OF BOUNDARIES TO BOUNDARIES IS DIAGNOSTIC ONLY AND SPECIFIC DETAILS, IF CRITICAL WILL REQUIRE FURTHER SURVEY
 5. SERVICES SHOWN ARE BASED ON VISIBLE SURFACE INDICATORS EXISTENT AT THE DATE OF SURVEY & ARE CHARTERED TO ANY DEVELOPMENT
 6. ADJOINING BUILDINGS AND DWELLINGS HAVE BEEN OBTAINED BY AN INDIRECT METHOD AND ARE ACCURATE FOR PLANNING PURPOSES ONLY
 7. ADJOINING BUILDINGS AND DWELLINGS HAVE BEEN PLOTTED FOR DIAGNOSTIC PURPOSES ONLY AND SPECIFIC DETAILS WILL REQUIRE FURTHER SURVEY
 8. THE SPREAD HEIGHT OF EACH PILE IS INDICATIVE ONLY AND SPECIFIC DETAILS, IF CRITICAL WILL REQUIRE FURTHER SURVEY
 9. CONTINUOUS INDICATION OF THE TOPOGRAPHY ONLY. SPOT LEVELS SHOULD BE USED IF DETAILED DESIGN IS TO BE UNDERTAKEN
 10. CONTOURS INTERVAL 0.5 METRE

(A) EASEMENT FOR TRANSMISSION LINE 30 WIDE (NDE E61205)



LEGEND

- BEI BENCH MARK
- C/PIT CONCRETE PIT
- BK BOTTOM OF KERB
- SPOT LEVEL
- HWY HIGHWAY
- INV INVERT LEVEL
- OP OPTIC CABLE
- PP POWER POLE
- SW STOP WALKWAY
- TEL TELSTRA LTD
- TM TOP OF WALL
- SWMP STORMWATER GRATED PIT

OE OVERHEAD POWER CABLE

LEGEND OF UNDERGROUND SERVICES

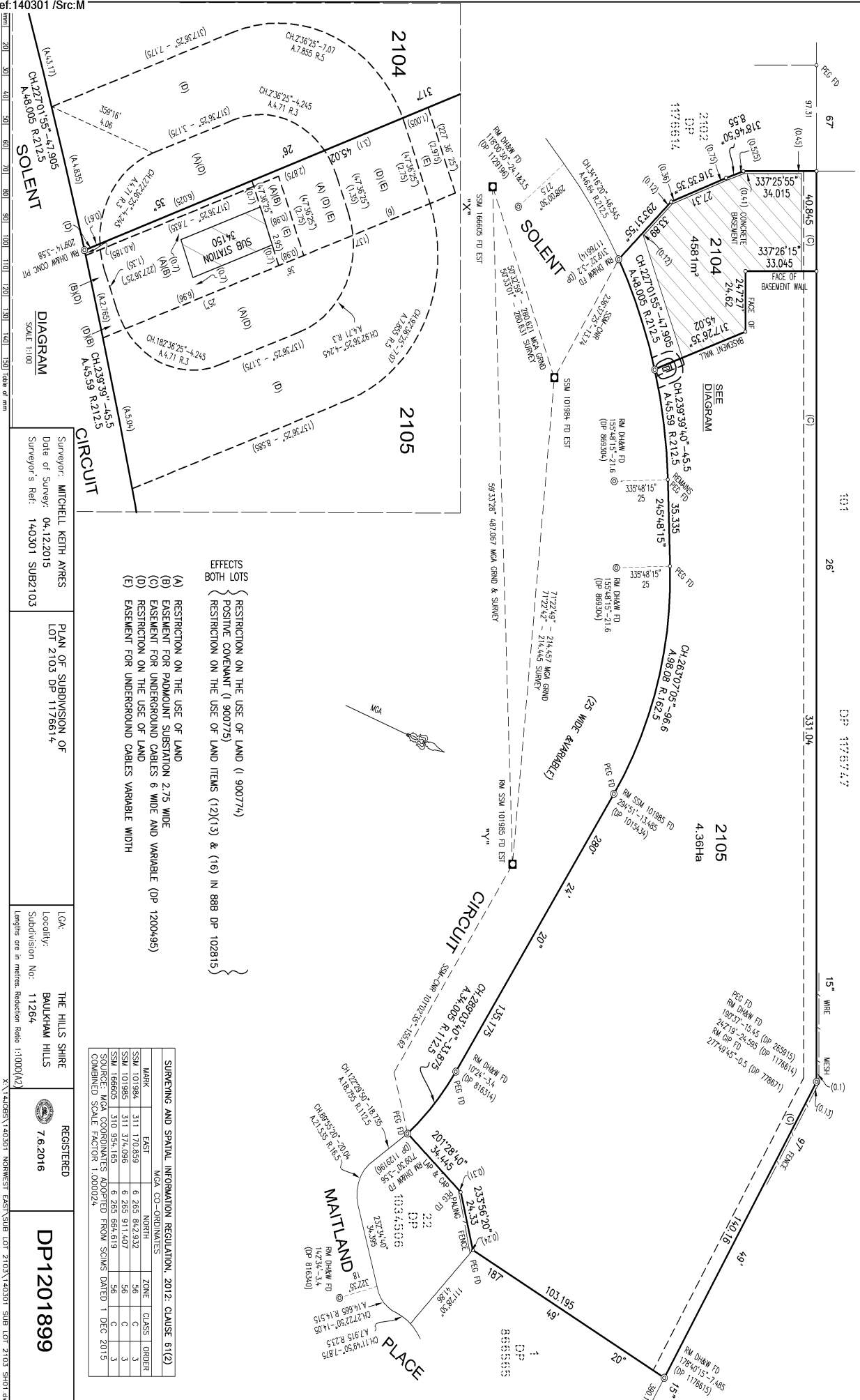
- ALL SERVICE LINES SHOWN ARE APPROXIMATE ONLY WITH REGARD TO POSITION
- AE — AE — ELECTRICITY CABLES — APPROX POSITION OF ELECTRICITY CABLES
 - OE — OE — OVERHEAD ELECTRICITY WIRES
 - AO — AO — OPTIC CABLES PRESENT
 - AE — AO — OPTIC CABLES (FIBRE) CABLES IN A SHARED TRENCH

- NOTES:
1. ALL UNDERGROUND SERVICE INFORMATION INCLUSIVE OF GENERAL POSITION AND SURFACE COVER DEPTHS NOTED ON THE PLAN ARE APPROXIMATELY ONLY.
 2. ALL CONDUITS AND SERVICES ARE TO BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL COUNCIL.
 3. ALL CONTRACTORS, TRADESMEN, BUILDING & PROJECT CONSULTANTS MUST CONTACT THE RELEVANT AUTHORITIES IN ADVANCE WITH STANDARD TOAL BEFORE YOU COMMENCE ANY WORK.
 4. OPTUS/VECOMM OPTIC FIBRE CABLES ARE WITHIN THE VICINITY OF THE PROJECT.

CONSULTING SURVEYORS		RANGE: 1:250	DATE: 19/12/07
LINKER SURVEYING PTY LTD		DATUM: A.H.D.	
SYDNEY		ISSUE: E	SHEET: A0
SUITE 301 LEVEL 3 35 HOLT STREET		DRAWN: SH/DW	
SURREY HILLS N.S.W. 2010		REF. NO.: 070402	DWG. NO.: STAGE 2

PLAN SHOWING DETAIL & LEVELS OF STAGE 2 AT CENTRAL PRECINCT BELLA VISTA WATERS

DATE	BY	REVISION	ISSUE
06/07/16	MA/MS	TREE LOCATION CHECK	E
21/11/11	TM/DW	PLAN UPDATED FOR NEW ISSUE	D
12/07/10	TM/DC	RIPERIAN BOUNDARY AMENDED	C
30/06/10	TM/DC	RIPERIAN BOUNDARY AMENDED, ZONE BOUNDARY ADDED	B
25/05/10	TM/DC	RIPERIAN BOUNDARY AMENDED	A



SUPERVISING AND SPATIAL MCA CO-ORDINATES REGULATION, 2012: CLAUSE 6(12)					
MARK	EST	ZONE	CLASS	ORDER	
SSM_101.984	311	F17	C	56	C
SSM_102.959	6	6.265	NH.2.C32	56	C
SSM_103.984	311	F17	C	56	C
SSM_104.986	311	374.096	6	265	NH.1.019
SSM_166605	310	374.165	6	265	664.017
			56	C	
SOURCE : MCA COORDINATES ADOPTED FROM SGMS DATED 1 DEC 2015					
COMBINED SCALE FACTOR 1.0002024.					

DEPOSITED PLAN ADMINISTRATION SHEET		Sheet 1 of 3 sheet(s)
Registered:  7.6.2016 Title System: TORRENS Purpose: SUBDIVISION	Office Use Only Office Use Only DP1201899	
PLAN OF SUBDIVISION OF LOT 2103 DP 1176614	LGA: THE HILLS SHIRE Locality: BAULKHAM HILLS Parish: CASTLE HILL County: CUMBERLAND	
Crown Lands NSW/Western Lands Office Approval I..... (Authorised Officer) in approving this plan certify that all necessary approvals in regard to the allocation of the land shown herein have been given Signature: Date: File Number: Office:	Surveying Certificate I, <u>MITCHELL KEITH AYRES</u>..... of Linker Surveying Pty Ltd Suite 301 Level 3 55 Holt St Surry Hills NSW 2010 a surveyor registered under the <i>Surveying and Spatial Information Act 2002</i>, certify that * (a) The land shown in the plan was surveyed in accordance with the Surveying and Spatial Information Regulation, 2012, is accurate and the survey was completed on: <u>04.12.2015</u> . * (b) The part of the land shown in the plan (being [^]excluding.....) was surveyed in accordance with the Surveying and Spatial Information Regulation 2012, is accurate and the survey was completed on,..... the part not surveyed was compiled in accordance with that Regulation. * (c) The land shown in this plan was compiled in accordance with the Surveying and Spatial Information Regulation 2012. Signature: <u>M. Ayres</u>..... Dated: <u>19/2/2016</u> Surveyor ID: 8674. Datum Line: "X"- "Y". Type: *Urban/*Rural- The terrain is *Level-Undulating / *Steep-Mountainous- *Strike through if inapplicable. [^]Specify the land actually surveyed or specify any land shown in the plan that is not the subject of the survey.	
Subdivision Certificate I, <u>ANDREW BROOKS</u>..... *Authorised Person/*General Manager/*accredited Certifier, certify that the provisions of s.109J of the Environmental Planning and Assessment Act 1979 have been satisfied in relation to the proposed subdivision, new road or reserve set out herein. Signature: <u>A. Brooks</u>..... Accreditation no: Consent/Authority: <u>THE HILLS SHIRE COUNCIL</u> Date of Endorsement: <u>11.5.2016</u> Subdivision Certificate no: <u>11264</u> File no: <u>936/2014/JP</u> *Strike through if inapplicable		
STATEMENTS of intention to dedicate public roads, public reserves and drainage easements	Plans used in the preparation of survey/compilation- DP 265915 DP 778671 DP 816340 DP 869304 DP 1129196 DP 1176614 DP 1200495 If space is insufficient continue on PLAN FORM 6A	
Signatures, Seals and Section 88B Statements should appear on PLAN FORM 6A	SURVEYORS REFERENCE: 140301 SUB2103	

DEPOSITED PLAN ADMINISTRATION SHEET

Sheet 2 of 3 sheet(s)

Office Use Only		Office Use Only	
Registered:  7.6.2016	DP1201899		
PLAN OF SUBDIVISION OF LOT 2103 DP 1176614			
Subdivision Certificate No: 11264		This sheet is for the provision of the following information as required: • A schedule of lots and addresses - See 60(c) SSI Regulation 2012 • Statements of intention to create and release affecting interests in accordance with section 88B Conveyancing Act 1919 • Signatures and seals - see 195D Conveyancing Act 1919 • Any information which cannot fit in the appropriate panel of sheet 1 of the administration sheets.	
Date of Endorsement: 11.5.2016			

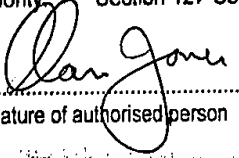
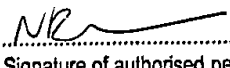
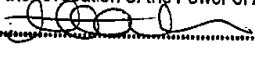
LOT	STREET NUMBER	STREET NAME	STREET TYPE	LOCALITY
2104	38	SOLENT	CIRCUIT	BAULKHAM HILLS
2105	40	SOLENT	CIRCUIT	BAULKHAM HILLS

PURSUANT TO SEC. 88B OF THE CONVEYANCING ACT 1919 IT IS INTENDED TO CREATE:

1. RESTRICTION ON THE USE OF LAND (A)
2. EASEMENT FOR PADMOUNT SUBSTATION 2.75 WIDE (B)
3. RESTRICTION ON THE USE OF LAND (D)
4. RESTRICTION ON THE USE OF LAND
5. RESTRICTION ON THE USE OF LAND
6. POSITIVE COVENANT
7. POSITIVE COVENANT
8. EASEMENT FOR UNDERGROUND CABLES VARIABLE WIDTH (E)

If space is insufficient use additional annexure sheet

SURVEYORS REFERENCE: 140301 SUB2103

DEPOSITED PLAN ADMINISTRATION SHEET		Sheet 3 of 3 sheet(s)
Office Use Only Registered:  7.6.2016 PLAN OF SUBDIVISION OF LOT 2103 DP 1176614 Subdivision Certificate No: <u>11264</u> Date of Endorsement: <u>11.5.2016</u>	Office Use Only DP1201899 This sheet is for the provision of the following information as required: - A schedule of lots and addresses - See 60(c) SSI Regulation 2012 - Statements of intention to create and release affecting interests in accordance with section 88B Conveyancing Act 1919 - Signatures and seals - see 195D Conveyancing Act 1919 - Any information which cannot fit in the appropriate panel of sheet 1 of the administration sheets.	
Executed on behalf of the Corporation named below by the authorised persons whose signatures appear below pursuant to the authority specified. Corporation: Mulpha NORWEST Ply Limited ACN 000 004 633 Authority: Section 127 Corporation Act 2001  Signature of authorised person  Signature of authorised person <u>ALAN JONES</u> Name of authorised person <u>NICOLE RASMUSSEN</u> Name of authorised person Office held: Director / Secretary <i>Alan Jones</i> Office held: Director / Secretary <i>Nicole Rasmussen</i>		
Westpac Banking Corporation ABN 33 007 457 141 being the Mortgagee under Mortgage number <u>AG8464988</u> hereby consents to this Plan/Instrument Executed by its Tier <u>3</u> Attorney <u>JO CASSAR</u> under Power of Attorney No <u>BOOK 4299 No 332</u> this <u>13th</u> day of <u>MAY</u> 20<u>16</u>  (By executing this instrument the Attorney states that the Attorney has received no notice of the revocation of the Power of Attorney)  (Signature of Witness) <u>THANH LUU</u> (Name of Witness) <u>73, 275 Kent St Sydney NSW</u> (Address of Witness) <u>2000</u>		
If space is insufficient use additional annexure sheet		
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