

Precinct	Type of use	Existing development	Proposed development
Fox Valley	Commercial	8,000m ² housing Pacific Regional Headquarters of the SDA Church, Media Network Centre and other administrative functions	10,000m ² to maintain existing functions and allow for limited expansion of existing and/or additional functions Allowance for some new commercial up to 5,000m ² (eg. professional consulting rooms) in proposed neighbourhood centre.
	Residential	<p>Dwelling houses</p> <p>11</p> <p>Dual Occupancy</p> <p>1</p> <p>High density (residential flat buildings)</p> <p>6 (ladies hostel)</p>	<p>Dwelling houses</p> <p>8 in total</p> <p>8 to be retained, refurbished or replaced</p> <p>High density (residential flat building apartments)</p> <p>88 in total</p> <p>22 x 1 bedroom</p> <p>44 x 2 bedroom</p> <p>22 x 3 bedroom</p>
Mount Pleasant	Retirement living	<p>Hostel 69 rooms</p> <p>Nursing home 27 beds</p> <p>50 aged units</p>	<p>104 bed hostel</p> <p>41 bed nursing home</p> <p>50 aged units</p>
	Residential	<p>Dwelling houses</p> <p>28</p> <p>Medium density (town houses)</p> <p>nil</p> <p>High density (residential flat buildings)</p> <p>Nil</p>	<p>Dwelling houses</p> <p>16 in total</p> <p>15 to be retained, refurbished or replaced</p> <p>1 new dwelling house proposed</p> <p>Medium density (town houses)</p> <p>38 in total</p> <p>High density (residential flat buildings)</p> <p>27 in total</p> <p>7 x 1 bedroom</p> <p>14 x 2 bedroom</p> <p>6 x 3 bedroom</p>

8.5 Built Form

The built form of the proposal has been sensitively designed to reflect the constraints of the site, the existing form and surrounding context. The contemporary form has been designed to create a transition between the main hospital development and adjacent buildings in terms of scale, form and material. Great importance has been placed on allowing careful articulation and detailing of facades to create a visually impressive building form of the highest standard particularly in locations of visual prominence.

The building envelopes provide an appropriate scale when viewed from the streetscape, with a series of forms creating spaces and connectivity through legibility. Changes in level further assists in creating an interesting built form. Large landscaped areas provide a good backdrop for the building and a green outlook, further softening of the built form. Envelopes are well setback from the front and rear boundaries, providing benefits of the strong vegetation setting. The separation allows for good solar access for envelopes, and cross ventilation to habitable rooms in the development.

The maximum wall length varies from the Medium Density Residential Development DCP 48 for a number of reasons, these include:

- Size of the site and ability to provide adequate deep soil zones surrounding the building envelopes.
- The building envelopes satisfy the building form objectives specified in the DCP including creating an interface in building form between the SAN Hospital and low density residential.
- Unbroken walls of over 24m in length are common in existing buildings and are not out of character due to the campus style of development.
- To ensure building construction efficiency.
- Limitation of long walls along visually prominent locations such as along Fox Valley Road has been avoided.

Typical building profiles are outlined in the following images. These typologies outline the principles on which the building envelopes have been developed. All residential flat building envelopes have been tested and refined against SEPP 65 criteria, and meet or exceed the minimum requirements.



Figure 35 – Typology



Figure 36 – Typology



Figure 37 – Typology



Figure 38 – Typology: Villa

8.6 Building retention / demolition (heritage)

The Concept Plan involves the demolition of many buildings on site. Those to be retained or refurbished are those that are in good condition, those that are of functional use to the hospital and those of heritage significance. In relation to heritage, only one building is listed as heritage significant (the ACA Administration building on Fox Valley Road). This building is proposed to be retained. Any other building that is found to have some heritage merit is proposed to be recorded for archival storage in accordance with the heritage impact assessment at **Appendix H**.

The buildings generally intended to be retained are indicated in **Figure 39** below.



Figure 39 – Building Retention/Demolition

8.7 Landscape

The proposal features the conservation and improved management of approximately 34.1ha of land proposed to be zoned E2 Environmental Conservation and subject of a Vegetation Management Plan.

In addition to these large tracts of land, the proposal includes the designation of a number of active and passive recreation areas that will be available to serve the living and working community of the Estate. A plan of the proposed landscaping is included in **Figure 40** below.

Further details of landscaping will accompany the proposal for development of each precinct.

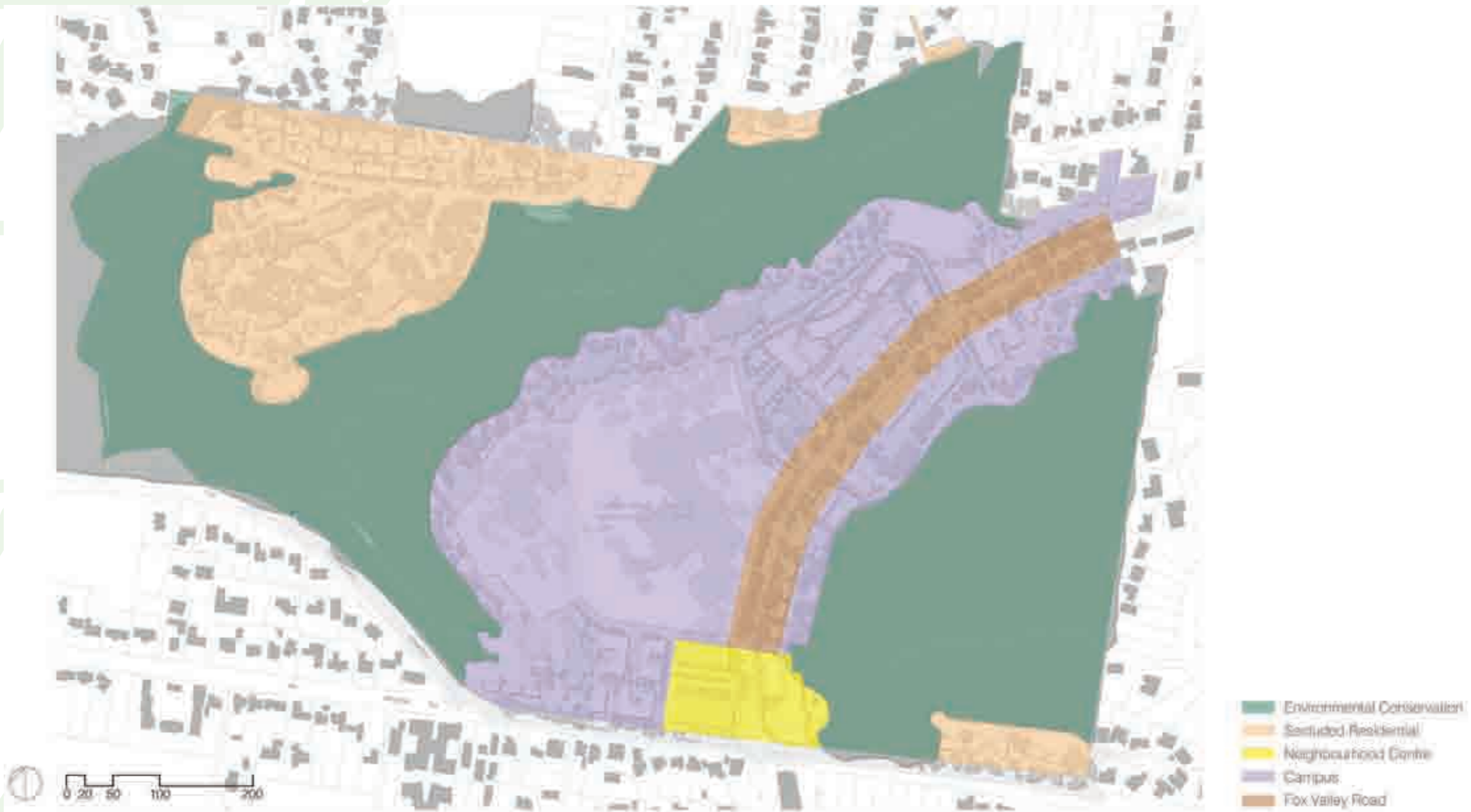


Figure 40 – Landscape Plan



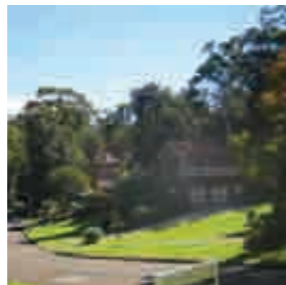
Environmental Conservation

The existing natural vegetation is to be retained to ensure the protection of an riparian buffer and provide valuable ecological corridors running through the site.



Fox Valley Road

The existing leafy character of Fox Valley Road is to be maintained with much of the existing trees retained. Where appropriate additional street tree planting will add to this. Proposed buildings will be set back from the existing road and build on the existing trend of formally landscaped frontages including hedgerow and specimen tree planting.



Secluded Residential

Low rise residential units within woodland and parkland settings. These areas are to be characterised by predominately soft landscape treatments, additional native street tree planting and an informal approach to pedestrian circulation.



Campus

The landscape treatment across these areas will help to create a 'campus' feel with high levels of pedestrian accessibility. Retention of existing vegetation together with avenue tree planting and larger areas of open lawn will provide a strong green structure within the wider forest setting. A number of key focal spaces related to the hospital, church and residential communities will be inter-linked by a strong network of paths and cycleways placing an emphasis on pedestrian movement.



Neighbourhood Centre

Landscape and public realm is to have an emphasis on high legibility and circulation. Bold and simple use of hard and soft landscape elements to be combined to provide a clear hierarchy of movement for pedestrian and vehicle access. Street tree planting will create shaded areas in front of shops and cafes whilst carefully selected hard landscape materials and street furniture will create a robust but attractive environment.

8.8 Precincts
Precinct A: Mount Pleasant



Figure 41 – Precinct A: Mount Pleasant (Scale: 1:2,500 @ A3)

Mount Pleasant Precinct

Existing residential and seniors living is to be retained and complemented with townhouse development and some residential apartments and an expanded aged care facility.

In keeping with the more secluded feel in this location, development will be sensitively placed within the landscape, taking care to retain existing vegetation where possible and to work with the landform.

Landscaped frontages and street tree planting will ensure a 'leafy' character for the precinct with car parking to the rear or in covered garages.

Existing vegetation along the northern boundary of the site is to be retained within a landscape setback to ensure minimal disturbance to residential properties adjacent to the site.

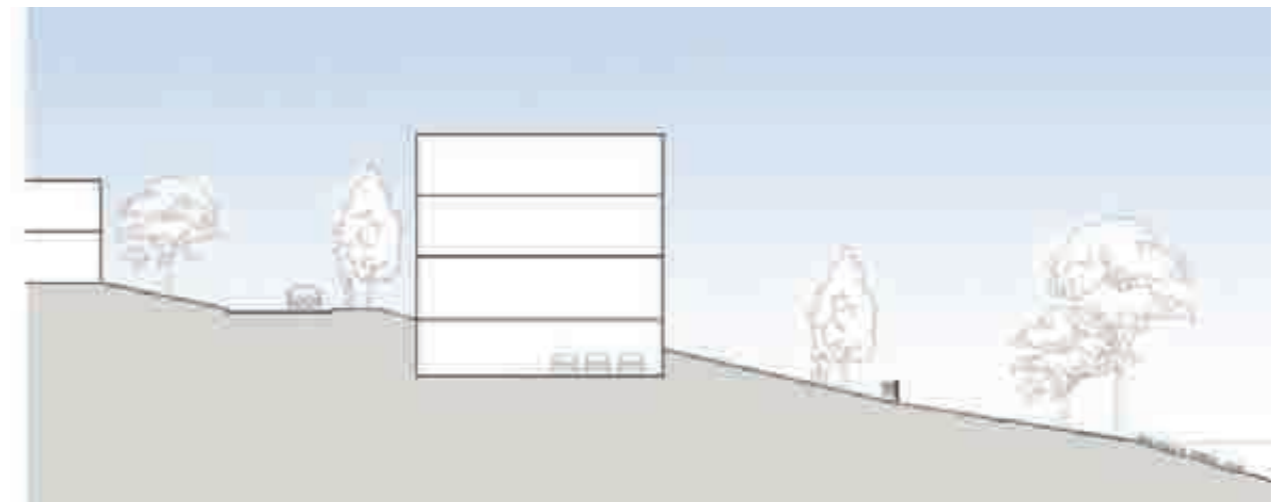


Figure 43 – Section A1

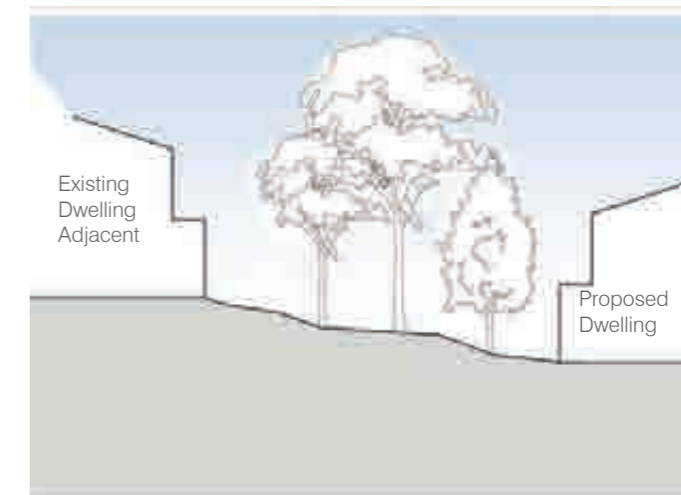


Figure 44 – Section A2

Figure 42 – Precinct A: Mount Pleasant Detail (Scale: 1:2,000 @ A3)

Precinct B: Central Church



Figure 45 – Precinct B: Central Church (Scale: 1:2,500 @ A3)

Central Church Precinct

A cluster of residential apartments will take advantage of close links with the hospital, church, surrounding natural landscape and good access to Fox Valley Road.

This precinct has been laid out to achieve high levels of solar access and minimal overshadowing by buildings. A central square gives an address to all the buildings and provides a focal point for the community.

Strong pedestrian linkages to surrounding streets, open space, the church and hospital precinct will help to create an active public realm whilst encourage walking within the campus.

Vehicle parking will primarily be provided beneath buildings. Some additional at-grade visitor parking and drop off space will be provided.

The character and treatment of the street edge along Fox Valley Road is important as it contributes to the approach to the Hospital. Additionally the relationship between the proposed residential flat buildings and the heritage ACA building is also important.

The building envelopes of the buildings along Fox Valley Road have been designed to create spaces between building mass to enable plantings and to break up the built form so to not be as dominating along Fox Valley Road.



Figure 46 – Precinct B: Central Church Detail (Scale: 1:2,000 @ A3)



Figure 47 – Artists impression looking south west from Fox Valley Road



Figure 48 – Artists impression of internal road in Central Church precinct

Precinct C: Central Hospital



Figure 49 – Precinct C: Central Hospital (Scale: 1:2,500 @ A3)

Central Hospital Precinct

At the intersection of Fox Valley Road and Comenarra Parkway this commercial precinct will serve to build on links to the existing shops to the south of the junction and create a village centre.

A strong emphasis will be placed on creating active street frontages through retail uses and encouraging activities such as cafe dining to spill onto the street.

The retention of existing mature trees together with additional street tree planting will create attractive shaded streets on all sides.

Vehicle parking will be primarily provided below ground with at grade parking and service access for retail and commercial development.



Figure 51 – Section C1



- Central pedestrian avenue
- Courtyards to provide residential amenity
- At grade car parking
- Broad pavement area with street tree planting
- Avenue tree planting
- At grade parking
- Service Access
- Existing trees retained along Comenarra Parkway.

Figure 50 – Precinct C: Central Hospital Detail (Scale: 1:2,000 @ A3)



Figure 52 – Artists impression from Fox Valley Road

Precinct D: Fox Valley Road East



Figure 53 – Precinct D: Fox Valley Road East (Scale: 1:2,500 @ A3)

Fox Valley Road

This linear precinct is comprised of existing residential and commercial development supplemented with additional residential apartments and commercial buildings.

New development within this precinct will focus on maintaining a transition from individual dwellings to the north through residential apartments to commercial buildings. Commercial buildings at the intersection of Fox Valley Road and Comenarra Parkway will serve to reinforce the creation of a village centre at this junction.

Existing setbacks to Fox Valley Road have been maintained along with existing significant vegetation to ensure the current street character remains.

Direct vehicle access to Fox Valley has been limited with parking to the rear of buildings or within covered undercroft garages.



Figure 55 – Section D1



- Maintained landscape setback and vegetated spaces between buildings
- Residential apartments with basement parking
- Existing vegetation retained
- Residential apartments with basement parking
- Vehicle access to rear of building
- Existing vegetation retained
- Access to Fox Valley Road

Figure 54 – Precinct D: Fox Valley Road East Detail (Scale: 1:2,000 @ A3)

Precinct E: Residential East



Figure 56 – Precinct E: Residential East (Scale: 1:2,500 @ A3)

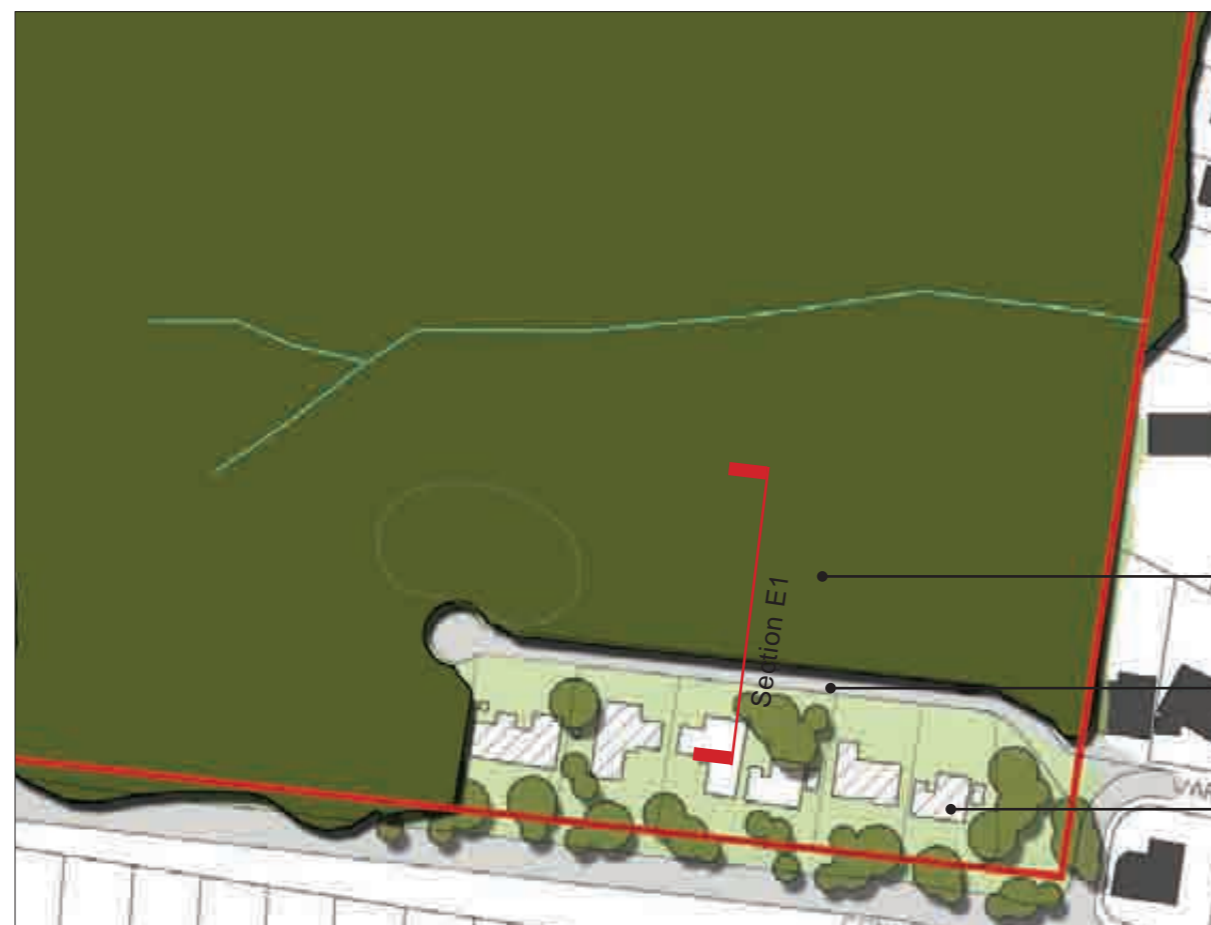
Residential East

This exclusively residential precinct will be sensitively located on this sloping woodland site. Existing valuable and protected vegetation will be retained to create a natural forest setting to the precinct.

Buildings will have landscaped frontages and tree planting to ensure an attractive street scape throughout with car parking to be within covered/undercroft garages.



Figure 58 –Section E1



Retained Bushland

On street parking

Residential dwellings

Figure 57 – Precinct E: Residential East Detail (Scale: 1:2,000 @ A3)



Figure 59 - Section locations (not to scale)

Note: Sections are indicative of general street layout in given locations. Built form is represented only to give an impression of height and mass not architectural detail.

Carriageway dimensions subject to further investigation.

Spot heights are indicative on approximate levels and are subject to change as part of more detailed applications

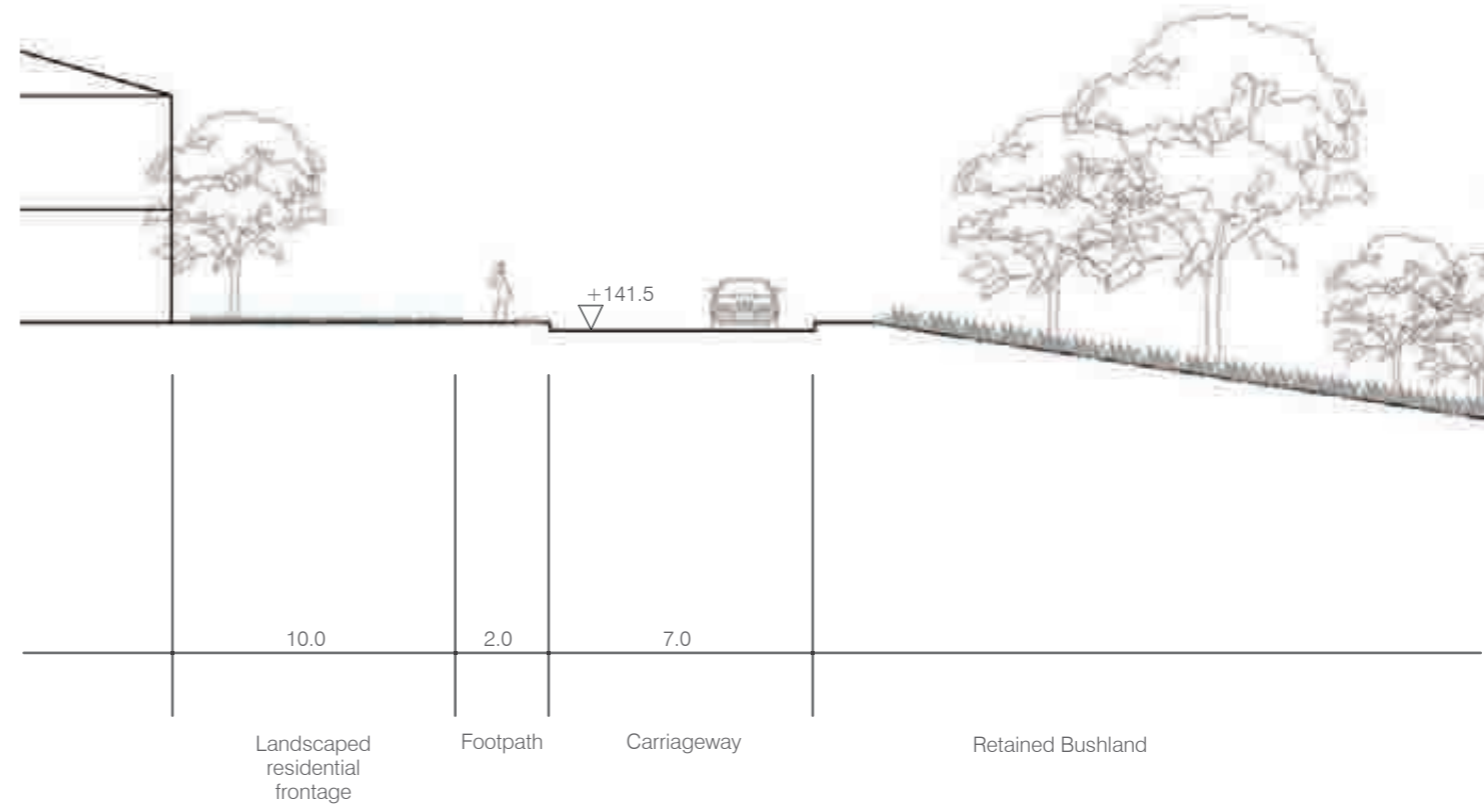


Figure 60 - Section 1 - Scale: 1:200 @ A3



Figure 61 - Section locations (not to scale)

Note: Sections are indicative of general street layout in given locations. Built form is represented only to give an impression of height and mass not architectural detail.

Carriageway dimensions subject to further investigation.

Spot heights are indicative on approximate levels and are subject to change as part of more detailed applications

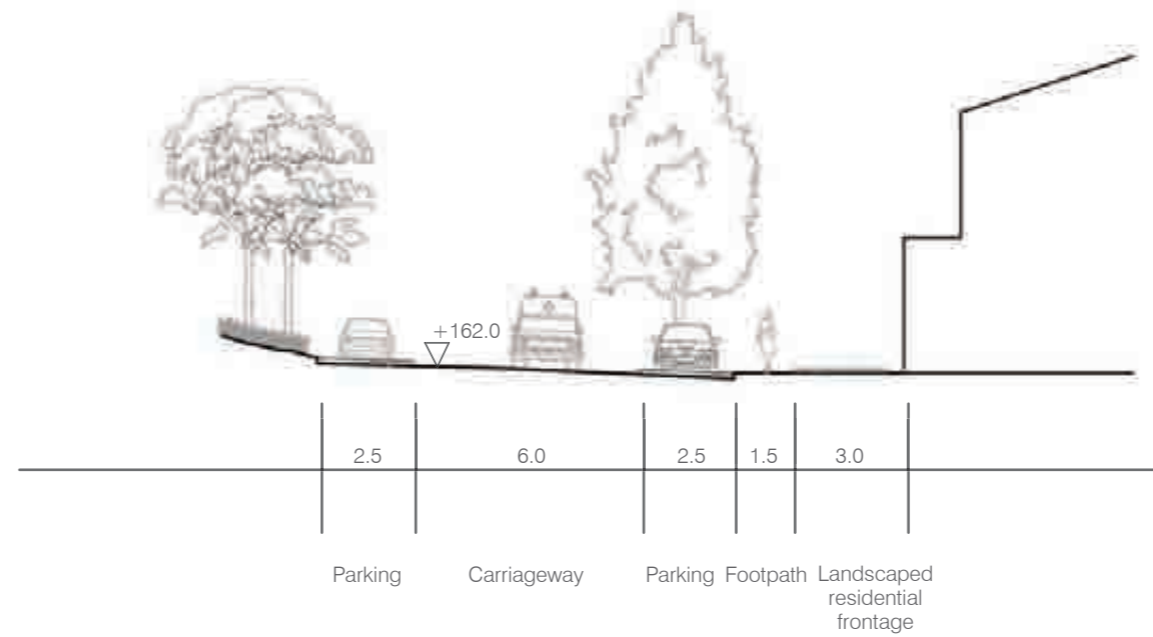


Figure 62 - Section 2 - Scale: 1:200 @ A3

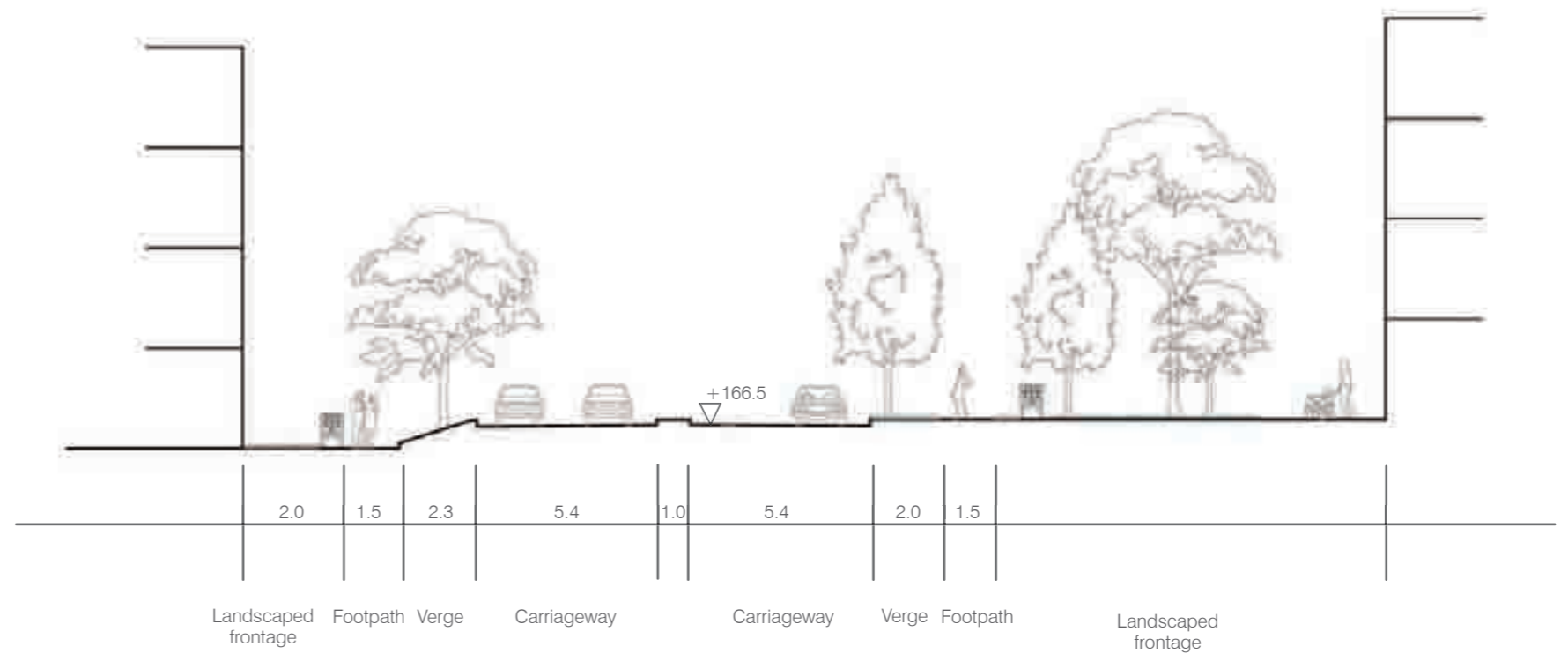


Figure 63 - Section 3 - Scale: 1:200 @ A3



Figure 64 - Section locations (not to scale)

Note: Sections are indicative of general street layout in given locations. Built form is represented only to give an impression of height and mass not architectural detail.

Carriageway dimensions subject to further investigation.

Spot heights are indicative on approximate levels and are subject to change as part of more detailed applications

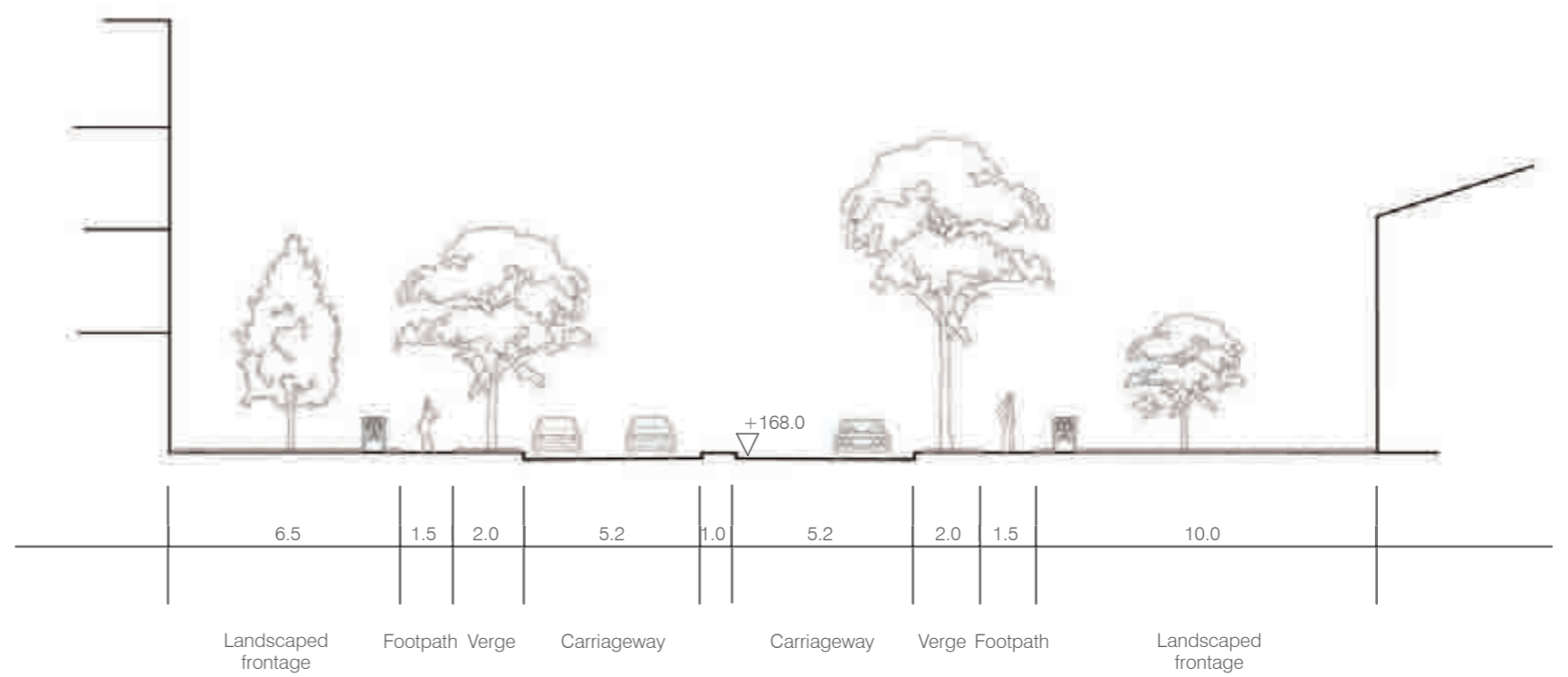


Figure 65 - Section 4 - Scale: 1:200 @ A3

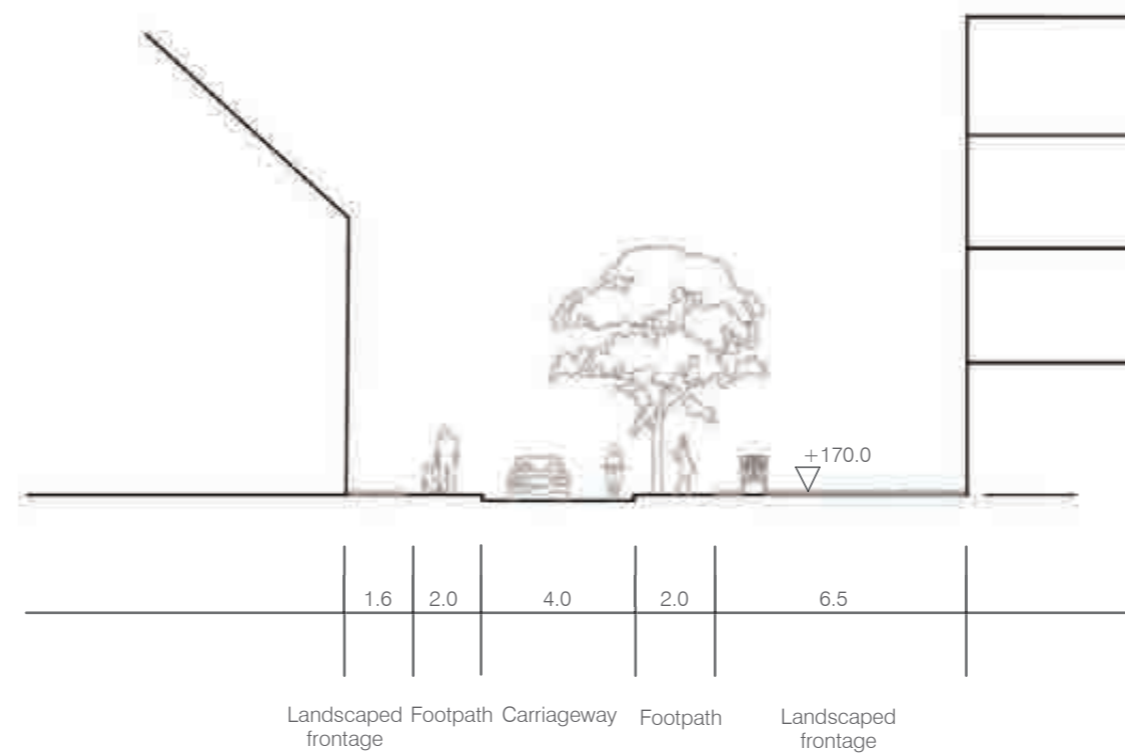


Figure 66 - Section 5 - Scale: 1:200 @ A3



Figure 67 - Section locations (not to scale)

Note: Sections are indicative of general street layout in given locations. Built form is represented only to give an impression of height and mass not architectural detail.

Carriageway dimensions subject to further investigation.

Spot heights are indicative on approximate levels and are subject to change as part of more detailed applications

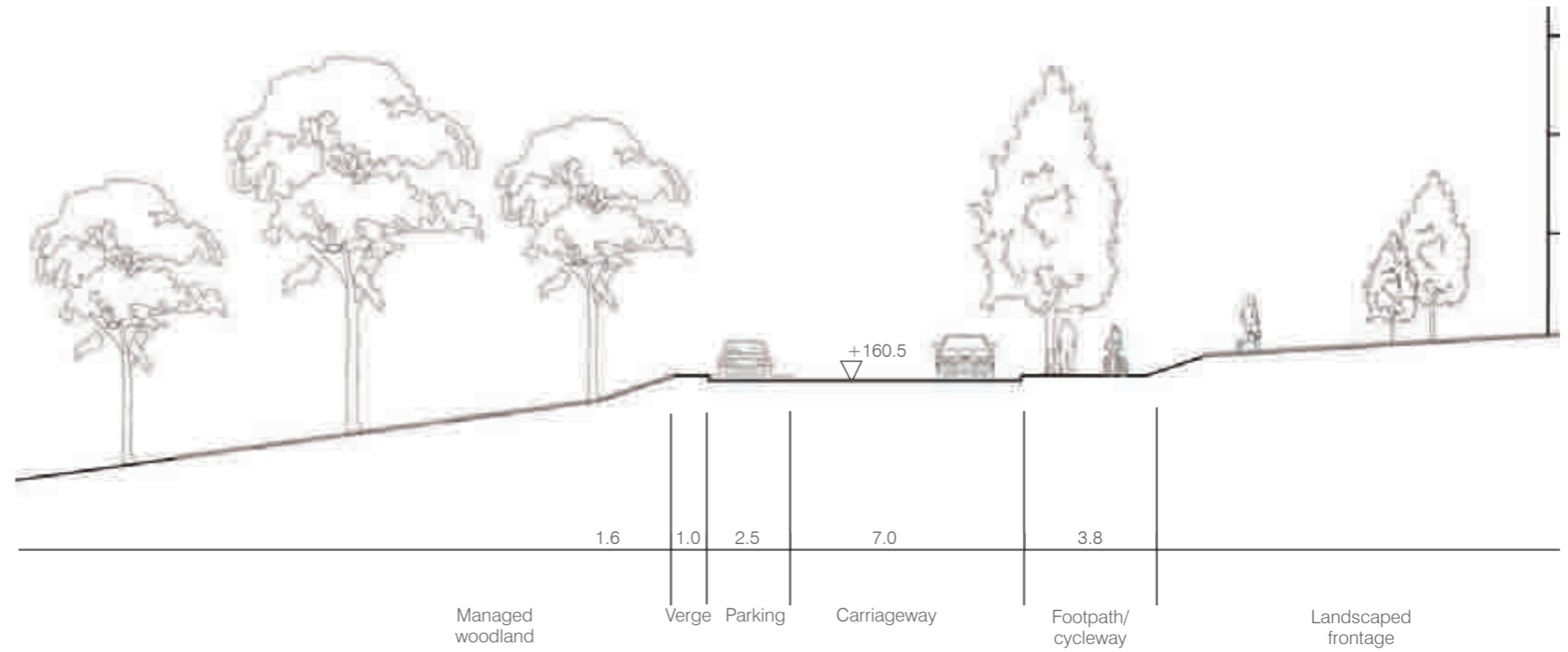


Figure 68 - Section 6 - Scale: 1:200 @ A3

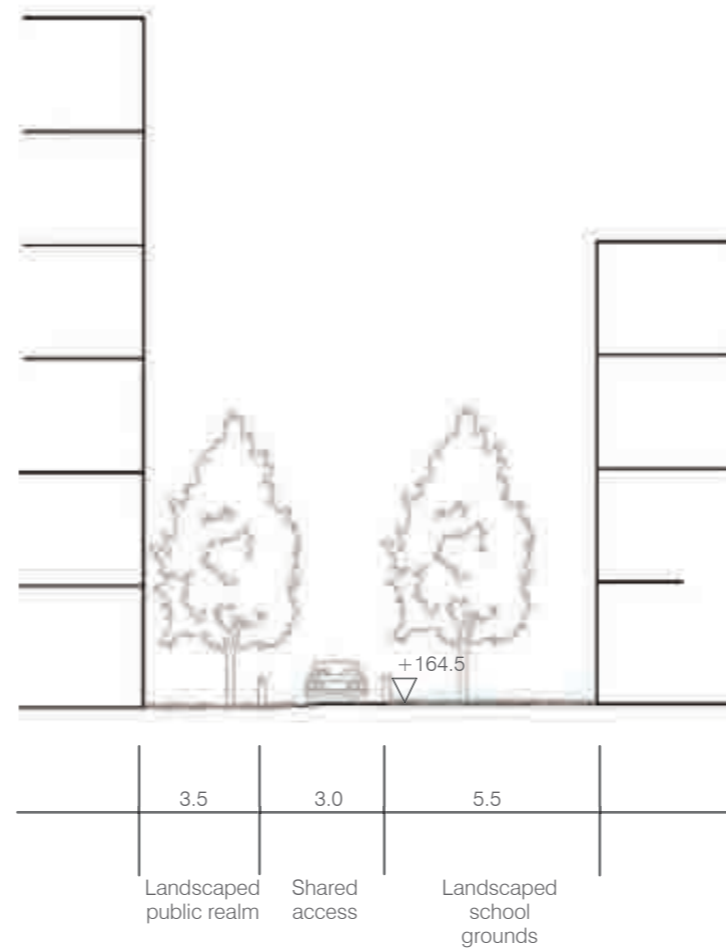


Figure 69 - Section 7 - Scale: 1:200 @ A3



Figure 70 - Section locations (not to scale)

Note: Sections are indicative of general street layout in given locations. Built form is represented only to give an impression of height and mass not architectural detail.

Carriageway dimensions subject to further investigation.

Spot heights are indicative on approximate levels and are subject to change as part of more detailed applications

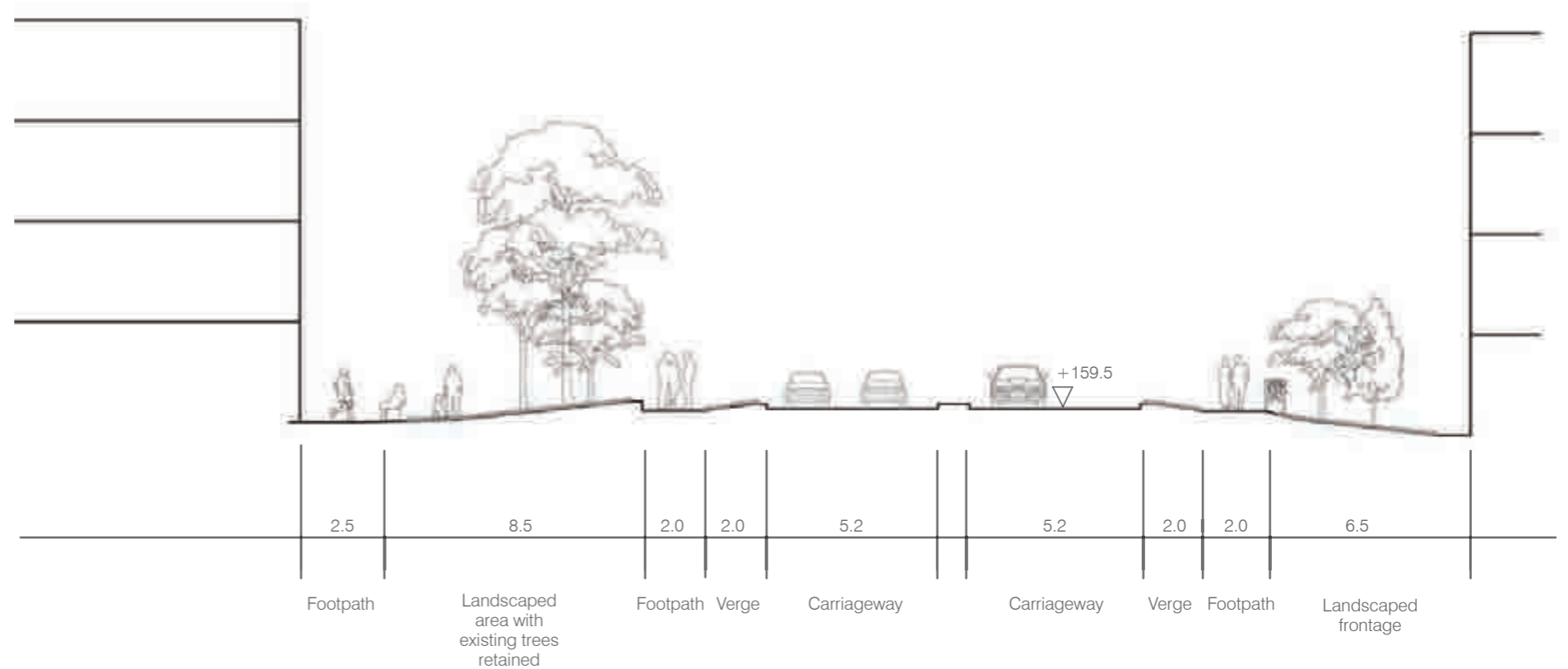


Figure 71 - Section 8 - Scale: 1:200 @ A3

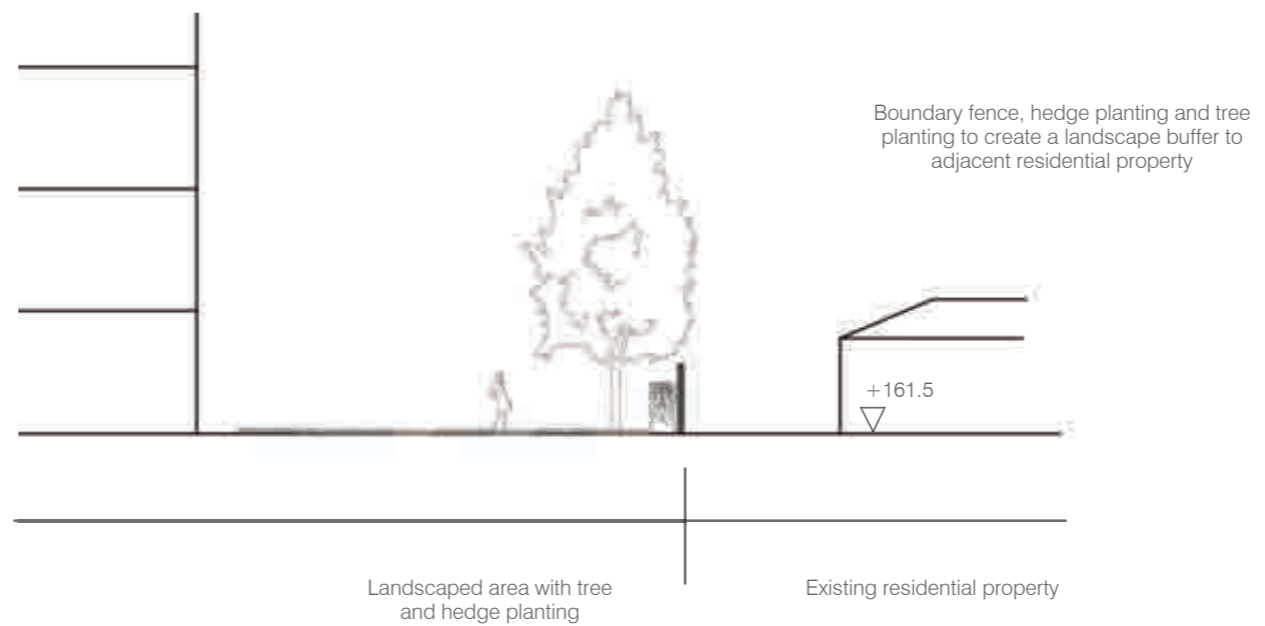


Figure 72 - Section 9 - Scale: 1:200 @ A3



Note: Sections are indicative of general street layout in given locations. Built form is represented only to give an impression of height and mass not architectural detail.

Carriageway dimensions subject to further investigation.

Spot heights are indicative on approximate levels and are subject to change as part of more detailed applications

Figure 73 - Section locations (not to scale)

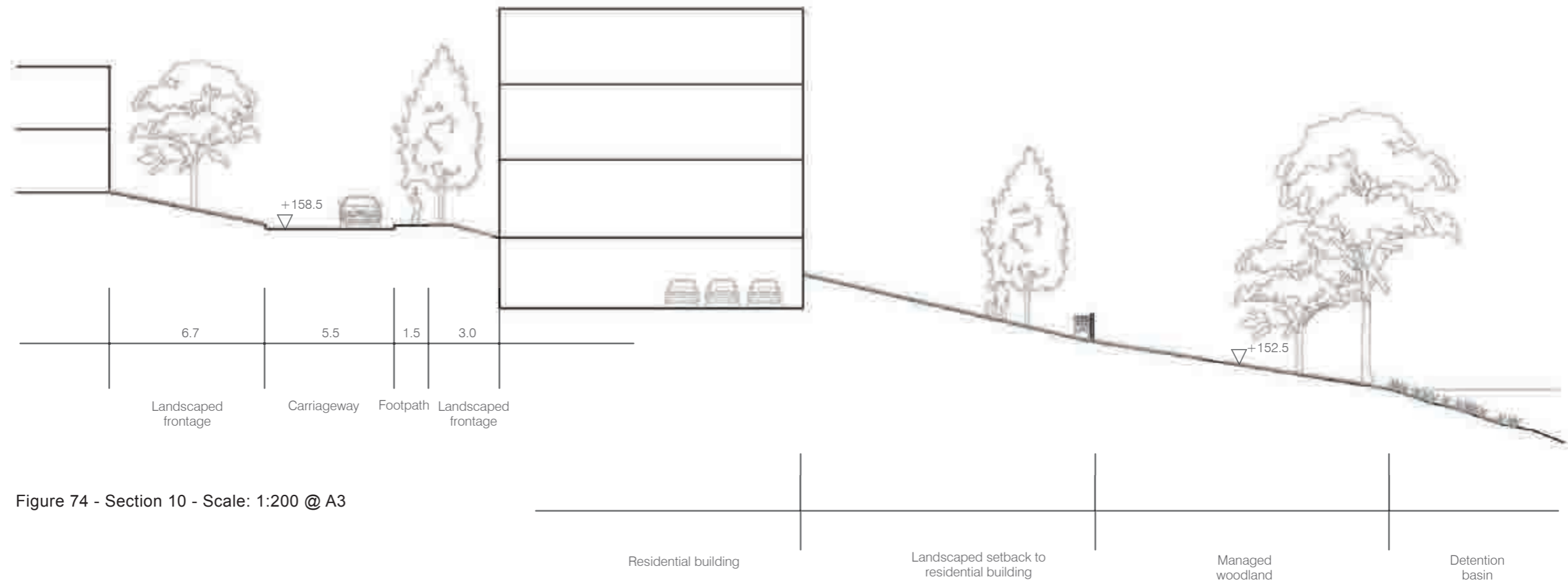


Figure 74 - Section 10 - Scale: 1:200 @ A3



Figure 75 - Section locations (not to scale)

Note: Sections are indicative of general street layout in given locations. Built form is represented only to give an impression of height and mass not architectural detail.

Carriageway dimensions subject to further investigation.

Spot heights are indicative on approximate levels and are subject to change as part of more detailed applications

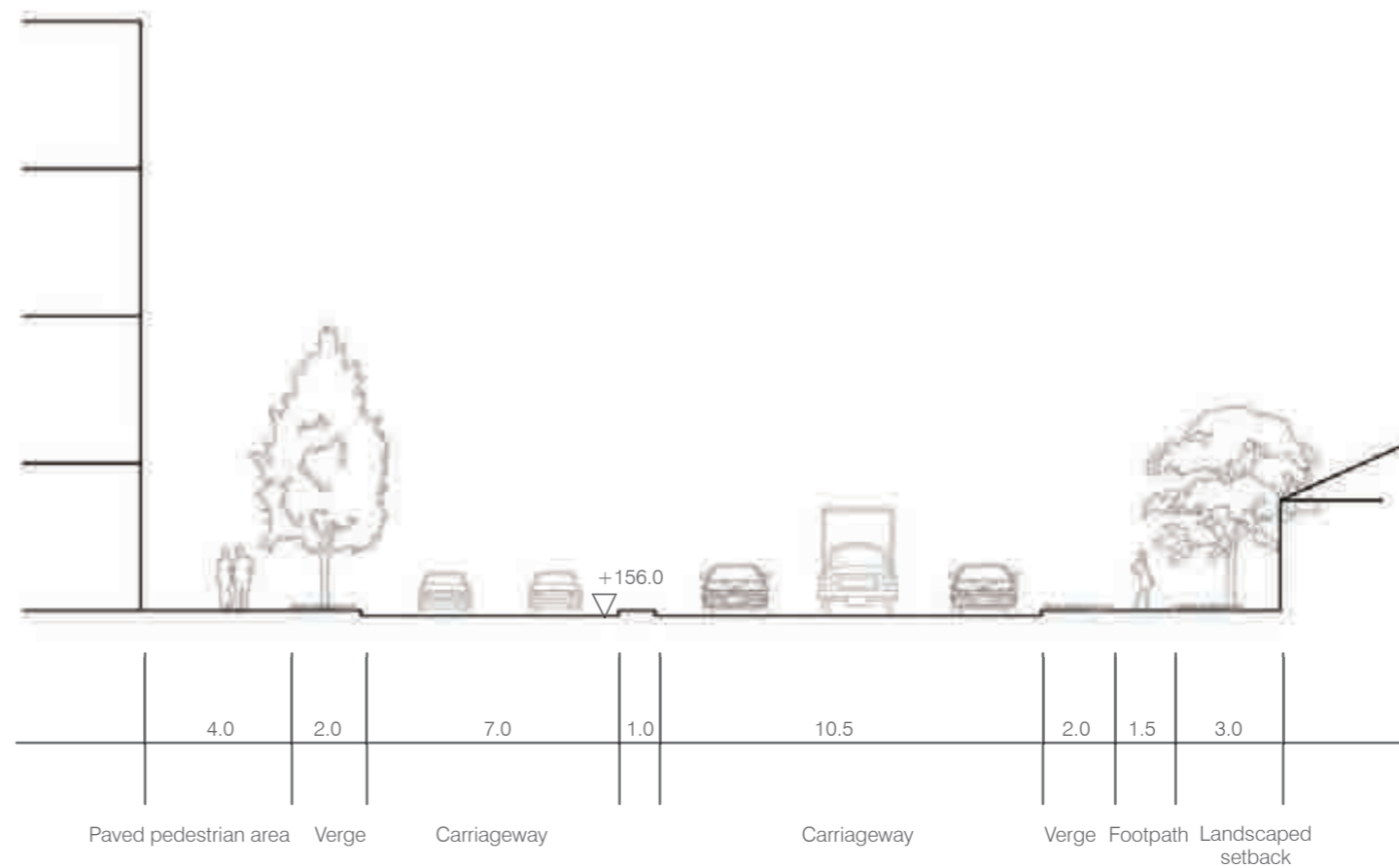
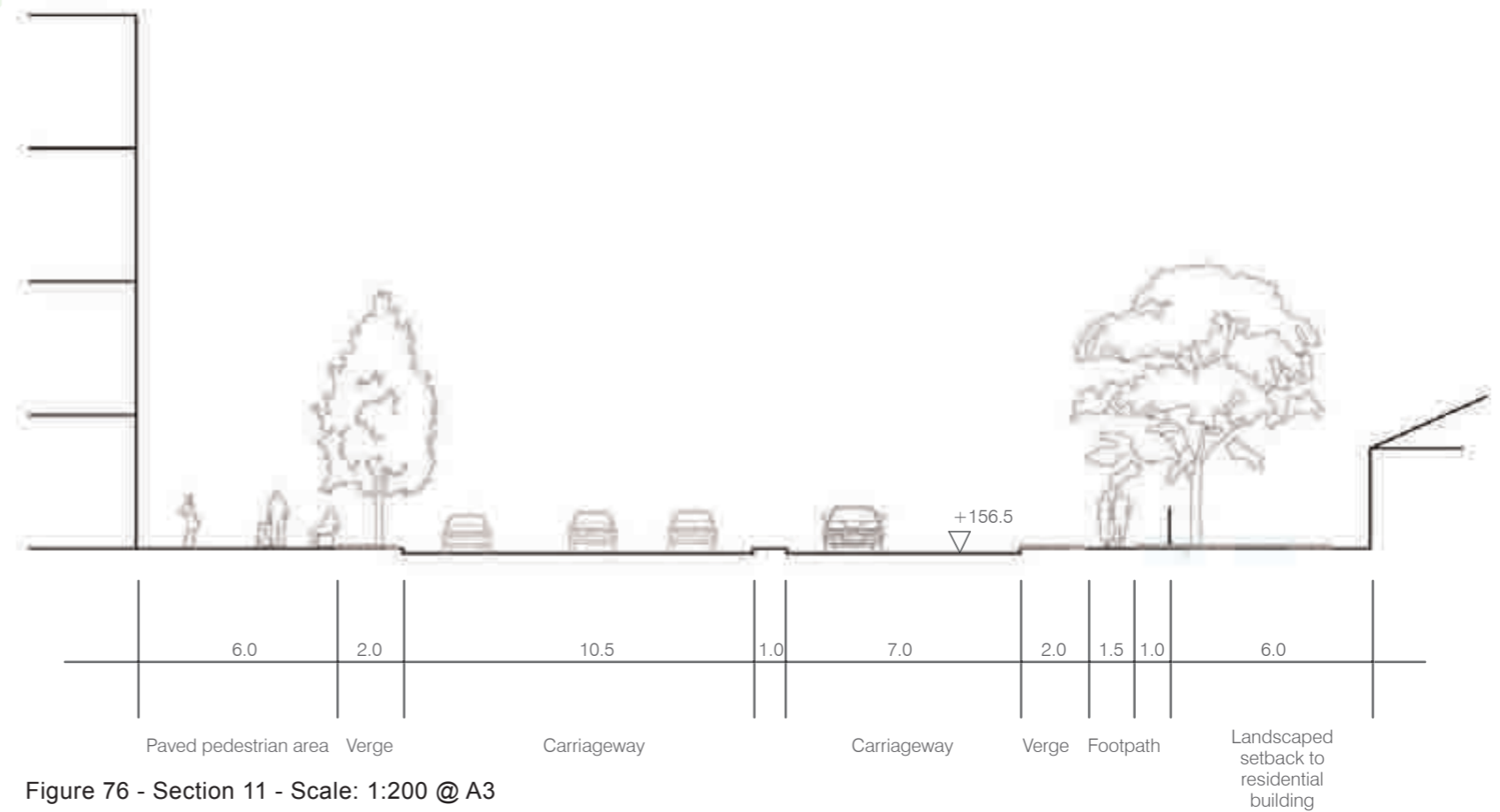


Figure 77 - Section 12 - Scale: 1:200 @ A3

8.9 Access, Circulation and Parking

8.9.1 Access and circulation

The proposal incorporates road system improvements and expansion to cater for the expected traffic generation as illustrated in **Figure 78**. Subject to negotiations with the RTA and Ku-Ring-Gai Council and the provision of off-street parking, on street parking in Fox Valley Road across the frontage of the Estate will be removed and/or restricted to provide two travel lanes in each direction.

A new intersection is proposed linking Fox Valley Road to the new access road in the northern region of the Estate. The primary Hospital access will be retained while the secondary entrance will be converted to left in / left out (except emergency vehicles) given its close proximity to the intersection of Fox Valley Road / Comenarra Parkway.

Subject to discussion with Council and the RTA, the following intersections are identified for upgrade to cater for existing traffic, network growth, and the proposed development:

- Pennant Hills Road and The Comenarra Parkway
- The Comenarra Parkway and Fox Valley Road
- Fox Valley Road and Pacific Highway
- The Comenarra Parkway and Kissing Point Road
- Fox Valley Road and Ada Street
- Fox Valley Road and Lucinda Avenue

8.9.2 Parking

At-grade hospital parking will be replaced with multi-storey parking in the Central Precinct. Parking for associated administrative and commercial uses will be provided in accordance with the rates outlined in the Traffic Report at **Appendix J**.

Table 9 below outlines the break down of parking spaces excluding the hospital that is subject to a separate parking report.

Table 9 - Parking

Type	Parking Spaces	Rates
Faculty of Nursing	119	40% at 1.5 / Student
School	123	1 / 8 Year 12 Students 1 / 1 FTE Staff
Residential Apartments	543	1 Bed: 1 / 2 units 2 Bed: 1 / 1 unit 3 bed: 1 / 1 unit Visitor: 1 / 4 units Car Share: 1 / 6 units
Student Accommodation	204	Studio/hostel: 1 / 4 units/beds 1 Bed: 1 / 2 units Visitor: 1 / 4 units/beds Car Share: 1 / 6 units/beds
Commercial	160	1 space / 100 sqm
Retail	60	3 spaces / 100 sqm
Seniors Living	25	ILU (subsidised): 1 / 2 dwellings ILU (non-subsidised): 1 / 5 dwellings Hostels / Nursing Homes: 1 / 10 dwellings, 1 / 2 staff
Houses / Townhouses	160	2 / dwelling
TOTAL:	1394 (250 on street parking)	

Residential parking is proposed at a rate that accounts for the established pattern of car usage, proposed car sharing scheme and current modal patterns within the Estate. Further evidence and discussion of the proposed car parking rates and car sharing scheme is in the Traffic Report at **Appendix J**.

The location of the proposed parking is illustrated in **Figure 79**.



Figure 78 – Vehicular Movement

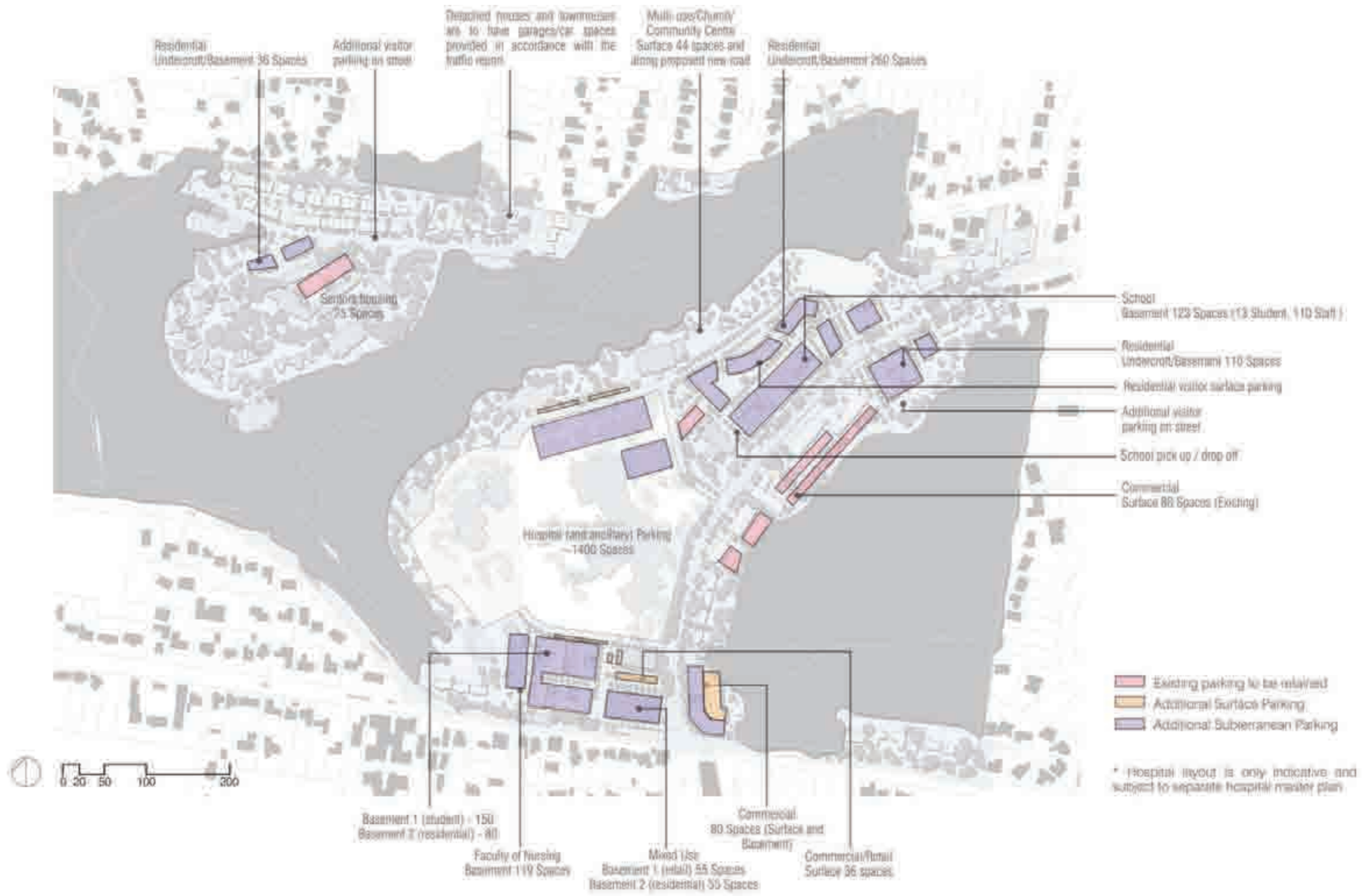


Figure 79 – Parking

To reinforce the living-working community environment it is important to deliver a well designed system to encourage alternative transport and reduce car dependence and a system of pedestrian and cycle linkages has been planned across the Estate. A plan of the proposed system is shown in **Figure 80** below.



Figure 80 – Pedestrian / Cycle Movement

8.10 Staging, Ownership and Title

The staging, ownership and titling arrangements for each of the proposed land uses and measures to ensure dwellings for staff will be retained for that purpose are outlined as follows.

8.10.1 Staging

As outlined in the submission from the proponent Johnson Property Group at **Appendix K**, staging will be determined having regard to a range of factors including:

- Commercial interests and decisions of the ACA;
- Demand for health services;
- Student enrolments, HECS funding arrangements and forecast demand for educational services;
- Commercial / retail demand;
- Dwelling demand and occupation rates;
- Transitional arrangement for relocation of existing structures (accommodation, school, hostel etc) and
- Infrastructure and servicing capacity.

While the precise timing and delivery of development will be determined by a combination of these factors the following indicative schedule is provided with respect to the proposed staging of development within the Estate. An indicative Staging Plan for the Wahroonga Estate is included in **Figure 81**.

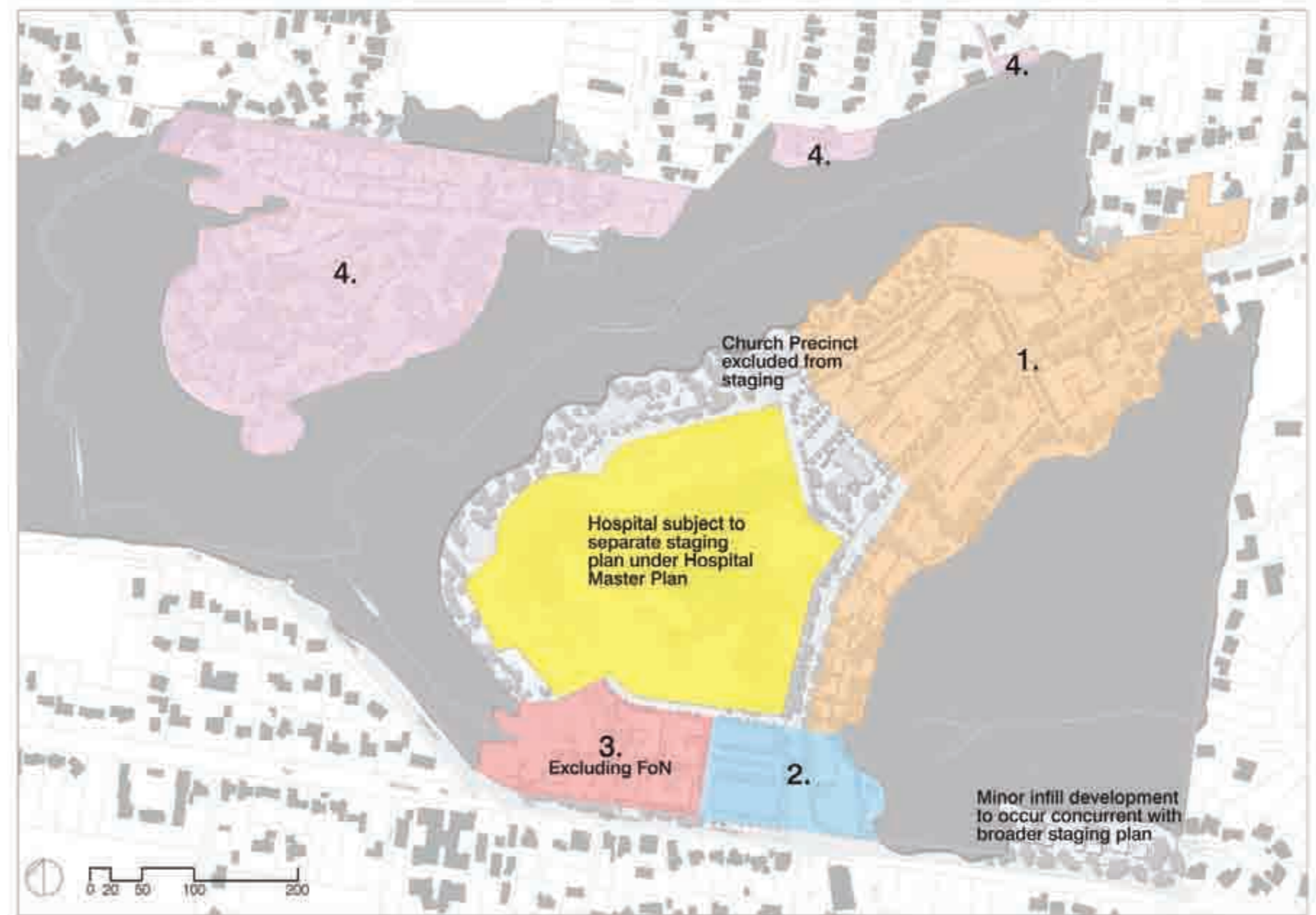


Figure 81 – Staging Plan

Hospital related development

A detailed project staging plan for the hospital related development will be submitted with a secondary concept/project application for the Hospital which will follow approval of this overall Wahroonga Estate masterplan. Notwithstanding this an indicative staging of the health related development is provided in the following table.

Table 9 – Anticipated Staging Schedule for Hospital Redevelopment

Timing	Hospital works
2010	Construction of San 2 Clinic, multi-storey car park with student / nurse accommodation and Faculty of Nursing
2015	Demolition of existing structures and construction of new hospital tower extension
2018	Clinical services building extension
2019	Demolition of existing structures and construction of new hydrotherapy pool
2020	Demolition of existing structures and construction of new multi-storey car park and sub-acute inpatients building

Non-hospital related development

Non-hospital related development will be sequenced generally in accordance with the development precincts identified in the attached plan, but having regard to the following issues:

- transition, relocation and demolition of structures associated with existing land uses (school, accommodation);
- minimisation of construction impacts on adjoining properties and the operation of existing services within the Estate;
- availability or provision of utility services and infrastructure; and
- market demand and/or the organisational requirements of the SDA.

Detailed staging plans will be provided at the project application stage for each of the development precincts and/or particular land uses. These plans will update and amend these indicative plans in response to the abovementioned issues. Development involving the refurbishment or replacement of existing dwellings and the churches has not been included in the staging plan and may occur at any stage concurrent with proposed staging of development.

8.10.2 Ownership

As outlined in the submission from the proponent Johnson Property Group at **Appendix K**, with the exception of two (2) properties¹ contained within the site boundaries, ownership of the remainder of the Wahroonga Estate is vested in the Australasian Conference Association (ACA) as the property trustees of the Seventh-day Adventist Church. It is intended that the ACA will retain ownership of SDA assets including the Sydney Adventist Hospital, media centre, administration building, Faculty of Nursing, church buildings, Fox Valley community centre, school, hostel accommodation, residential accommodation for SDA employees, Mount Pleasant retirement village and any other related or ancillary functions.

Some areas and facilities including the Coups Creek conservation area, riparian corridors and passive open spaces within the estate will preferably be transferred to a public authority (Council or State ownership) or other community based organisation through separate agreement, particularly where opportunities exist to improve connectivity with adjoining public land. Consultation with DECC is ongoing in this regard. It is intended that discussions occur throughout the process of negotiating environmental offsets and the Voluntary Planning Agreement.

Components of the commercial, retail and residential development will be available for private investment / purchase. These measures will provide capital to fund expansion of the health and other ACA facilities within the Wahroonga Estate. Some investment / private development may contain provisions or restrictions on title to maximise occupation and use by organisations and staff within the Wahroonga Estate.

Further consideration of ownership in the context of preparing the Preferred Project Report

The project has four major target markets.

1. The retirement living market is addressed via 195 self care units specifically aimed at meeting the needs of seniors. The ACA currently own these properties and we understand that the intention to retain these properties in perpetuity will not change as a consequence of the rezoning. There is no need to apply restrictions on these properties.
2. The student/trainee market is intended to be housed via 301 apartments configured into 1 and 2 bedroom apartments. These are located within the SP2 zone and in proximity to both the faculty of nursing (educational facility) and the hospital itself. The design and price points that we envisage for those products are focussed on attracting this market.

Accordingly, the application of legal restriction on the use of this accommodation type may impact on the commercial decisions that may need to be made from time to time. For example, in the event that a student owner failed the course and decided to leave the educational establishment, the proposed restriction would require that student to only sell to another student. We believe that this condition leads to difficulties with enforcement and limits the market for every subsequent owner without real benefit. In any case, it is likely that only another student would be attracted to the product due to its location and design. Therefore the restriction would be unnecessary.

¹ Properties at 149 & 151 Fox Valley Road are not owned by the ACA but the owners have provided authorisation to be included in the concept plan.

3. As outlined in Appendix K of the exhibited documents, there are 324 dwellings proposed to be retained by ACA for hospital and church staff accommodation. Given that this intention is seeking to satisfy a need generated by the presence of the hospital and the church activities on the site, it is unlikely that the ACA will not retain ownership or control of somewhere near this number of dwellings. It would be reasonable for the ACA to be able to vary this number according to demand and need. As such, there is little to be gained by a formal restriction on title and a considerable commercial impost for the owner and developer of the site.

In any event, the same objection as above to the imposition of a formal restriction on title applies. For example, if a staff member was face with a life changing event such as losing their job, illness, relocation etc etc, would they be required to vacate their home. Clearly this would be unreasonable and inequitable for members of this community and not likely to appeal to any prospective purchaser, regardless of their interests in the Wahrenonga activity centres.

4. The balance of the project has no predetermined status other than a general intention to house people who are anticipated to be drawn from the wider local community, including those with daily activities at the Wahrenonga estate.

In conclusion, the intention to accommodate workers from the Wahrenonga Estate within the Wahrenonga Estate will be a function of commercial considerations that would include, design, price, product suitability and location relative to various facilities both within and external to the site.

The application of any formal restriction on title is unreasonable, inefficient and may unfairly impact on residents in unpredictable ways (particularly during times of personal challenge) which would ultimately act as a disincentive to the success of the project.

8.10.3 Titling

As outlined in the submission from the proponent Johnson Property Group at **Appendix K**, titling within the Wahrenonga Estate will consist of a combination of some or all of Torrens, strata and community title. The application of titling arrangements will be dictated by intended ownership, occupation, commercial considerations, and legal issues related to preferential occupation, car sharing contributions etc. Separate or amalgamated Torrens title is considered most appropriate and likely for the following uses:

- Sydney Adventist Hospital and ancillary health facilities;
- School;
- Churches;
- Faculty of Nursing,
- Mission Hostel (if contained in a separate self contained building);
- Open space / conservation areas;
- Dedicated student/nursing accommodation within the hospital precinct;

- Residential care facility;
- Dwelling houses;
- Attached / detached dual occupancy dwellings; and
- Townhouses.

Strata title is preferential and likely for the following:

- Residential flat buildings;
- Multiple dwelling housing;
- Commercial offices; and
- Retail premises.

Community title may be appropriate for seniors / independent living dwellings and other medium density residential development.

8.10.4 Measures to retain church / staff accommodation

A significant proportion of the dwellings and other accommodation within the Wahrenonga Estate are intended for occupation by people employed within the Estate or the Church more generally. Measures to retain / prioritise dwellings for employees / key workers may include some or all of the following measures (refer to written submission of Johnson Property Group at **Appendix K**):

- ownership, management and allocation of dwellings by the ACA (or designated organisations within the Church such as the hospital, ACA Administration Centre, school etc);
- leasehold title for occupation of dwellings;
- long term leases over non-ACA owned dwellings;
- first right of refusal on buy-back of non-ACA properties; and
- restrictions as to user registered against the title of the property (eg: sections 88E or 88B of the [Conveyancing Act 1919](#)) limiting the use of any such accommodation to staff / student / critical health worker accommodation.

The proposed mechanism for specific residential development will be identified and applied through the project application process for individual stages of development.

8.11 Gazetted Statutory Planning Amendments

The Estate has recently been gazetted as a State Significant Site. The new statutory controls include:

- Zoning of the Estate to include a retention of a core and Special Activities zone for the hospital and related uses and accommodation
- High density residential precinct adjacent to Fox Valley Road and low and medium density zones relating to other existing residential areas
- Neighbourhood centre scale retail and commercial uses to support the precinct
- The remainder of the site for the purposes of Environmental Conservation
- A maximum of 500 dwellings
- Heights ranging between 9.5m and 39.5m across the site

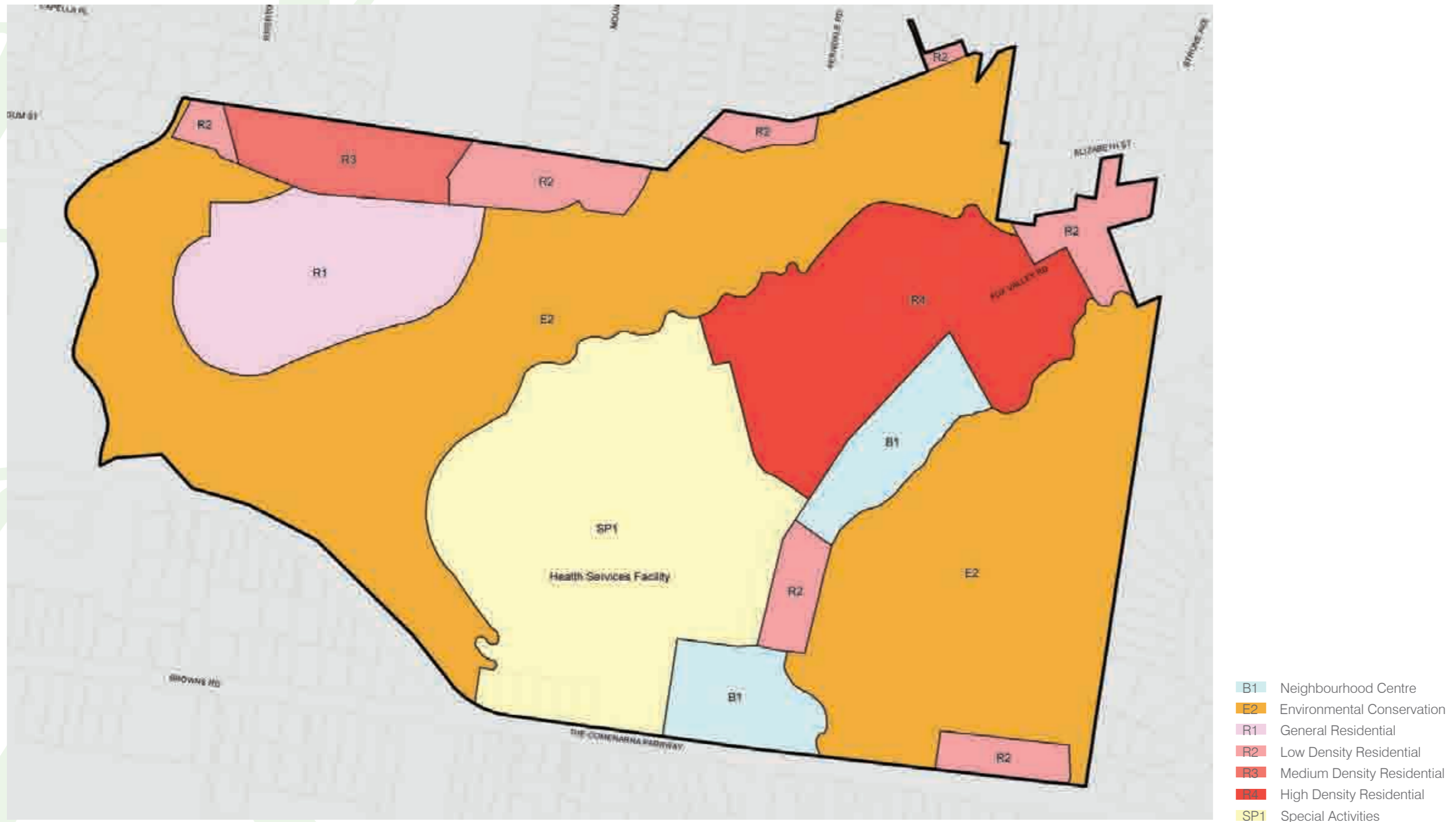


Figure 82 – Zoning (Image source: NSW Planning)

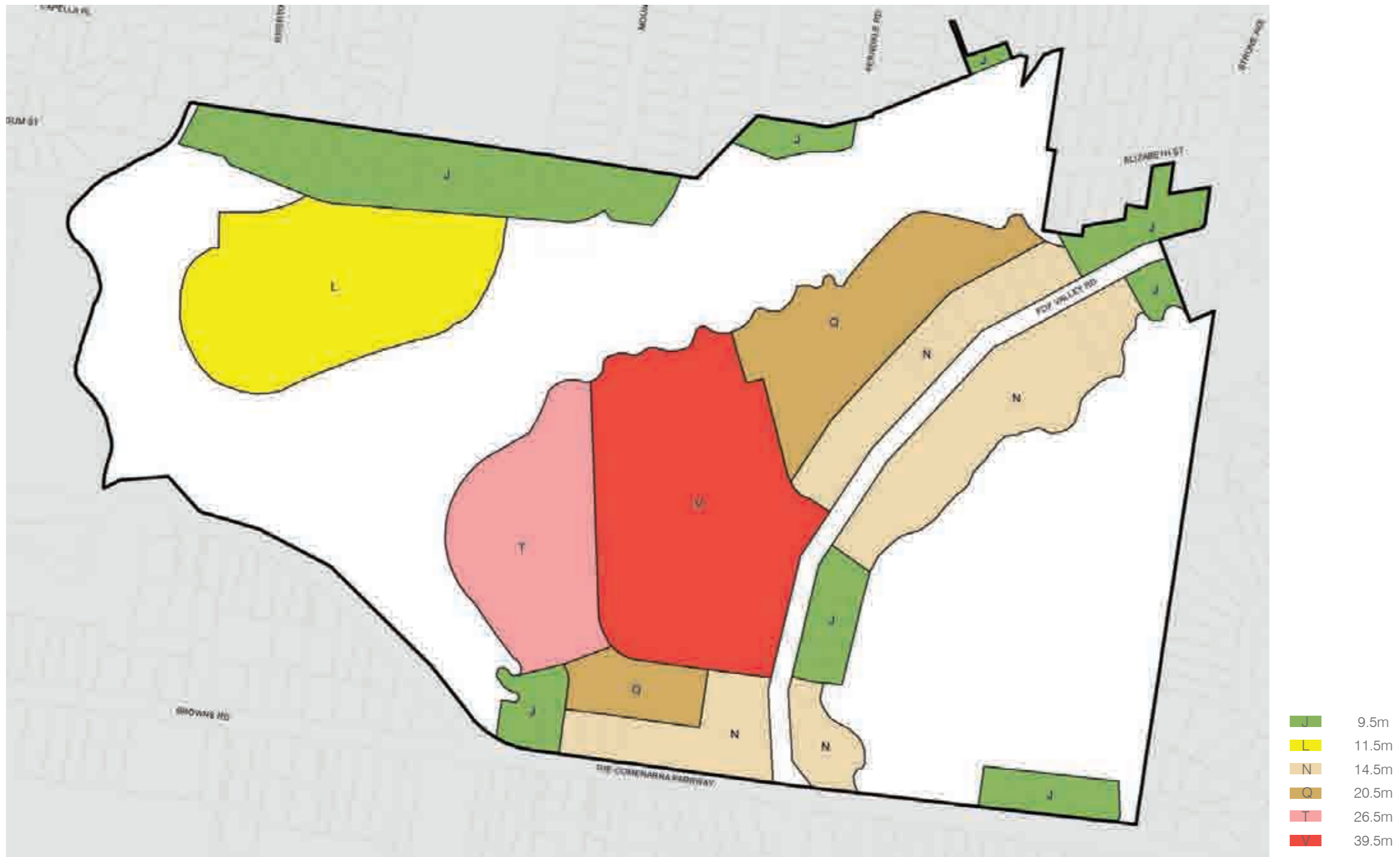


Figure 83 – Height (Image source: NSW Planning)

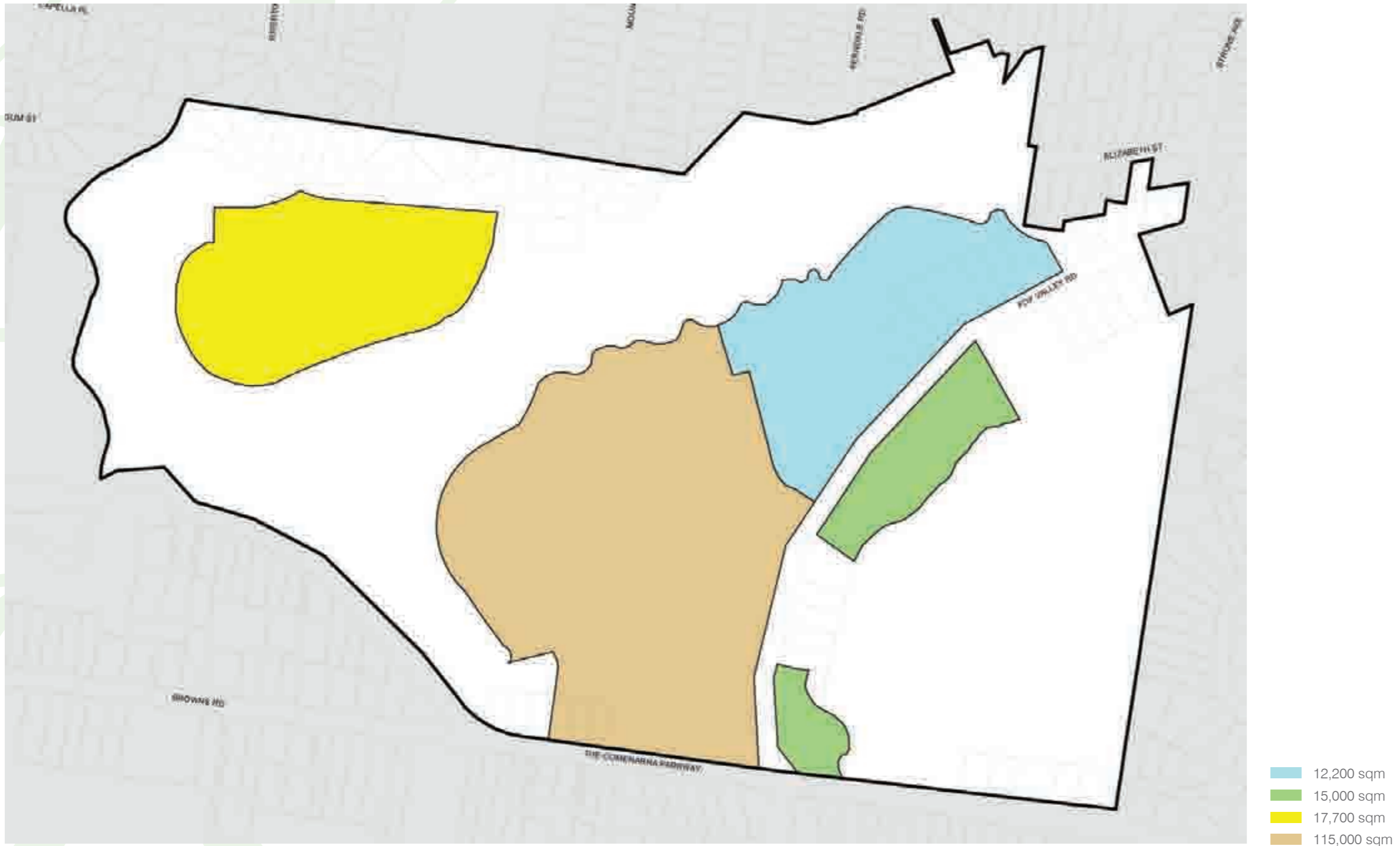


Figure 84 – Maximum Gross Floor Area (Image source: NSW Planning)



Figure 85 – Heritage (Image source: NSW Planning)

9 ENVIRONMENTAL ASSESSMENT

9.1 Consistency with relevant planning legislation

9.1.1 State Environmental Planning Policies

The following State Environmental Planning Policies (SEPPs) apply to the project. A description and an assessment of the proposed development in relation to each of these Environmental Planning Policies are included in the table below.

Table 11 – SEPP Compliance Table

SEPP	Outline	Compliance
State Environmental Planning Policy (Infrastructure) 2007	The SEPP assists the NSW Government, local councils and the communities they support by simplifying the process for providing infrastructure in areas such as education, hospitals, roads, railways, emergency services, water supply and electricity delivery.	As required by the SEPP, the proposal will be referred off to the RTA for comment. Otherwise, the provision of the SEPP have been taken in to consideration in the preparation of the proposed zoning regime for the site.
State Environmental Planning Policy (Major Projects) 2005	The purpose of this policy is to define what projects are subject to Part 3A of the EPAA and require ministerial approval. SEPP (Major Projects) 2005 sets out a list of categories of development which are declared to be projects to which Part 3A applies. An applicant must apply to the Director General of the Department of Planning to establish whether Part 3A will apply to the project.	The project is consistent with SEPP Major Projects in that it involves the redevelopment of an existing hospital of significance to the State, and the orderly use, development and conservation of surplus transit oriented public land in direct accordance with the objectives and provisions of the Metro Strategy. The project is primarily for a public purpose and includes the redevelopment of those parts of the site no longer required for that public purpose.
State Environmental Planning Policy (Seniors Living) 2004	The purpose of this policy is to encourage the provision of housing which meets the needs of seniors or people with a disability.	Additional seniors living is catered for within the existing seniors development in the Mount Pleasant precinct. Any future development will be designed with consideration to this Policy.

SEPP	Outline	Compliance
State Environmental Planning Policy (Building Sustainability Index) 2004	This SEPP operates in conjunction with Environmental Planning and Assessment Amendment (Building Sustainability Index: BASIX) Regulation 2004 to ensure the effective introduction of BASIX in NSW. The SEPP ensures consistency in the implementation of BASIX throughout the State by overriding competing provisions in other environmental planning instruments and development control plans.	Compliance with BASIX provisions is a statutory requirement and has also been included in the draft Statement of Commitments.
SEPP 10 – Retention of Low-Cost Rental Accommodation	The aim of this SEPP is to ensure that people on low incomes have housing they are able to rent by ensuring there are a mix of housing types available in each local community.	The project provides a range of housing types, including low cost accommodation for nursing students and key workers within the Estate and is thus consistent with the aims and objectives of SEPP 10.
SEPP 11 – Traffic Generating Development	This SEPP requires the Roads and Traffic Authority is made aware of, and is given an opportunity to make representations on certain traffic generating developments.	It is assumed that the Minister will seek the views of the Roads and Traffic Authority, consistent with the aims and provisions of SEPP 11.
SEPP 19 – Bushland in Urban Areas	This SEPP requires that when preparing draft environmental planning instruments consideration shall be given to retaining bushland, unless significant environmental, economic or social benefits arise to outweigh the value of the bushland.	A comprehensive survey and assessment of the impact upon urban bushland has been undertaken as part of the proposal.
SEPP 44 – Koala Habitat Protection.	The main aim of this SEPP is to ensure proper protection of existing koala habitats, through the conservation and management of natural vegetation area that provide these habitats. As outlined in Schedule 1, this SEPP is applicable to the Ku-ring-gai LGA.	The ecological studies have not found any core Koala Habitat under SEPP 44.

SEPP	Outline	Compliance
SEPP 55 – Remediation of Land	This SEPP requires that land must not be rezoned or developed unless contamination has been considered and, where relevant, land has been appropriately remediated.	A preliminary contamination analysis has been undertaken to demonstrate that the site can be made suitable for its proposed purpose (see Section 9.10). The Statement of Commitments (see Section 10) includes a commitment to undertake a further contamination assessment as part of any subsequent project application. The project is thereby consistent with SEPP 55.
SEPP 65 – Design Quality of Residential Flat Buildings	This SEPP includes design principles to raise the design quality of residential flat buildings. It also requires that in the preparation of environmental planning instruments and development control plans, provisions are included to ensure the achievement of design quality principles.	As outlined in the discussion on design, the proposal has been designed to accord with the principles of SEPP 65, refer to assessment against principles in Section 9.3

9.1.2 Ku-ring-gai Planning Scheme Ordinance

The proposed hospital and related components that characterise the project are permissible under the existing 5(a) Special Uses (Hospital) zoning. While the extent of proposed commercial, residential school and church uses are beyond the scope of ancillary hospital uses permitted in the existing zone, the scale and scope of the mixed use development is considered to be appropriate in a specialised hospital precinct and not inconsistent with that seen in other specialised health service areas.

Density

Section 43(3)(a) of the KPSO states that a dwelling house shall not be erected in Zone 2(c) on any allotment which has an areas of less than 929 square metres. This gives an effective density of the surrounding area of 10.8 dwellings/ha. Urbis' analysis (refer **Figure 87**) indicates that the density of the surrounding residential development ranges from 7.8 dwellings/ha to 11.6 dwellings/ha.

As discussed in Section 9.3 of this report, the proposed density of the overall Wahroonga Estate site is 16.6 dwellings/ha. Although at a higher density than the surrounding residential area, the higher density is considered appropriate for this specialised centre. The combination of high levels of employment and good access to facilities and services is sound justification for maximising the density to within the reasonable limits of transport infrastructure and amenity impact of the adjoining residents.

The assessment of transport infrastructure finds that the proposed density is reasonable. Factors such as an innovative car sharing scheme and a significant proportion of workers living on site assist in achieving the proposed density.

Impact upon adjoining properties has been mitigated through designing a transition of built form. The built form immediately adjacent to adjoining properties adopts a similar scale and all larger buildings are located centrally to the site.

Height

The height of the SAN hospital is 12 storeys or 42 metres and the existing surrounding residential development is maximum 2 storeys or 8 metres. The height of development proposed in this Concept Plan has been developed to respond to the height of existing buildings on the site and surrounding areas, and is outlined and discussed in **Section 9.3** of this report.

Heritage

Schedule 7 of the KPSO outlines all Heritage Items in the Ku-ring-gai LGA. The Adventist Administration Building is the only identified heritage item (local) within the Wahroonga Estate Redevelopment.

The Wahroonga Estate Redevelopment Master Plan has identified that a number of the buildings, which have been identified as having potential heritage significance, will be removed or relocated. Further, any artefacts exposed during the demolition of buildings have the ability to make a significant contribution to the interpretation of the Sydney Adventist's in Wahroonga. In accordance with heritage best practice, an archival photographic recording will be prepared for these particular elements to Heritage branch standards to ensure that the contribution of these buildings to the historical development of the Sydney Adventists in Wahroonga is not lost.

A Heritage Impact Assessment in relation to the Concept Plan has been prepared by Australian Museum Business Services (AMBS) and is included as **Appendix H** to the report.

9.1.3 Section 117 Ministerial Directions

The following Ministerial Directions apply to the project. A description and an assessment of the proposed development in relation to each of these Ministerial Directions are included in the table below.

Table 12 – Section 117 Direction Compliance Table

Section 117 Direction	Outline	Compliance
No. 17 – Integrating Land Use and Transport	This direction seeks to ensure that urban structure, building form, land use locations and subdivision design helps to integrate land use and transport and minimise the need to travel by private car, increases choice of public transport, reduce travel demand, and supports viable operation of public transport.	The proposed density, mix and location of new residential and business proposed as part of the Wahroonga Estate is directly consistent with 'Improving Transport Choice – guidelines for planning and development' (DUAP 2001), and 'The Right Place for Business and Services – Planning Policy' (DUAP 2001).
No. 19 – Planning for Bushfire Protection	This direction requires that consideration be given to land that is subject to bushfire hazard and, where relevant, draft LEPs should provide setbacks and controls which avoid placing urban development in hazardous areas.	The development of the Wahroonga Estate is consistent with 'Planning for Bushfire Legislation' (2006) (see Section 9.8).
No. 21 – Residential Zones	This direction requires that residential development is not permitted until land is, or can be shown to be, adequately serviced with water and sewerage.	The proposed Wahroonga Estate is consistent with Direction 21: The site is already served by water and sewerage infrastructure that will be augmented in consultation with the relevant utility provider as necessary to accommodate the project (see Section 9.11). The project provides for a variety of housing forms and increases the permissible residential density on the land.
No. 26 – Special Area Zones and Recreation Zones	This direction requires that special use zones are not created altered or removed without the approval of the relevant public authority and the Minister for Planning.	The land currently zoned Special Uses – Hospital to be incorporated into the SP2 zone as per the standard instrument. The proposed rezoning is therefore consistent with Direction 26.

9.1.4 Development Control Plans

Regard has been made to the Ku-ring-gai DCPs where relevant to the broad considerations of the Concept Plan. In particular, the following DCPs have been addressed in the Concept Plan and State Significant Site Listing.

Ku-ring-gai DCP 38 – Residential Design Manual

The Concept Plan is consistent with the aims of this DCP and the general design principles of this DCP have been adhered to in the precinct plans outlined in Section 8. Specific design details, as outlined in Section 4 of this DCP, will be addressed at the Project Application stage.

Ku-ring-gai DCP 43 – Car Parking Code

A comprehensive review of car parking has been undertaken which has considered Council's car parking rates and the nature of the development. The Transport Report (Refer **Appendix J**) includes a justification of the most appropriate car parking rates for the Estate.

The proposed parking provision rates for residential, commercial and retail uses are below those set in the Ku-ring-gai Council DCP for parking. However they are considered appropriate having regard to the high proportion of employees that will live on the site, a proposed car sharing scheme and the predominance of retail visitors from residents and employees of the site.

Ku-ring-gai DCP 46 – Exempt and Complying Development.

Development within the Wahroonga Estate that satisfies the requirements for exempt development or complying development specified in Development Control Plan (DCP) 46 is exempt development or complying development, as appropriate.

Ku-ring-gai DCP 47 – Water Management and Councils

As outlined in Section 9.12 of this report, the proposed integrated water cycle management strategy, the principles and requirements of on-site detention for flood control and the requirements to control the rate of stormwater runoff and to reduce peak discharges during storm events (and thus minimise flood events and pressure on the downstream stormwater infrastructure) have been adopted for the site in accordance with Ku-ring-gai DCP 47.

Ku-ring-gai DCP 48 – Medium Density Residential Development

The Concept Plan generally complies with the design guidelines of this DCP, however, as outlined in Section 8.4 of this report, there are a number of instances where the proposed built form varies from the Medium Density Residential Development DCP 48 for a number of reasons, these include:

- Size of the site and ability to provide adequate deep soil zones surrounding the building envelopes.
- The building envelopes satisfy the building form objectives specified in the DCP including creating an interface in building form between the SAN Hospital and low density residential.

- Unbroken walls of over 24m in length are common in existing buildings and are not out of character due to the campus style of development.
- To ensure building construction efficiency.
- Limitation of long walls along visually prominent locations such as along Fox Valley Road has been avoided.

An assessment of the built form, including analysis of the height, bulk, scale, density of buildings proposed and an assessment of any impacts is included in Section 9.3 of this report.

Council's Riparian Policy 2004 and Biodiversity Strategy 2006 were also referenced in the preparation of technical reports in relation to the establishment of the APZ, protection of biodiversity, rare flora and fauna and preservation of water quality. The concept plan complies with the principles outlined in these strategies.

9.2 Strategic planning and site suitability

As discussed in **Section 3** of this report, the Wahroonga Estate is located in the North Subregion of the NSW Metropolitan Strategy. The Draft North Subregional Strategy has been prepared by the Department of Planning and was on exhibition for community comment until 8 February 2008.

The Wahroonga Estate development is consistent with the Draft North Sub-Regional Strategy, through the following key features of the project:

- The Wahroonga Estate will create over 1,000 operational jobs in the short term; over the next five years. An additional 3,000 to 5,000 operational jobs will be generated over the medium term expansion phase. Over the course of the construction program the equivalent of 11,000 jobs will be created;
- The Wahroonga Estate will assist in meeting the key housing for the North Subregion, through the creation of 717 dwellings and 538 beds of hostel/student/aged accommodation;
- The concentration of health related education and research facilities within the hospital precinct will have operational synergies and infrastructure savings in accordance with government policy objectives; and
- The overall improvement of the existing facility accords with a key priority of the NSW State Plan to **'improve access to quality health care'**.

Furthermore the site is considered suitable for the proposed development as the proposal seeks to reinforce the existing employment hub through expansion of the health care service function of the site in accordance with the Draft North Subregional Strategy.

The site has a substantial underutilised curtilage which overlooks existing urban bushland offering significant natural amenity for future development. The Environmental Assessment of this project has concluded that the site is physically capable of accommodating additional development without significant environmental impacts.

9.3 Urban Design – Built Form

Compliance with SEPP 65

The building envelopes designated for residential development are typically orientated to the north, east and west to ensure excellent light and solar access and consequently provide a high level of internal residential amenity. Where this cannot be practicably achieved, dwellings are compensated where possible by an outlook to the surrounding bushland.

The proposed layout will generally allow the requirements of SEPP 65 to be met, as identified in the following paragraphs. This will also be detailed at the project application stage when building designs are completed.

Context

The site comprises of urban development predominantly centred along Fox Valley Road which is anchored by a proposed extension of the Fox Valley neighbourhood centre. Proposed building envelopes step down in bulk and scale from the SAN Hospital to create an interface between the adjoining predominantly low density residential development. There is minimal visual impact from adjoining properties and significant native vegetation proposed for retention along boundary edges. The proposed building envelopes are located to maximise solar access for both existing and proposed buildings as well as open space. The proposed building envelopes also ensure an appropriate urban form is maintained within the Ku-Ring-Gai setting with the provision of significant deep soil planting opportunities and building setbacks, providing adequate amenity and privacy for building occupants.

Scale

The proposed development allows hospital buildings up to 12 storeys (42 metres) and residential buildings of up to 6 storeys (21 metres). Importance is placed on providing a scale of building which is sympathetic to the surrounding environment. The character of the important linkage of Fox Valley Road is retained through limited building height bulk along the frontage.

The topography of the site allows a transitional interface between the significant change in bulk and scale afforded by the surrounding development. The ability for development to provide upper level setbacks particularly when viewed from the street provides a sense of scale of character to the surrounding area. Car parking is proposed to be provided below ground and undercroft in locations where level changes allow, to reduce the bulk and scale of the proposed envelopes. The provision of areas to retain the existing landscape characteristic in the form of significant plantings in deep soil zones also provide an effective visual separation between buildings as well as framing and softening the scale of the building.

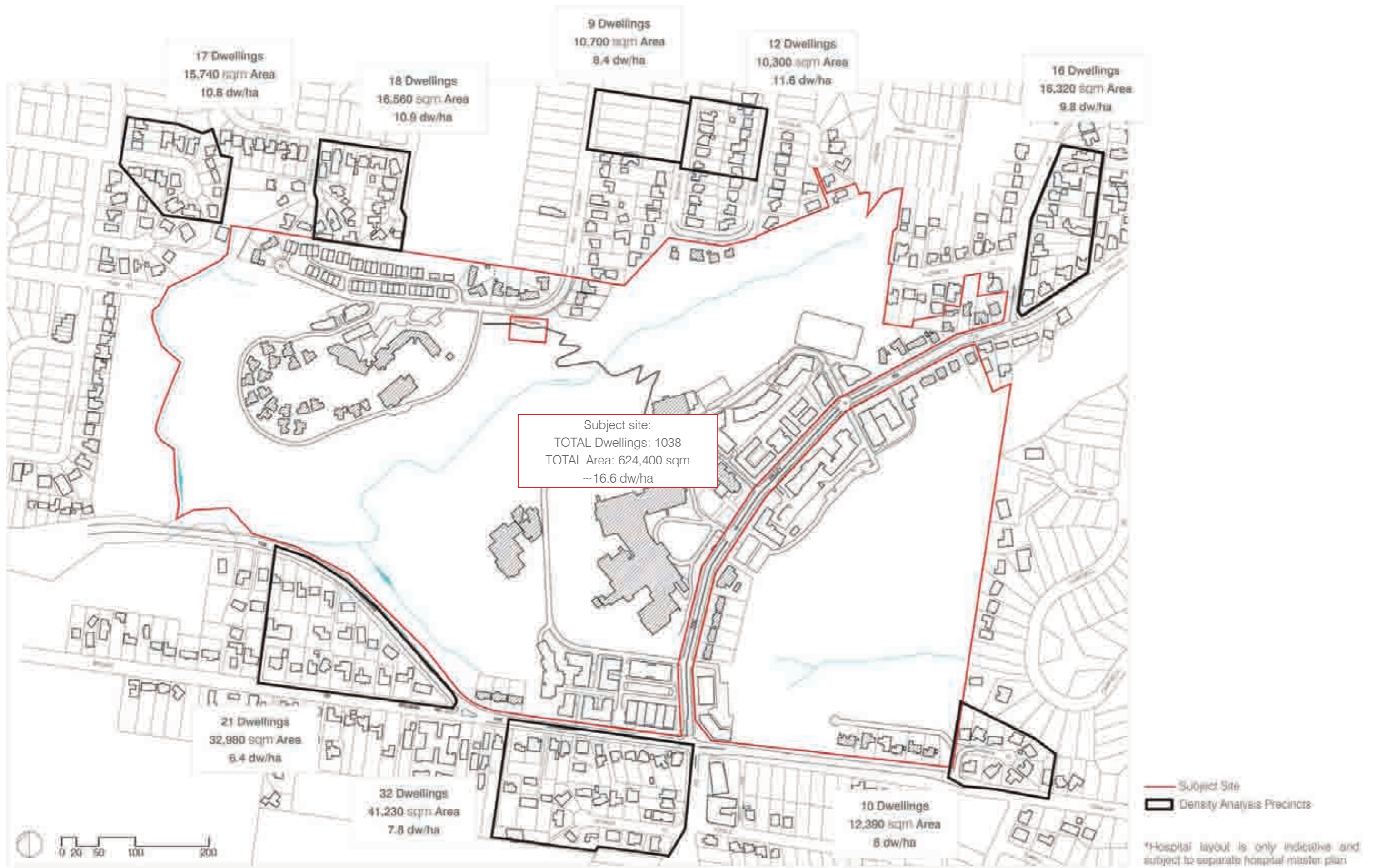


Figure 86 – Surrounding Density

Built Form

The built form of the proposal has been sensitively designed to reflect the constraints of the site, the existing form and surrounding context. The contemporary form has been designed to create a transition between the main hospital development and adjacent buildings in terms of scale, form and material. Great importance has been placed on allowing careful articulation and detailing of facades to create a visually impressive building form of the highest standard particularly in locations of visual prominence.

The building envelopes provide an appropriate scale when viewed from the streetscape, with a series of forms creating spaces and connectivity through legibility. Changes in level further assists in creating an interesting built form. Large landscaped areas provide a good backdrop for the building and a green outlook, further softening of the built form. Envelopes are well setback from the front and rear boundaries, providing benefits of the strong vegetation setting. The separation allows for good solar access for envelopes, and cross ventilation to habitable rooms in the development.

The maximum wall length varies from the Medium Density Residential Development DCP 48 for a number of reasons, these include:

- Size of the site and ability to provide adequate deep soil zones surrounding the building envelopes.
- The building envelopes satisfy the building form objectives specified in the DCP including creating an interface in building form between the SAN Hospital and low density residential.
- Unbroken walls of over 24m in length are common in existing buildings and are not out of character due to the campus style of development.
- To ensure building construction efficiency.
- Limitation of long walls along visually prominent locations such as along Fox Valley Road has been avoided.

Density

The proposal is reflective of the character of a campus style development transitioning low density residential development. The proposed envelopes demonstrate that daylight access and natural ventilation can be maximised, providing high levels of amenity to residents and workers. The bulk and scale of the building envelopes are limited in areas of visual prominence including along Fox Valley Road which demonstrates a suitable residential and employment density.

The existing site density is 7.0 dwellings per hectare (dw/ha). An analysis has been undertaken of the surrounding residential densities in terms of dw/ha. **Figure 86** illustrates that surrounding development densities in the immediate vicinity of the site range between 6.4 – 11.6 dw/ha.

The concept plan seeks a site density of 16.6 dw/ha. While the density is higher than surrounding developments, the site offers a suitable location to deliver higher density given the nature of the existing built form and employment features of the site. The proposed site density is also comparable to other campus-style developments within the LGA. The site allows for a significant amount of new dwellings to assist achieving the subregional strategy dwelling targets. The proposed residential population of 1,494 people is based on residential occupancy rates from the Ku-Ring-Gai Section 94 plan.

The density interface has been addressed through the placement of lower density buildings along the edges of the site, with higher densities placed towards the centre of the site. Therefore, higher density developments will be buffered by significant vegetation in the conservation area.

Water and energy efficiency

Energy efficient design and building response has been developed through allowing passive design and sun controlling elements. Solar access, natural ventilation and thermal massing requirements are achieved through the proposed building envelopes, achieving high personal comfort and low energy consumption. All apartments will be fitted with low energy appliances and fittings including dual flush toilets, and water reduction showerhead and taps. Several proposed buildings have been split so to allow light into the central corridors. Rainwater collection will be used for toilet flushing and in laundries plus provide water for irrigation, this will significantly reduce water consumption of potable water.

Landscape

The proposed development addresses the need for vegetation connectivity in the regional context. The landscape on the site has been sensitively broken into landscape units to provide residents and visitors with a variety of useable spaces, as well as providing a landscape setting to the buildings. Landscaped elements such as formally landscaped frontages including hedgerow and specimen tree planting, provision of a series of interaction spaces.

Between the buildings rain gardens and deep soil zones further assist in improving the amenity, while strong street tree plantings add to the landscape character. Particular attention has been given to providing more access and interaction with the native vegetation and watercourses. Waterways located on the site are improved through adequate core riparian zones, vegetated buffers and managed edges. Stormwater flow and quality will be managed through retention ponds located between development and watercourses.

The overall site cover including the conservation area is 10%, excluding the conservation area the site cover is 21%.

Amenity

The site itself offers a high level of amenity through existing vegetation and landscape. Amenity is provided in the proposal through physical, spatial and environmental qualities of the development provided in a series of spaces in each precinct. Buildings receive excellent solar access, cross ventilation, contain quality indoor and outdoor spaces, visual and acoustic privacy, efficient layouts, and outlook. Adequate parking is provided in each part of the proposed development for resident and visitor use. At grade parking is provided in suitable locations to ensure activation of streets and adjoining open space. The onsite recreation, retail and services provide a heightened level of amenity.

Safety and security

Safety and security has been considered so that it can be achieved to an adequate level both internally to development as well as externally particularly on the entry approach and from the street. This includes casual surveillance from development and view lines within the public realm. Detailed safety and security should be further addressed at project application stage.

Social dimensions

The proposed development will provide a high quality mix of student accommodation, residential, seniors living, employment and retail opportunity development to allow demographic diversity interaction in the setting of the proposed development and Ku-Ring-Gai LGA. The proposed development will have a positive impact on the community by providing employment and improving the local amenity through improved access to waterways, open space and providing envelopes for well designed buildings that compliment the surrounding landscape. The proposal will allow for community interaction in a number of spaces.

Aesthetics

The proposed development expresses a contemporary aesthetic to articulate the aspirations of the development within the environmental setting. The building envelopes and spaces in the proposed development are designed to address the nature of the precinct to which they are located. The Central Precinct maintains a campus form with the other precincts adopting a building in the landscape approach. As mentioned above, the building envelopes have been carefully separated and articulated to reduce the visual bulk of the building and allow the creation of interest. Deep soil areas are heavily integrated into the scheme providing environmental efficiency and visual character.

Visual Impacts

For the purposes of assessing the impact of the proposed development on the surrounding area three locations were selected.

From many locations surrounding the site the development area is not visible and would not have a visual impact. This is primarily due to topographical constraints or by areas of dense vegetation that block views.

This assessment is intended to provide a brief evaluation of visual impact issues from 3 of the most important view points.



Figure 87 – Location of visual Impact view points



Figure 88 – View 1: Looking north along Fox Valley Road from main entrance to hospital



Figure 89 – View 2: Looking south along Fox Valley Road from entrance to 146 Fox Valley Road



Figure 90 – View 3: View south from Mt Pleasant Avenue

View 1 -Looking north along Fox Valley Road from main entrance to hospital

Description

Due to its location on Fox Valley Road this view point would be open to a high number of passers by. Whilst most of the viewers are likely to be travelling in motor cars the speeds are likely to be relatively low.

Currently development visible from this location are the existing church buildings.

Fox Valley Road, as viewed from this location has a leafy tree lined character with buildings set back behind landscaped frontages.

Key Considerations and Mitigation

It will be important that the proposed development respect the scale of the street and its leafy, tree lined character. New buildings should be set back from the street so to maintain its character and ensure the retention of existing mature trees.

Additional street tree planting and landscaping may be required to help mitigate the impact of new development and further enhance the character of the street.

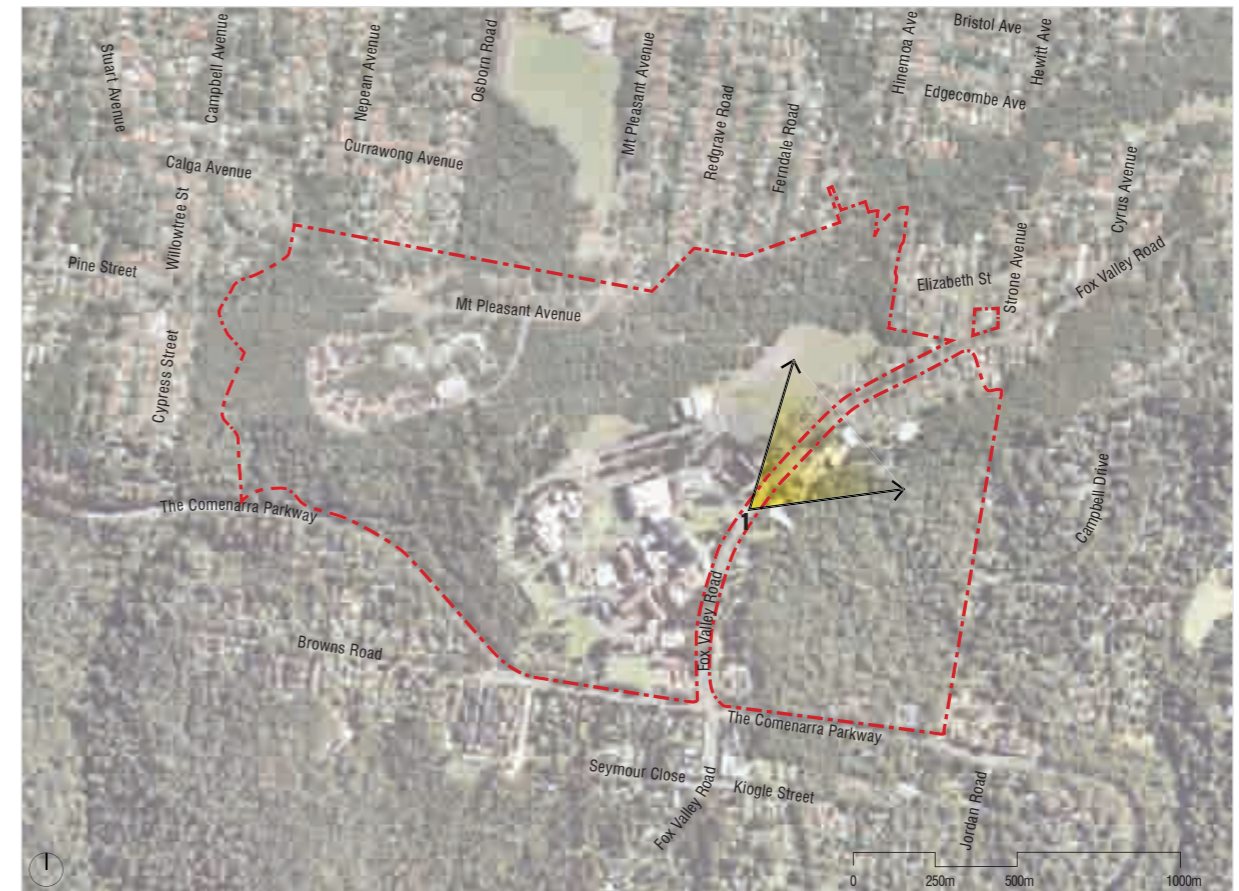


Figure 91 – Location of View 1



Figure 92 – View 1: Looking north along Fox Valley Road from main entrance to hospital

View 2 - Looking south along Fox Valley Road from entrance to 146 Fox Valley Road

Description

Due to its location on Fox Valley Road this view point would be open to a high number of passers by. Whilst most of the viewers are likely to be travelling in motor cars the speeds are likely to be relatively low.

Views of existing development on site include the main hospital building and administration building on Fox Valley Road.

Fox Valley Road, as viewed from this location has a leafy tree lined character with buildings set back behind landscaped frontages with views of the main hospital over the canopies of foreground trees.

Key Considerations and Mitigation

Proposed built form should seek to create an appropriate sense of scale and should where possible retain higher quality mature trees. Additional street tree planting may also help to enhance the view from this location.



Figure 93 – Location of View 2



Figure 94 – View 2: Looking south along Fox Valley Road from entrance to 146 Fox Valley Road

View 3 - Looking south from Mt Pleasant Avenue

Description

This location represents the extent to which the residential areas to the immediate north may be able to view the site.

Views of existing development on site are restricted to the upper storeys of the existing Hospital building. The majority of the site is blocked from view by dense vegetation in the foreground.

Key Considerations and Mitigation

Whilst the sensitivity of this view point is considered to be high it is expected to have a relatively low number of viewers.

Development proposals will need to ensure that built form minimises impact on this location. Built form should not exceed the height and mass of the existing hospital building.

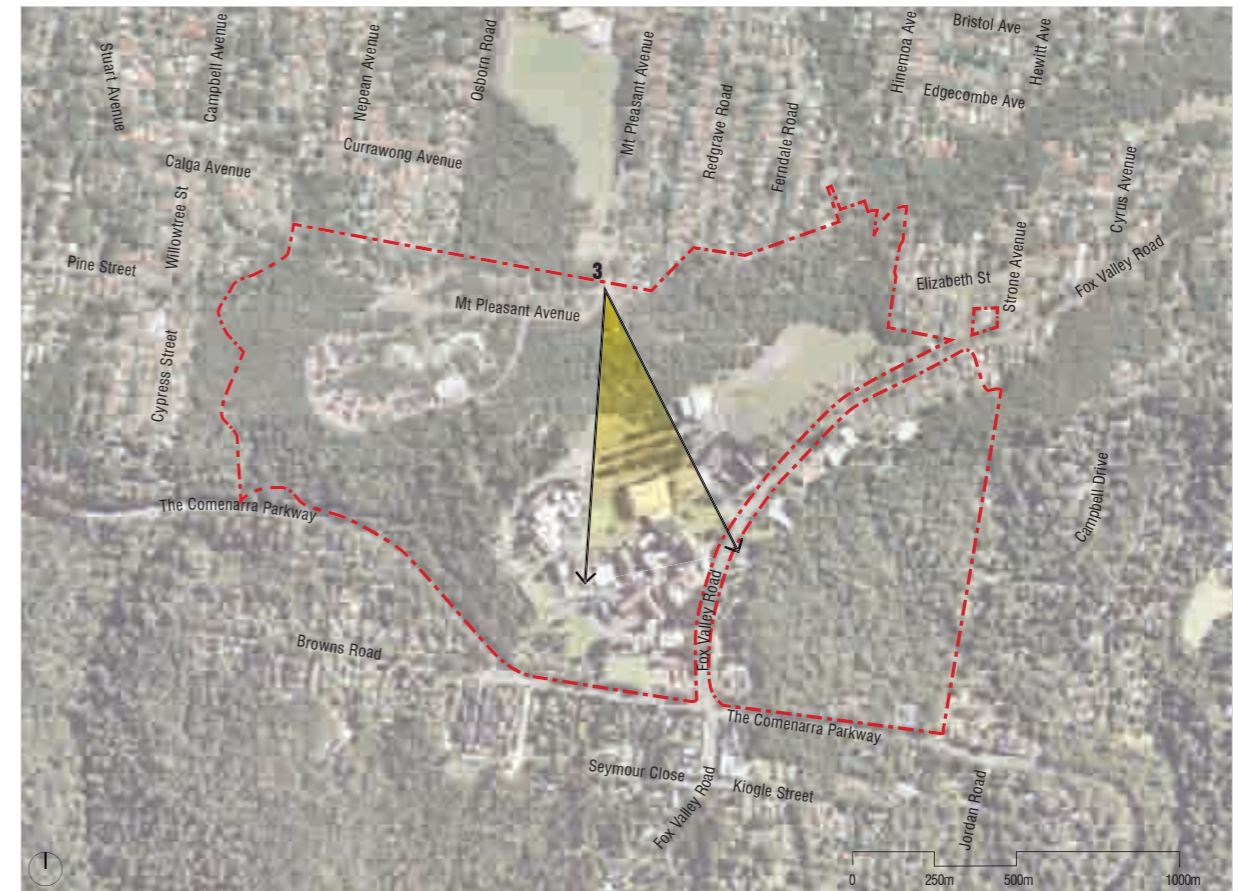


Figure 95 – Location of View 3



Figure 96 – View 3: View south from Mt Pleasant Avenue



Figure 97 – 9am Shadows



Figure 98 – Midday Shadows



Figure 99 – 3pm Shadows

9.4 Heritage

Australian Museum Business Services (AMBS) have prepared a Heritage Impact Assessment (refer **Appendix H**) in relation to the Concept Plan. The following analysis is drawn from this document.

In accordance with the DGRs the local Aboriginal community were consulted at all stages of the project. No new Aboriginal sites were located during the survey. However, Registered Site 45-6-2040 is located adjacent to Coups Creek. If development is to encroach on these areas, additional consultation with the local Aboriginal community groups and surveys will be required before any works are proposed.

Aboriginal Heritage

In accordance with the DGRs the local Aboriginal community were consulted at all stages of the project. The location of one registered site was verified (Registered Site 45-6-2040 adjacent to Coups Creek), and although no other sites were identified, areas of potential sensitivity have been identified.

Historic Heritage

The Adventist Administration Building is the only identified heritage item (local) within the Wahroonga Estate Redevelopment. However, the Director General Requirements (DGRs) and this study have identified additional potential heritage items.

Although this report has briefly addressed the impacts arising from the proposed development on those items identified by the DGRs, more detailed assessments or recording of the impacts arising from the Wahroonga Estate Redevelopment on these items will be prepared.

A Statement of Heritage Impact should be prepared to guide the process of removal of any timber framed cottages on Fox Valley Road and the use of elements from cottages to be demolished to contribute to refurbishment of cottages.

The Wahroonga Estate Redevelopment Master Plan has identified that a number of the buildings, which have been identified as having potential heritage significance, will be removed or relocated. In accordance with heritage best practice, an archival photographic recording will be prepared for these particular elements to Heritage branch standards to ensure that the contribution of these buildings to the historical development of the Sydney Adventists in Wahroonga is not lost.

The archival photographic recordings and any artefacts exposed during the demolition of buildings have the ability to make a significant contribution to the interpretation of the Sydney Adventist's in Wahroonga. The relocated 'Bethel' Museum would be an appropriate repository for this material and documentation. An Interpretation Strategy should be prepared to guide the appropriate themes, images and texts.

9.5 Social and economic impact

9.5.1 In general

Hill PDA's analysis of the Social and Economic Impacts of the proposed Wahroonga Estate Concept Plan (refer **Appendix I**) has identified a number of potential direct and indirect, economic and social impacts. The impacts have been identified following a detailed investigation of the proposed development, surveys of the site and surrounding centres, demographic research and the analysis of relevant government objectives and priorities for the North Subregion.

The proposed Wahroonga Estate development is supported and considered in accordance with State Government Objectives, the Draft North Subregional Strategy and the objectives of Ku-ring-gai and Hornsby Councils, given that the proposed development will:

- Provide an appropriate scale and range of social infrastructure and services to support the anticipated resident, employee and visitor population;
- Have an acceptable economic impact to existing centres surrounding the site;
- Improve the social vitality and character of the site and surrounding area;
- Enhance and extend the existing facilities, health and community services to the benefit of the north subregion and wider NSW;
- Provide local retail facilities and services to the benefit of local residents, workers and visitors;
- Generate new employment opportunities suited to a range of ages and skills;
- Provide a range of housing types and affordability;
- Create a sustainable community that reduces dependency on private car travel;
- Provide improved educational opportunities from a primary through to a tertiary level for local, Sydney and NSW residents to the benefit of their social and economic well being; and
- Have positive economic flow-on effects to the wider economy.

9.5.2 Retail impact

The Social and Economic Impact Assessment conducted for the project by Hill PDA (refer **Appendix I**) concluded that the subject site's trade areas have sufficient demand for an additional 2,000sqm of retail floorspace including 1,000sqm of supermarket and grocery space and 1,000sqm of specialty retail floorspace.

The Impact Assessment found that the provision of 2,000sqm of retail floorspace on the site would provide convenient retail options for households and employees in the site's defined trade area. It would still however allow for the vast majority of retail expenditure generated within the area to continue to be taken by centres in the wider locality.

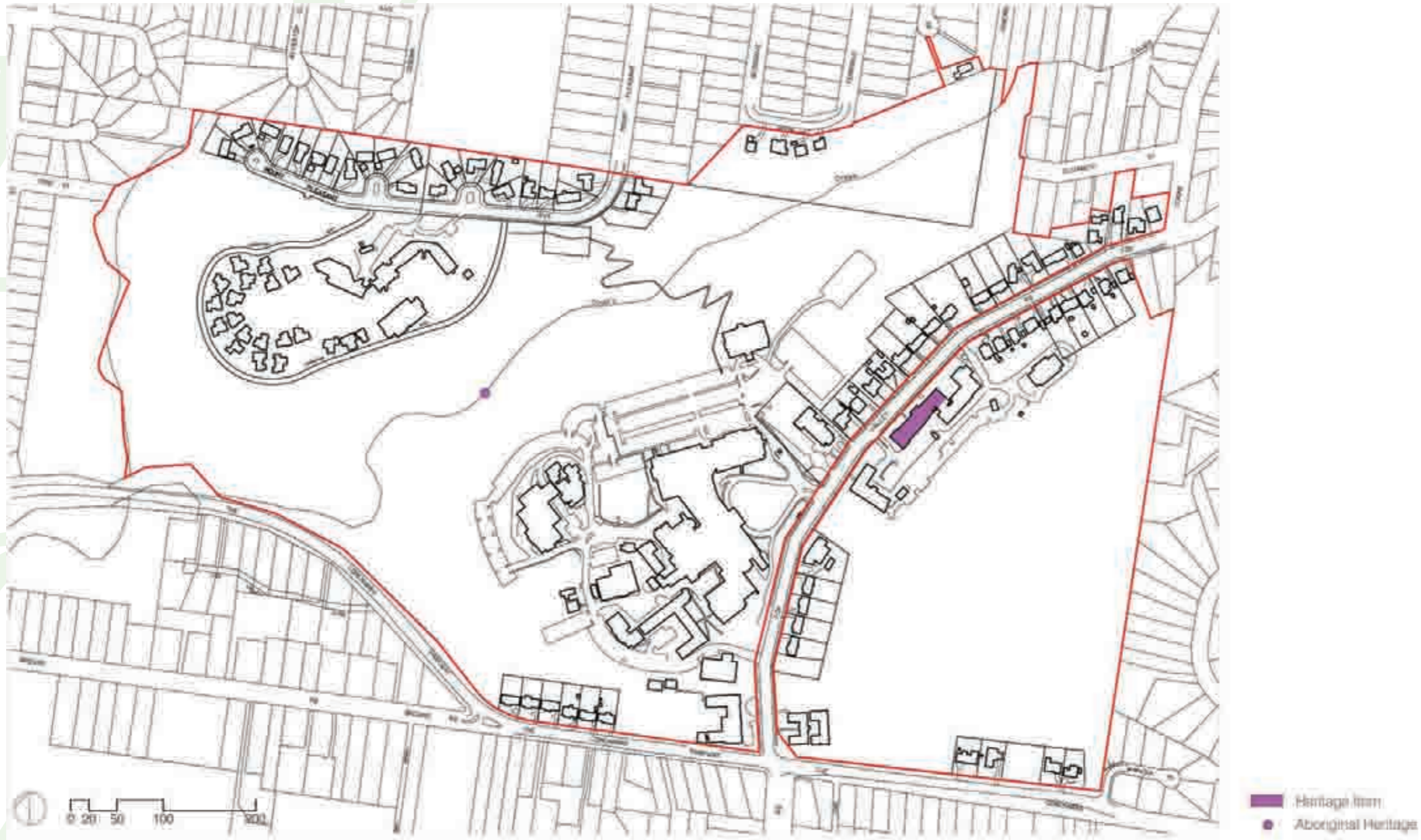


Figure 100 – Heritage

The Impact Assessment concluded that no one centre will be detrimentally impacted by the additional retail floor space proposed as part of this project. The proposal is responding to a current undersupply of retail floor space in the area and demand for retail services generated by the cluster of industries focused around the hospital. Accordingly it may be concluded that there are no reasonable grounds for refusal of the retail component of the proposal in relation to economic impact.

It is therefore considered that the proposed development should be supported on social and economic grounds.

9.6 Traffic, Transport and Car Parking

9.6.1 Traffic impact

Halcrow MWT have prepared a Traffic and Transport Report, which is included at **Appendix J**. This report analysed the potential traffic impacts for the proposed development of the Wahroonga Estate. This report has also provided additional information and analysis, including stakeholder consultation, as requested in the Director General's requirements. Detailed responses to issues raised by each key stakeholder are provided in **Appendix E** of the Transport Report (**Appendix J**). The key findings of the report are:

The findings of the study are:

- *Recommended intersection upgrades would be sufficient to accommodate the demand generated by the proposed development of the estate including the expansion of the hospital.*
- *The hospital is a good example of a live-work community with a significantly high proportion of employees who live in the area either walking or cycling to work.*
- *To accommodate traffic flows on Fox Valley Road along the frontage of the site clearway or permanent kerbside parking restrictions are recommended.*
- *A dual lane roundabout is recommended at the intersection of the northern access road and Fox Valley Road.*
- *Dual lane (southbound) roundabouts are recommended in place of the single lane roundabouts at the intersections of Fox Valley Road-Ada Avenue and Fox Valley Road-Lucinda Avenue.*
- *Intersection capacity improvements are recommended at the following locations as detailed in this report:*
 - *Pennant Hills Road and Comenarra Parkway*
 - *Comenarra Parkway and Fox Valley Road*
 - *Comenarra Parkway and Kissing Point Road*
 - *Fox Valley Road and Pacific Highway*

9.6.2 Car parking

A comprehensive review of car parking has been undertaken. This review has considered Council's car parking rates and the nature of the development. The Transport Report includes a justification of the most appropriate car parking rates for the Estate, refer below:

- *The proposed parking provision rates for residential, commercial and retail uses are below those set in the Ku-ring-gai Council DCP for parking. However they are considered appropriate having regard to the high proportion of employees that will live on the site, a proposed car sharing scheme and the predominance of retail visitors from residents and employees of the site.*
- *The expansion of the Hospital facilities and accommodation would increase employee numbers, however many of these employees travel out of peak periods as they work in shifts. This reduces impacts during commuter peak periods.*
- *The car sharing scheme for all residential accommodation would build on the hospitals existing successful car pooling scheme and result in lower traffic generation than for a typical residential development.*
- *The redevelopment of the precinct will provide a range of facilities and services in close proximity to existing and new residents, reducing the need to travel by private vehicle for certain trips such as, education, retail, and employment.*

Overall traffic and parking aspects of the proposal are considered to be satisfactory as:

- *an appropriate amount of parking will be provided;*
- *provision of an on site employee accommodation, fostering of car pooling and implementation of a car sharing scheme will minimize traffic generation; and*
- *proposed intersection improvements will offset the effects of the additional traffic that would be added to the traffic using them.*

A draft TMAP has been prepared (refer **Appendix J**), that includes measure to encourage modal split throughout the Estate.

A number of commitments arise out of the assessment of transport matters, including the intention to enter into a Voluntary Planning Agreement for the provision of necessary amplifications and improvements, refer to **Section 10**.

9.7 Biodiversity

Cumberland Ecology Pty Ltd prepared a detailed Flora and Fauna Assessment of the site (refer **Appendix M**). The assessment incorporated feedback from the NSW Department of Environment and Climate Change (DECC) and built upon existing ecological information, including a report by Conacher Travers (2004). It identified that of the 37.08 ha of the native vegetation on the subject site approximately 5.68 ha is proposed to be cleared or managed for asset protection zones (APZs). The report identified that the site contains a number of complex ecological issues including:

- *State and Commonwealth listed critically endangered ecological community Blue Gum High Forest [Blue Gum High Forest],*
- *State listed endangered ecological community Sydney Turpentine-Ironbark Forest,*
- *suspected nesting location for Powerful Owls,*
- *foraging / roosting habitat for Eastern False Pipistrelle, foraging / nesting habitat for Gang-gang Cockatoos,*
- *suitable foraging habitat for Greyheaded Flying-fox,*
- *suitable foraging habitat for a number of threatened species not recorded on the subject site such as microchiropteran bats and other birds, and*
- *No threatened flora has been detected on the subject site.*

Cumberland ecology assessed the following impacts of the proposed development:

- *It will impact upon the CEECs Blue Gum High Forest and Sydney Turpentine-Ironbark Forest.*
- *It will clear some forest and woodland habitat for threatened fauna species including the Grey-headed Flying Fox and the Powerful Owl.*
- *unlikely to cause a significant impact on TSC Act listed vulnerable species Eastern False Pipistrelle and Gang-gang Cockatoo because other equivalent or higher quality habitat exists for this species in nearby areas.*
- *Powerful Owls may relocate elsewhere without appropriate mitigation measures.*

Key recommendations of the report are:

- *Vegetation communities on the subject site can be enhanced through the implementation of a Biodiversity Management Plan (BMP) incorporating a Vegetation Management Plan (VMP) and a Powerful Owl Management Plan (POMP).*
- *BGHF and STIF should be managed under the VMP and appropriate offset and mitigation measures determined in consultation with relevant authorities.*
- *Impact upon Eastern False Pipistrelle and Gang-gang Cockatoo species can be mitigated through planting of suitable feed trees in site rehabilitation and landscaping.*

- *Mitigation against impacts on the Powerful Owls' (Vulnerable TSC Act) nesting site should include:*
 - *retention of a 100m buffer around the nest tree;*
 - *scheduling development and asset-protection activities to avoid the owls' breeding season (pre-laying to fledging, i.e. May to September);*
 - *provision of nest boxes at selected locations throughout Coups Creek and Lane Cove Valley;*
 - *provision of suitable foraging vegetation for Powerful Owl prey species such as the Ring-tail Possum during post site rehabilitation and landscaping;*
 - *Monitoring of the nest tree and nest boxes to determine the response of the owls to the impacts of the development; and*
 - *Hollow-bearing trees should be retained wherever possible or nesting boxes provided to minimise impacts on fauna habitat from removal of hollow-bearing trees.*

The proposed redevelopment was referred to the Commonwealth Department of Environment Heritage and Arts (DEWHA) and declared to be a controlled action under the EPBC Act. DEWHA indicated that, in its opinion, a significant impact on BGHF is likely to occur as a result of the proposed development. As described in the Flora and Fauna Assessment (refer **Appendix M**) the design evolution process has sought to minimise impacts on the BGHF while providing the necessary housing and facilities for hospital staff and local residents.

In the context of reviewing the Concept Plan an addendum to the existing Flora and Fauna Report has been prepared by Cumberland Ecology and is attached to this Preferred Project Report. Mitigation measures are outlined in Chapter 5 of the Flora and Fauna Assessment and the Statement of Commitments in **Section 10** includes various measures to ensure compliance with the relevant findings discussed above.

9.8 Bushfire

A Bushfire Protection Assessment has been undertaken by Australian Bushfire Protection Planners (ABPP, refer **Appendix L**). Given the widely varying characteristics of the land, the Wahoonga Estate was divided into three precincts for the purpose of the assessment and studies conducted to determine the level of fire hazard and devise mitigation measures accordingly. Key findings include:

- *The slope of the land provides an indication of the likely movement and direction of bushfires through the Estate. Slopes within the Estate range from zero degrees in developed areas to over 18 degrees in the riparian corridors surrounding Coups Creek. Such is the trend in surrounding areas also. Cliffs and escarpments of over 90 degrees have also been identified in the north-west precinct.*
- *With regards to vegetation, landscaped gardens are present in existing developed areas and contribute to Asset Protection Zones. The dominant natural vegetation is Wet Sclerophyll Open Forest in riparian corridors, and Dry Sclerophyll Open Forest in remaining areas. The most notable vegetated area beyond the Estate is the Low Open Forest adjoining the north-west precinct that constitutes a fire hazard.*

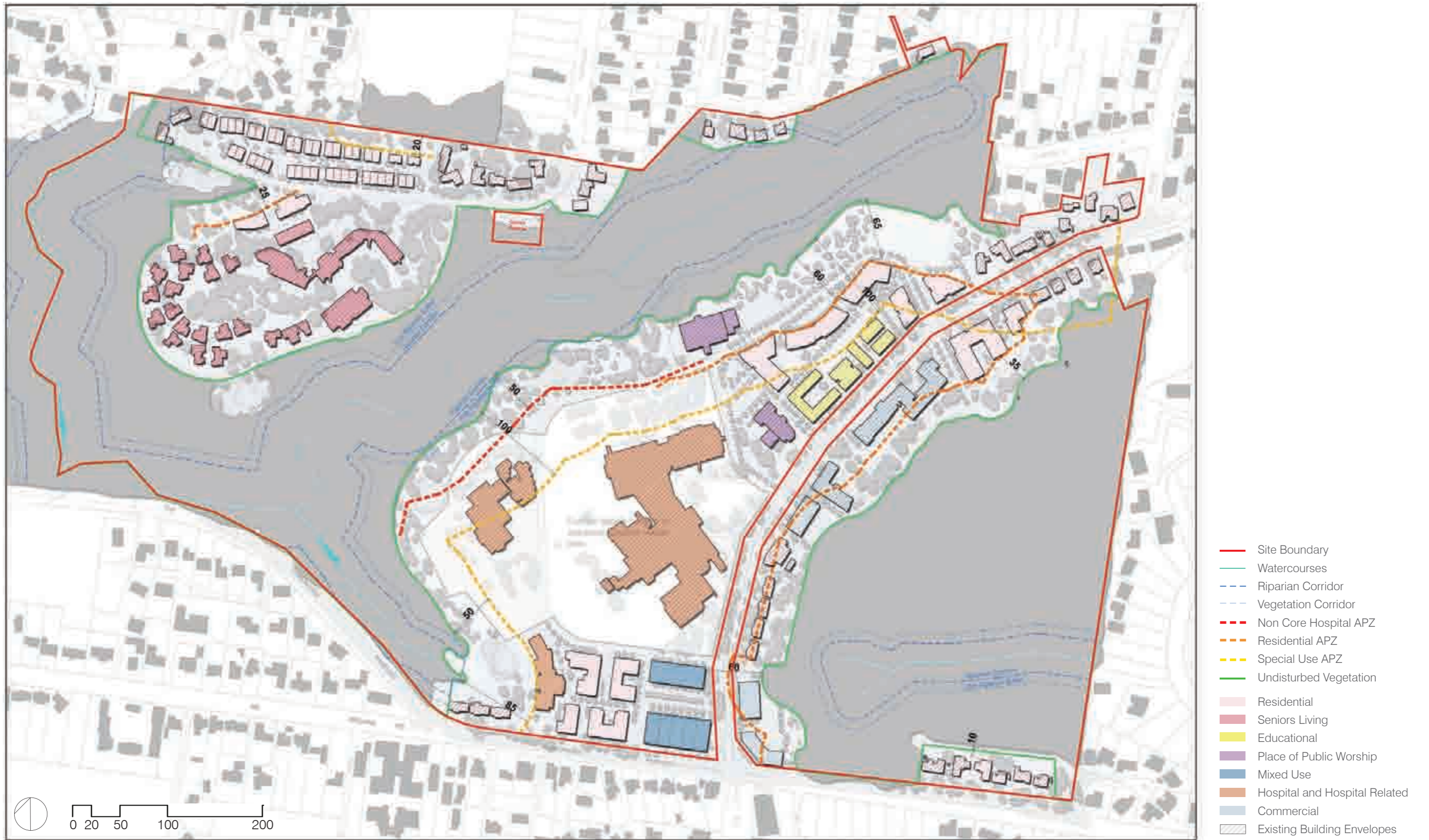


Figure 101 – APZ Landuse

ABPP have reviewed the concept plan in light of these findings and have deemed the proposed development compliant with the DGRs as follows:

- *The Asset Protection Zones as depicted in **Figure 101** are accommodated in all new and existing residential developments through building setbacks, roads and controlled natural vegetation. Gardens and native vegetation will be actively maintained to reduce fire hazard through landscape design and the manual removal of flammable material. In instances where compliance with the RFS Asset Protection Zone provisions is not possible, development has been limited to 'infill' and evacuation plans will be prepared.*
- *The existing road network has been deemed sufficient for fire-fighting and evacuation purposes. New roads and extensions must comply with the relevant provisions of the RFS and thereby further improve evacuation and access routes.*
- *The width of the Asset Protection Zones to proposed Special Fire Protection purpose developments complies with Table A2.6 [Special Fire Protection Purpose Development of Planning for Bushfire Protection 2006 and improved bushfire mitigation and protection is proposed for existing Special Fire Protection development.*
- *Under the Concept Plan, all future development will be connected to water mains with sufficient capacity for fire fighting purposes. Furthermore, a 'fire service main' is currently provided within the central precinct and future development at the hospital will include extensions to this service. Fire hydrants will be provided in accordance with RFS guidelines.*
- *The construction of dwellings will consider the BCA and relevant Australian Standards, and ABPP have recommended appropriate levels of construction to respond to the bushfire threat..*
- *Each 'land use' within Estate will prepare a site specific Evacuation Plan and it has been recommended that an Emergency Liaison Committee also be established to coordinate the preparation and review of these plans.*

In the context of reviewing the Concept Plan an addendum to the existing Bushfire Report has been prepared by Australian Bushfire Protection Planners and is attached to this Preferred Project Report. The Statement of Commitments in **Section 10** includes various measures to ensure compliance with the relevant bushfire provisions discussed above.

9.9 Ecologically Sustainable Development

The Wairoonga Estate Redevelopment is a valuable opportunity to deliver a compact, sustainable urban community centred on the Sydney Adventist Hospital and existing local centre of Fox Valley. Improved access, mobility and public transport; the provision of affordable, onsite employee housing; a holistic WSUD strategy; upgraded and improved utility service provision; and, appropriate protection, rehabilitation and management of environmental values combine to deliver an outcome consistent with the principles of ESD and with the DGRs issued for the environmental assessment.

While design and construction details are not incorporated into the concept plan, the site configuration and development controls incorporate appropriate flexibility to allow future development to be designed and constructed in accordance with ESD principles and regulatory requirements. Individual elements contributing to the DGR are contained in the following paragraphs (refer **Appendix N**).

BASIX

Applications for residential development within the Wairoonga Estate have a legislative requirement to achieve compliance with BASIX. Details of the built form are not included in the concept plan approval but future residential development will respond to relevant targets at the time of development application and incorporate measures to comply with and ideally exceed BASIX requirements.

Water Sensitive Urban Design

Water Sensitive Urban Design (WSUD) principles have been considered in the Wairoonga Estate Flooding and Stormwater Master Plan prepared by Hyder Consulting including rainwater tanks, detention basins, rain gardens, wetlands and ponds. It demonstrates that future development is capable of implementing measures to meet current regulatory requirements, promote long term sustainability and reduce operating costs within the site.

Energy Efficiency

The concept plan has considered current guidelines and best practice for incorporating the components of ESD into non-residential development. Appropriate consideration has been given in the concept plan to the site configuration to enable future development to implement design measures such as:

- *Appropriate building orientation to promote solar passive design opportunities;*
- *Narrow building floor plates (12-16m) to optimise daylight penetration.*
- *Maximise external views using narrow floor plates to provide outdoor connection and improve IEQ.*
- *Flexible floor plate design to enable cross or mixed mode ventilation including façade structural frames to allow operable windows catering for mixed mode operation, cross ventilation and night flush, reducing the need for mechanical cooling and heating and improving fresh and clean air supply for indoor spaces.*
- *Using light shelves etc to increase natural lighting, decrease lighting loads and improve internal comfort.*
- *Utilise reflective blinds to prevent low angle sun from entering buildings during early mornings and late afternoons thereby avoiding glare, minimising solar gain and improving thermal comfort and energy performance.*

Recycling and Waste Management

The Wairoonga Estate redevelopment incorporates adaptive reuse of buildings where practical and commercially viable. For new construction, demolition or excavation works a Waste Management Plan will be implemented as part of project applications to maximise recycling or reuse of waste materials.

Car Pooling & Car Sharing

The Wairoonga Estate development will also introduce a formal car sharing scheme within the estate. This scheme will reduce trip generation and distances travelled by private vehicles and provide access to vehicles without the high fixed costs of private vehicle ownership.

Light

Lighting within the Wahroonga Estate will utilise appropriate technology to minimise energy consumption and will comply with relevant Australian standards such as AS4282: The Control of the Obtrusive Effects of Outdoor Lighting.

Alternative Energy Options

Consultation with service providers, as detailed in the Wahroonga Estate Civil Engineering Utilities Report prepared by Hyder Consulting as part of the EA process, confirms the existence of high pressure natural gas in the eastern precincts of the site that may be utilised for steam boilers or cogeneration / tri-generation. It may also be viable given emerging technologies and the timeframe of the project, to incorporate renewable energy options within the estate.

Site coverage

The concept design for the Wahroonga Estate redevelopment retains significant vegetation and open space, with approximately 40% of the site to be retained for these purposes. Riparian corridors and EECs are largely protected within the estate and active and passive open space is provided throughout the site. Protection of the environmental qualities of the site is consistent with the ESD principle of inter-generational equity and conservation of biological diversity and ecological equity.

9.10 Geotechnical and Contamination

A Geotechnical Assessment has been undertaken by Douglas Partners (Refer **Appendix O**) for the purposes of determining the suitability of the site for development and devising mitigation measures where necessary. The Estate was divided into three study areas based on the dominant geological character – the Glenorie Landscape, the Hawkesbury Landscape and the West Pennant Hills Landscape – and assessed with regard to soil character, slope, stability and potential contamination.

The prevailing gradient across the Estate is between 5 and 35 degrees and all three study areas contain soils prone to instability and erosion. However, the majority of existing and proposed development is concentrated in the flatter areas of the Estate where slope stability is not of great concern. Any potential hazards in these areas can be adequately addressed through batters and retaining walls. Douglas Partners have advised that the degree and type of mitigation measures should be established at a later stage in light of site specific assessments for each development site.

Likewise, specific site preparation and foundation works should be determined for each individual development. Douglas Partners have provided the general advice that some cut and fill techniques will be required to level the Estate for the construction of buildings and roads, and that subject to further investigation, excavated material may be reused as filling. All such works are to be undertaken in consideration of the relevant Australian Standards.

A Phase 1 Contamination Assessment has been completed for the site by Douglas Partners (refer **Appendix P**). Given the large proportion of residential development and preserved bushland within the Estate, land contamination is limited, despite the wide variety of land uses that have existed in the area in the past. The primary areas of concern are pest control, building and waste management practices and the use of fill from other locations that may potentially be contaminated. Although studies have confirmed that the hazard is low, Douglas Partners recommend that site specific tests and necessary remediation works be undertaken at a later stage. In all, the Estate is deemed suitable for the proposed development and complies with SEPP 55.

9.11 Utilities and Social Infrastructure

9.11.1 Utilities

Hyder Consulting Pty Ltd has been engaged by Johnson Property Group to undertake a Civil Engineering Utilities Report to service investigation report for the Wahroonga Estate (refer to **Appendix Q**). This report identifies the following asset owners located within the vicinity of the site and/or surrounding road reserves:

- Sewer - Sydney Water
- Water - Sydney Water
- Gas - Agility
- Electrical - Energy Australia
- Telecommunications – Telstra

And made the following assessment of Utility capability:

Sewer

The site is located in the East West Lane Cove waste water system and is currently serviced from a number of sewer mains as indicated below:

The Hospital is currently serviced by the 400mm diameter carrier main which drains south along Coups Creek.

- *The precincts west of Coups Creek are currently serviced by a number of 150mm diameter lines that connect into a 225mm diameter main which drains south along Lane Cover River and connects into the 400mm diameter Carrier at the junction of Coups Creek and Lane Cover River.*
- *The precincts east of Fox Valley Road are currently serviced by a number of 150mm diameter lines which drain east toward Browns Field then south towards Lane Cove River.*

Sydney Water have formalised a response to the feasibility application indicating that the wastewater system does not have sufficient capacity to cater for the proposed development. Hence, there is a requirement to upgrade/duplicate existing sewers to ensure that there is sufficient capacity in the local sewers.

Water

The site is located within the Wahroonga water supply system. Water Infrastructure in the area consists of:

- 1200mm diameter Steel Cement Lined (SCL) main traversing the site in an east west direction. Refer attached SKC003 in **Appendix A**.
- 200 diameter Cast Iron Cement Lined (CICL) main running along the eastern side of Fox Valley Road tapering to a 150mm diameter CICL main. Refer attached SKC003 in **Appendix A**;
- 150mm diameter CICL main running along the centre of Fox Valley Road. Refer attached SKC003 in **Appendix A**; and
- 150mm diameter CICL main running along the northern side of Mount Pleasant Road. Refer attached SKC003 in **Appendix A**;

Sydney Water have formalised a response to the feasibility application indicating that the water system does not have sufficient capacity to cater for the proposed development. Hence, there is a requirement to upgrade existing mains to ensure that there is sufficient capacity.

Gas

Gas infrastructure in the area consists of:

- 100mm diameter high pressure secondary main (1050 kPa) at the corner of Fox Valley Road and Comenarra Parkway. Refer attached sketch SKC004 in **Appendix A**.
- 75mm diameter medium pressure nylon main (210 kPa) running along the eastern side of Fox Valley Road. Refer attached sketch SKC004 in **Appendix A**.
- 32mm diameter medium pressure nylon main (210 kPa) running along the southern side of Mt Pleasant Avenue. Refer attached sketch SKC004 in **Appendix A**.

Alinta Assets Management has indicated via email on 23 May 2008 that, the eastern precincts (including the hospital) have the ability to be serviced either by the medium pressure main in Fox Valley Road or the high pressure main in Comenarra Parkway. The high pressure network may be utilised for steam boilers or cogeneration. The north-western precincts have the ability to be serviced by the medium pressure main in Mt Pleasant. At this stage there are no major supply constraints in the area, however, Alinta do not reserve capacity.

Electricity

Energy Australia has confirmed via email on 10 June 2008 that, the area is principally serviced by the Turramurra zone substation (Turramurra Ave) which is near full capacity. However, Energy Australia currently have projects in development to increase capacity at Turramurra zone substation, Pymble zone substation and St Ives zone substation with tentative completion schedules ranging from 2010 to 2012.

Energy Australia further advised that to service the completed development there would be a requirement for at least one new 11kV feeder which may need to connect to one of the above zone substations. The timing of the construction of this feeder will be dependent on the staging and rate of development. It is our experience that for essential services such as Hospitals cross feeder ties to substations are often required for network security and switching flexibility.

The developer will be required to fund connection from the site to the existing zone substation. The connection to the site will be via underground feeder. Refer attached SKC005 in **Appendix A**. The developer will be required to supply the 11kV feeder, distribution kiosk/substation, low voltage distribution cables and street lighting. The cost and method of supply for the development will depend on the final electrical load requirement. An application for Load Connection should be submitted to Energy Australia prior to making any financial commitments.

Telecommunications

Telecommunications Infrastructure in the area consists of:

- Optical fibre currently running along Fox Valley Road and Mt Pleasant Avenue servicing the hospital and surrounding residents. Refer attached SKC006 in **Appendix A**;
- Local cable currently running along Fox Valley Road and Mt Pleasant Avenue servicing the hospital and surrounding residents. Refer attached SKC006 in **Appendix A**;

Telstra has indicated via email on 19 May 2008 that, the existing network is currently not sufficient to meet the likely demand of the proposed development. However, he further advised that service to the site will be supplied when required.

To accommodate the proposed redevelopment, the telecommunications network would require upgrade. To achieve this, Telstra may require:

- Upgrading the conduit network along Fox Valley Road and Comenarra Parkway;
- Hauling new copper cable and optical fibre cable to the site from the north along Fox Valley Road.

The technology and services provided would be determined closer to the time of development commencement, depending on Telstra deployment policy and any negotiations based on a commercial agreement.

9.11.2 Social Infrastructure

The proposed development will provide an appropriate scale and range of social infrastructure and services to support the anticipated resident, employee and visitor population.

Hill PDA's analysis of the Social and Economic Impacts of the proposed Wahroonga Estate Concept Plan (refer **Appendix I**) identified that:

The proposed redevelopment will support Ku-ring-gai and Hornsby Council's objectives to meet the needs of the North Subregion's community through the provision of a range of services and facilities. Facilities and services provided by the proposed development include a 350 seat community hall, two churches, a child care centre, a medical and dental centre, aged care and sporting facilities.

These facilities as identified in the proposed Concept Plan as part outlined in **Section 8** of this report.

The proposed development aims to provide over 3,200sqm of community floor space centrally located on the site and available to all members of the public. The facilities will be maintained and operated by the ACA.

Detailed social planning undertaken by Ku-ring-gai Council has however identified a range of additional social facilities and infrastructure required to meet the needs of the LGA's future population. The Social and Economic Impact Assessment conducted by Hill PDA addresses these key issues in light of the additional facilities proposed by the redevelopment, these include:

Child Care

The redevelopment of the hospital and community facilities proposes an extension to the existing child care facilities on site. The proposed extension will be to a scale that is commensurate with demand generated by the extended hospital and associated services. It is also intended that the centre will provide a range of services including long day care, family day care, out of school hour's care (in association with the proposed primary and secondary school), vacation care and occasional care. In this way the proposed development will support working families and avoid any greater strain on existing facilities in the North Subregion. Furthermore should the child care centre have additional capacity, it may help to meet some of the latent demand for these services in the North Subregion

Community Centres and Halls

The proposed development supports this need the retention of the high quality community centre on the site. Given the good economic life of the building and its suitability for a range of community uses, it is proposed to be retained as part of the Subject Site's proposed redevelopment. This facility provides a 350 seat hall with ancillary amenities (kitchen, toilets etc) and may be used as a place of worship. The facility is currently available (and will remain available) to the wider community for casual hire.

In addition to the new community hall located on the site, the existing church will also be retained. Together these facilities could provide over 3,200sqm of community floorspace centrally located on the site and available to all members of the public.

Private Medical Facilities

As part of the proposed redevelopment, 16,000sqm of commercial floorspace (a net increase of 8,000sqm) has been proposed for a range of uses that will be complementary to the hospital. This floorspace is likely to be attractive to a mix of private medical facilities including medical centres, dentists, physiotherapists, dieticians, chiropractors and pathologists. Whilst this will have a significant positive economic effect through the creation of jobs and by supporting the medical cluster, it will also provide significant social benefit by extending the availability of services and the public's awareness of them.

Open Space

The amount of open space per person provided by the proposal is greater than for many parts of NSW. Although the average amount of open space per person for the proposal is less than the average for Ku-ring-gai LGA, the Subject Site is only small in comparison to the LGA. The amount of easily accessible open space is far greater than much of the open space in other parts of Ku-ring-gai LGA and is considered to be an excellent provision of open space.

9.11.3 Proposed extension of the school

Hill PDA has undertaken an assessment of the appropriate footprint for the proposed school with the support of key government departments and consultation bodies. Outlined below are the key matters reviewed for the assessment, which is addressed in detail in the Social and Economic Impact Assessment included in **Appendix I**.

As part of this assessment two different scenarios were modelled. The first was for a student population of 1152 based on preliminary enrolment forecasts provided by the school for future expansion but subsequently reduced due to a student population of approx 800, (420 primary students and 360 secondary students) based on a school site of approx 9000m² to be consistent with the design constraints of the Concept Plan. It has been assumed based on these figures that the Primary School will have 3 classes of 20 students for each year, Kindergarten to 2, and 2 classes of 30 students for each year, 3 to 6. The Primary School will have a total of 17 classes and is therefore classified as a Core 14 school under the Primary School Facilities Standard.

It has been assumed that the Secondary School will have 60 students for each year, 7 to 12. The Secondary School will have a total of 360 students. This student size is classified as Stream 3 under the Secondary School Facilities Standard.

Although the absolute minimum floor area for the school has been calculated as approximately 5,130sqm a number of additional facilities will be required in order to ensure a high standard of learning and a positive environment. This is particularly the case for the Secondary School. It is considered likely that many of the facilities listed as optional would be desirable to provide the students with the best opportunities. Hill PDA's calculations have therefore identified that a primary and secondary school in the order of 9,107sqm would be appropriate for approximately 800 students.

For the reasons given above and in light of the floor space requirements, the proposed 9,000sqm of built floor space for the school is considered appropriate. The proposed 9,000sqm is considered sufficient space to provide for not only the minimum area of school facilities but also facilities that will enhance the student's educational experience in accordance with both the Primary School Facility Standard and the Secondary School Facility Standard.

9.12 Drainage, Stormwater and Groundwater Management

A Stormwater Management Master Plan (SMMP) has been prepared in respect of the proposed development by Hyder Consulting (**Appendix R**). The report addresses the following matters:

Integrated water cycle management strategy

The proposed integrated water cycle management strategy demonstrates the means and adequacy of managing stormwater within the site in accordance with Ku-ring-gai Council's Water Management Development Control Plan (herein referred to as DCP 47).

Stormwater treatment and water conservation measures

The proposed stormwater treatment measures act as a WSUD framework incorporated into the stormwater infrastructure and landscape design of the proposed development and includes the following treatment measures: Rainwater Tanks; Gross Pollutant Traps; Rain gardens (Bio-retention systems); and Ponds in order to control flooding, stormwater pollution and conserve water on the site.

- *Key conclusions are as follows:*
 - *Rainwater tank volumes and reuse should be provided for the various development types proposed at the site (refer **Appendix R**).*
 - *On Site Detention (OSD) basins are required to control peak stormwater runoff from the site to acceptable levels. The location and size of these basins are presented in Drawing SKC007.*
 - *Rain gardens fitted into the base of the OSD basins were found to be the most effective means to meet the pollutant reduction targets for the proposed development.*
 - *A significant portion of harvested stormwater will be used for open space irrigation by fitting ponds to the base of the OSD basins close to the designated areas of public open space to be used for stormwater treatment and irrigation of the public open space (refer Drawing SKC008). This option also meets the pollutant reduction targets for the proposed development.*
 - *Sewer mining to supply recycled water for non-potable use within the site such as irrigation, toilet flushing and washdown can be investigated once Sydney Water provide their assessment in relation to the costs associated with upgrading the sewerage system within the site (or downstream of the site) to cater for the proposed development.*

Potential Flood Risk and On Site Detention Proposals

The principles of on-site detention for flood control according to Ku-ring-gai Council's DCP 47 requirements are adopted to control the rate of stormwater runoff and reduce peak discharges during storm events and thus minimise flood events and pressure on the downstream stormwater infrastructure.

To minimise the adverse impact of a development on downstream properties and drainage systems, On Site Detention (OSD) is enforced by Ku-ring-gai council. Also mandatory to the site is the use of rainwater tanks which in some cases could reduce the OSD storage requirements.

The site drains to two main catchments areas, Coups Creek and Fox Valley with the dividing crest along Fox Valley Road. The area of the site to the west of Fox Valley Road drains to Coups Creek, which runs south leaving the site through a culvert crossing Comenarra Parkway. The area of the site to the east of Fox Valley Road drains to the Fox Valley Catchment. Only a small area at the south of the site discharges to the Lane Cove River catchment.

*According to the Water Management Development Control Plan 47 (DCP 47) the minimum storage volume and permissible site discharge (PSD) are calculated in accordance to the catchment location. The permissible site discharge and the minimum OSD volume requirements for the three catchments located within the site are based on DCP 47 and are summarised in **Table 13**.*

Table 13 – Catchment permissible site discharge and storage volume

Catchment Area	Permitted Site Discharge (l/s/ha)	Equivalent Minimum OSD Storage Volume (m3/ha)
Coups Creek (CC)	132	325
Fox Valley (FV1)	129	332
Lane Cove River (LC)	166	241

9.13 Developer contributions

In accordance with Ku-ring-gai Council's Section 94 Contributions Plan 2004 - 2009 - Residential Development - Amendment No.2 and Section 94 Development Contributions Plan 2007-2011, a levy will be applied to all new developments which will, or are likely to, require the provision of additional or upgraded public facilities or works. These Section 94 Plans facilitate developer funding for a range of community and recreation facilities; provision of additional open space, local traffic improvements, pedestrian and cycleway facilities; and other works in the public domain such as street tree planting within the surrounding area. Noting that some of these facilities will be provided within the development, the proponent is intending to provide contributions under the framework of Council's existing Section 94 plans which contains provision for monetary levies, works in kind, or separate voluntary planning agreement.

The current rates per dwelling are outlined in the following tables:

Table 14 - Hornsby LGA:

Development type	Occupancy rate / work space ratio	Contribution rates per person/tourist bed/worker
Residential		
Residential flats and other attached dwellings		
Studios or 1 bedroom	1.5 persons / dwelling	\$8,853
2 bedroom	1.8 persons / dwelling	\$10,624
3 bedroom	2.3 persons / dwelling	\$13,575
>3 bedroom	3.1 persons / dwelling	\$18,296
Detached dwelling/Additional allotment	3.1 persons / dwelling	\$18,296
Seniors housing	1.5 persons / dwelling	\$8,853
Tourist and visitor accommodation	1 bed per person	\$5,902
Commercial / Retail development	1 worker / 30 sqm GFA	\$2,154.25
Industrial	1 worker / 50 sqm GFA	\$2,154.25
Extractive Industry	per tonne	\$0.75
Car Parking – Hornsby Town Centre	per space	\$22,000

Table 15 - Ku-ring-gai Council (Wahroonga):

	Per Person	Bedsits and one bedroom	Two bedroom dwelling	Three bedroom dwelling	Four bedroom dwelling	Five+ bedroom dwelling	Seniors Living Dwellings	New Lot Subdivision
Separate Houses	\$9,225.44	\$14,576.20	\$17,620.60	\$24,170.66	\$29,982.69	\$35,517.95	\$11,937.37	\$32,104.54
	Per Person	Bedsit dwellings	One bedroom dwelling	Two bedroom dwelling	Three bedroom dwelling	Four+ bedroom dwelling		
Medium Density Dwellings	\$9,225.44	\$9,225.44	\$10,793.77	\$15,314.24	\$19,096.67	\$30,351.71		
High Density Dwellings	\$9,225.44	\$9,594.46	\$11,255.04	\$15,867.76	\$19,004.41	\$26,569.28		

Table 16 below outlines the total contributions required based on rates outlined in Council's Section 94 contributions Plan based on specified dwelling types. The total contribution required to meet Hornsby and Ku-ring-gai Council's infrastructure needs for the proposed development using these formulae is \$6,482,441.

Table 16 - Contributions

	Mount Pleasant (Hornsby)	Mount Pleasant (Ku ring gai)	Central Church Precinct (Ku ring gai)	Central Hospital Precinct (Ku-Ring-Gai)	Fox Valley Precinct (Ku-ring-gai)	Residential East Precinct (Ku ring gai)	Total Additional	Total Cost
Houses (4 bed)	0	-12	-12	0	-3	2	-25 @ \$29,982.69	\$-749,567
Townhouses (3 bed)	0	38	0	0	0	0	38 @ \$19,096.67	\$725,673
1 bed units	0	7	50	26	22	0	105 @ \$11,255.04	\$1,181,779
2 bed units	0	14	100	54	44	0	211 @ \$15,867.76	\$3,348,097
3 bed units	0	6	50	26	22	0	104 @ \$19,004.41	\$1,976,459
Total								\$6,482,441

Appropriate arrangements will also be negotiated, via planning agreement or other suitable mechanism, for the provision of State infrastructure and services to support the proposed development. This will address such requirements as transport infrastructure, utilities and service upgrades, and possible environmental mitigation measures.

10 DRAFT STATEMENT OF COMMITMENTS

Subject	Commitment	Approval authority (where applicable)	Timing
Infrastructure Contributions	We commit to enter into a Voluntary Planning Agreement, Deed of Agreement or other mechanism to provide roadwork upgrades that can be reasonably demonstrated to arise from the redevelopment of the Wahroonga Estate. It is anticipated that the ultimate works would be scoped from the list of works identified in the Roads and Traffic Authority letter to Department of Planning dated 18 June 2009.	DoP	Prior to release of the construction certificate for the first project / development application
	Local contributions will be in accordance with Council Section 94 Contribution plans, including provision for: <ul style="list-style-type: none"> - levies, - works in kind, or - voluntary planning agreement. 	Council	Prior to determination or in accordance with conditions of any project / development application
Transport	A package of transport measures will be prepared to promote modal shift from private to public transport. Measures may include: <ul style="list-style-type: none"> - bus infrastructure and service improvements, including school services; - bicycle facilities including secure bicycle parking and end of trip facilities; and - information dissemination promoting public transport options. 	MoT	Prior to determination of the first project / development application
Construction Traffic Management	Construction Management Plans will be prepared to take account of: <ul style="list-style-type: none"> - construction access requirements; - temporary parking for construction contractors / staff; and - other construction traffic related matters. 	Consent authority (DoP or Council)	To accompany individual project / development applications
Car Parking	Final car parking design is to be included with development applications. Design shall comply with the relevant Australia Standards including AS2890.1 and AS 2890.2 and be generally in accordance with <i>Section 8.7 Access, Circulation and Parking</i> of the approved concept plan.	Consent authority (DoP or Council)	To accompany individual project / development applications
Stormwater and Water Quality Management	Water sensitive urban design measures will be provided generally in accordance with the recommendations of the Wahroonga Estate Flooding and Stormwater Master Plan (Hyder Consulting, February 2009) and the approved concept plan.	Consent authority (DoP or Council)	To accompany individual project / development applications
	Sewer mining opportunities will be investigated during precinct development proposals and as part of negotiations with Sydney Water for on-site water and sewer servicing.		Prior to any significant upgrade in the existing sewer network capacity
Waste Management	A Waste Management Plan addressing demolition, construction and on-going waste management will be included with applications for development.	Consent authority (DoP or Council)	To accompany individual project / development applications

Subject	Commitment	Approval authority (where applicable)	Timing
Heritage	An interpretation strategy is to be prepared for the Sydney Adventist Hospital and associated buildings. It is to refer to identified historic themes and provide guidance in the development of a meaningful interpretation for the site. Contributing interpretive elements, including archival photographic recording and recovered relics, are to be housed on site, preferably in the 'Bethel' Museum.	DoP – Heritage Branch	Prior to or accompanying the first project / development application within the Central Hospital precinct
	<p>Statements of Heritage Impact (SHI) will be prepared for development affecting:</p> <ul style="list-style-type: none"> - the Adventist Administration Building, - 'Bethel' House, - Shannon wing, - Maternity wing, - California-style Bungalow at 179 Fox Valley Road, - 1930s Villa at 175 Fox Valley Road, and - timber-framed cottages fronting Fox Valley Road. 	DoP – Heritage Branch	To accompany individual project / development applications affecting these buildings
	An archival recording will be prepared to ensure the different phases in the historical development of the Sydney Adventists in Wahroonga are recorded prior to important buildings ('Bethel', the Shannon wing, Maternity wing, California-style Bungalow at 179 Fox valley Road and 1930s Villa at 175 Fox Valley Road, timber frame cottages) being relocated or removed. The recording should be undertaken in accordance with Heritage Branch guidelines and include the physical context, setting, gardens and landscaping of each building.	DoP – Heritage Branch	To accompany individual project / development applications for the demolition, removal or relocation of these buildings
	<p>Clearance works associated with the:</p> <ul style="list-style-type: none"> - Adventist Administration Building, - 'Bethel' House, Shannon wing, - Maternity wing, - California-style Bungalow at 179 Fox Valley Road, - 1930s Villa at 175 Fox Valley Road, and - timber-framed cottages fronting Fox Valley Road <p>will be supervised and recorded by an excavation director in accordance with Heritage Branch requirements.</p>	Consent authority (DoP or Council)	Throughout the nominated clearance works
	If development is proposed that will affect Registered Site 45-6-2040 and the adjacent Zone E2 conservation areas on Coups Creek, an Aboriginal Heritage Impact Assessment, in consultation with the local Aboriginal community groups is required.	DECC	Prior to any development affecting Registered Site 45-6-2040 and the adjacent Zone E2 conservation areas on Coups Creek

Subject	Commitment	Approval authority (where applicable)	Timing
Ecology	<p>Biodiversity Management Plan (BMP)</p> <p>A BMP will be adopted for the site. It will incorporate:</p> <ul style="list-style-type: none"> • a Vegetation Management Plan for: <ul style="list-style-type: none"> - maintenance of site vegetation including endangered ecological communities (EECs); - protection of riparian corridors; - retention / replacement of hollow-bearing trees; - fencing and / or signposting for the protection of threatened species and critical habitats • a Weed Management Plan including measures to comply with the NSW Noxious Weeds Act 1993; • an Erosion and Sediment Control Plan to mitigate construction impacts; • a revegetation and landscaping plan including the provision of suitable habitat for the following threatened fauna species: <ul style="list-style-type: none"> - Powerful Owl; - Grey-headed Flying-fox; and - Swift Parrot. • EEC monitoring to determine the impacts of construction and development upon the EECs and provision, as required, of mitigation measures; and • management measures and restrictions to minimise the impacts of feral animals and domestic cats and dogs. 		Prior to or accompanying the first project / development application or bushfire management works affecting existing vegetation
	<p>Powerful Owl Management Plan (POMP)</p> <p>A POMP will be incorporated into the BMP to promote the sustained breeding and foraging of Powerful Owls on site. Referencing the Recovery Plan for Large Forest Owls (DEC 2006), the POMP will:</p> <ul style="list-style-type: none"> - identify appropriate feed trees for the owl's preferred prey species, - establish the number and location of nest boxes, - establish construction protocols for the Residential East Precinct to mitigate impacts on the owl's breeding, and - detail a monitoring program, of fixed duration, to determine the response of the owls to construction, development and alternate nest boxes. 		Prior to or accompanying the first project / development application within the Residential East precinct (<i>Figure 33 - Precinct Plan</i>)

Subject	Commitment	Approval authority (where applicable)	Timing
Bushfire	Bushfire protection measures are to be provided in accordance with ABPPs <i>Bushfire Protection Assessment</i> (November 2008), <i>Figure 8 – Residential and Special Uses APZ</i> of the concept approval, or where not specified, in accordance with <i>Planning for Bushfire Protection 2006</i> (PfBP).	Consent authority (DoP or Council)	Prior to or accompanying individual project / development application
	<p>Fire Management</p> <p>The existing Estate Fire Management Plan will be progressively updated to address the provision of APZs, vegetation and fuel management within the Estate. It will include :</p> <ul style="list-style-type: none"> - establishment and management of vegetation within APZs as landscaped gardens or where it extends into existing bushland, providing crown separation and a managed, discontinuous understorey; - specifying ownership and management of APZs and residual vegetation to either the Australian Conference Association; or on non-ACA retained land, the owners of the land under an 88B Easement provision. 		Prior to or accompanying individual project / development applications
	<p>Emergency Planning</p> <p>An Emergency Liaison Committee (ELC) will be established by the Australian Conference Association (ACA) with a requirement that:</p> <ul style="list-style-type: none"> - The ELC Chair Person is to attend the Local Emergency Management Committee (LEMC) meetings. - The ELC is to provide the LEMC and the Emergency Service Combat Agencies / Support Welfare Agencies with the emergency planning protocols and issues related to land uses within the Estate. - The ELC Chair Person is to coordinate annual inspections of Estate facilities by the Emergency Service Combat Agencies. <p>A Fire Emergency / Evacuation Plan will be developed for the Estate.</p>		Prior to occupation of buildings within the first stage of development
Utilities	Direct liaison is to occur to determine utility and service requirements for each stage of development. Augmentation to ensure adequate capacity must be provided to support proposed development, as required.	Utility and service providers	Prior to construction of any subsequent stage of development
Geotechnical	A detailed, intrusive, geotechnical assessment is to be undertaken prior to detailed design of proposed development.		Prior to or accompanying project / development applications
Transfer of Lands	<p>An appropriate public authority or community based organisation must be identified, as part of environmental offset arrangements, for the transfer ownership of conservation lands within the Estate. In the event that negotiations for transferral of ownership fail, the land will be retained in private ownership.</p> <p>In any case, the land owner will be responsible for the ongoing implementation of the biodiversity management plan.</p>		Prior to or accompanying the first project / development application or bushfire management works affecting existing vegetation

Subject	Commitment	Approval authority (where applicable)	Timing
Residential car share scheme	A residential car share scheme will be established and levies applied to future medium and high density residential dwellings. Details of the scheme will be provided as part of an overall carparking management strategy.		Prior to occupation of any subsequent stage of residential development
Staging	Detailed staging plans will be provided for each precinct identified in <i>Figure 81 – Staging Plan</i> of the concept approval.	Consent authority (DoP or Council)	Prior to or accompanying the first project / development application within each precinct.

11 CONCLUSION

In summary, the Preferred Project Report finds the proposal is an appropriate redevelopment of a specialised health employment hub. The proposal is of significance to the economy of the State and the upgrading of the health facilities together with additional residential accommodation is good planning and justifiable in an environmental sense.

Further to the listing of the Estate as a State Significant Site it is recommended that the development be in accordance with the concept plan detailed in the Preferred Project Report.

The image features a dark green background with several stylized, layered green leaves of varying shades and orientations. The leaves are rendered with soft, painterly textures. In the center-left, the word "LIFE" is written in a light green, elegant serif font. The letters are slightly transparent, allowing the underlying leaf patterns to be visible through them. The overall composition is clean and modern, with a focus on natural elements and typography.

LIFE