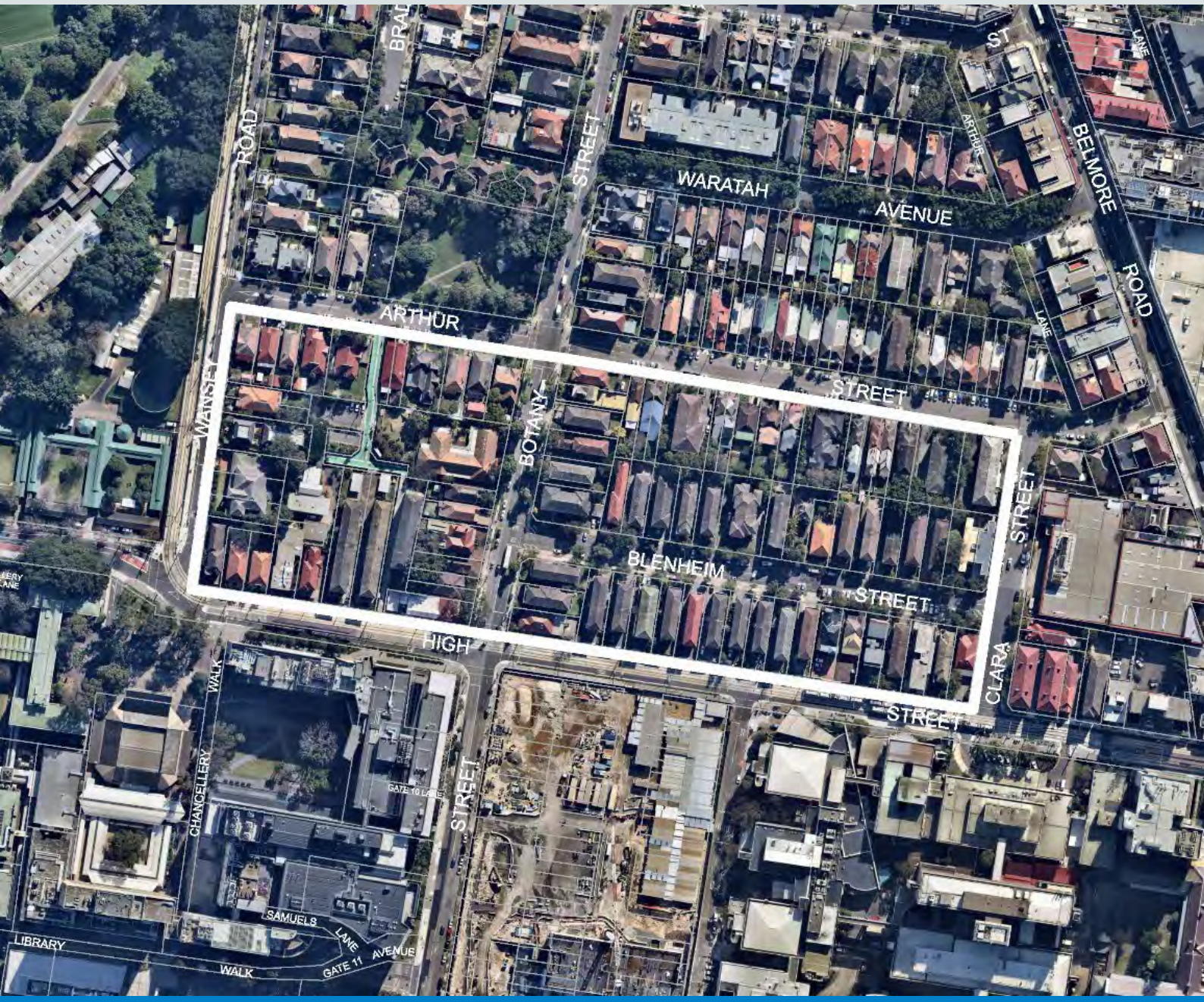
ATTACHMENT H(3)

Draft Arthur Street HIA
Urban Design Analysis Report



STRATEGIC PLANNING

Arthur Street Housing Investigation Area Urban Design Report

Planning Proposal

May 2022

Randwick City Council
a sense of community

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Contents

1. Location

1.1. The Arthur Street HIA

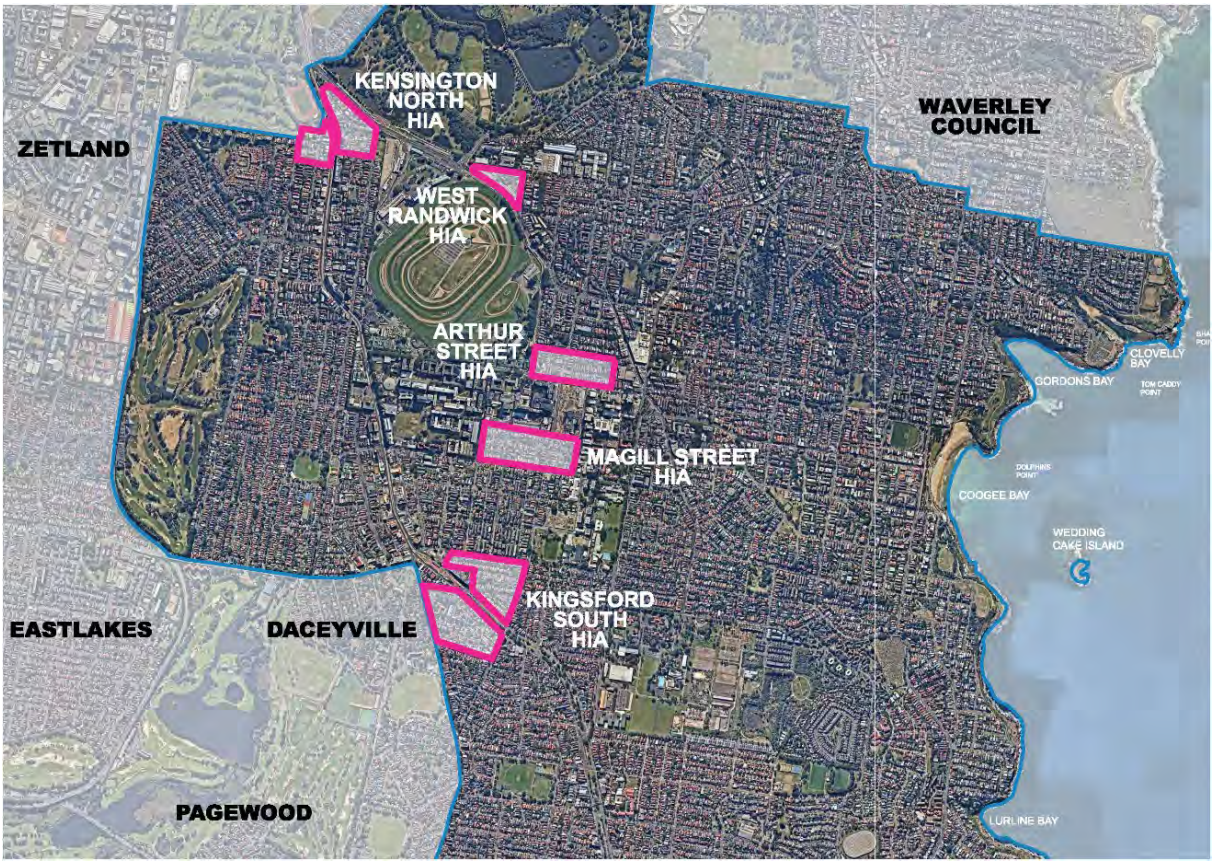
- The Arthur Street Housing Investigation Area (HIA) is located in the suburb of Randwick in the LGA's north.
- The HIA is bounded by Arthur Street, Clara Street, High Street and Wansey Road as shown in Map 1.

Map 1: Housing Investigation Area

1.2. Local context

- The Arthur Street HIA adjoins the Randwick Health and Education Precinct comprising the UNSW Kensington campus and the Randwick Hospitals Campus.
- Directly east of the HIA is Randwick Junction town centre with retail, food, cafes, personal services, and business uses fronting Belmore Road. In addition, Randwick Junction possesses two shopping centres, being Randwick Plaza (Coles supermarket, retail shops and carpark) and Royal Randwick (Woolworths, food, retail, Council's Library, fitness centre and office/medical suites).
- Randwick Junction is also a major transport hub for the LGA, connecting the Randwick city centre to Bondi Junction, Coogee, Maroubra and the Sydney CBD.
- The Arthur Street HIA is situated along the L2 light rail route, connecting Randwick to the CBD via Moore Park. The UNSW High Street light rail station is located in the south west corner of the HIA with the Randwick terminus station located at the intersection of High Street and Belmore Road, just outside the HIA.

- To the west of the HIA is the Royal Randwick Racecourse.
- Directly north of the HIA is Writtle Park Playground, a small neighbourhood park, and residential streets with similar land uses to the existing Arthur Street HIA.



Map 2: Local context – location of five Housing Investigation Areas

2. Existing characteristics

2.1. Description of the investigation area

- The residential character of the Arthur Street HIA is different to the commercial and institutional land uses that surround the area. UNSW Kensington, the Randwick Hospitals Campus, Randwick Junction and The Royal Randwick Racecourse are the predominant land uses near within the HIA. The land uses within the HIA respond to these neighbouring institutions, including student accommodation, short term hospital accommodation and local medical facilities.
- The HIA is largely medium density residential with a small number of commercial land uses. Despite the largely residential landscape, the HIA covers several busy main roads and public transport routes such as High Street, Wansey Road and Botany Street.

Photo 1 – Corner of High Street and Wansey Road, looking east towards the High Street light rail stop (Oct 2019)

Photo 2 – Corner of Wansey Road looking south with the L3 light rail route on the right (Oct 2019)

Photo 3 – Corner of Arthur Street and Botany Street, looking south east (Oct 2019)

Photo 4 – Corner of Highstreet and Clara Street looking west, with Sydney Children's Hospital on the Right (Oct 2019)

Photo 5 – Clara Street looking south, with the back of Randwick Plaza Shopping Centre on the right (Oct 2019)

Photo 6 – Blenheim Street looking east (Oct 2019)

Photo 7 – Corner of High Street and Hospital (Oct 2019)

Photo 8 – Corner of Arthur Street and Arthur Lane looking south east with UNSW Kensington in the background (Oct 2019)

Photo 9: Blenheim Street looking west

Photo 10: High Street looking west

3D Image 1 – Arthur Street HIA from the north west (Feb 2020)

3D Image 2 – Arthur Street HIA from the south east, with the CBD in the background (Feb 2020)

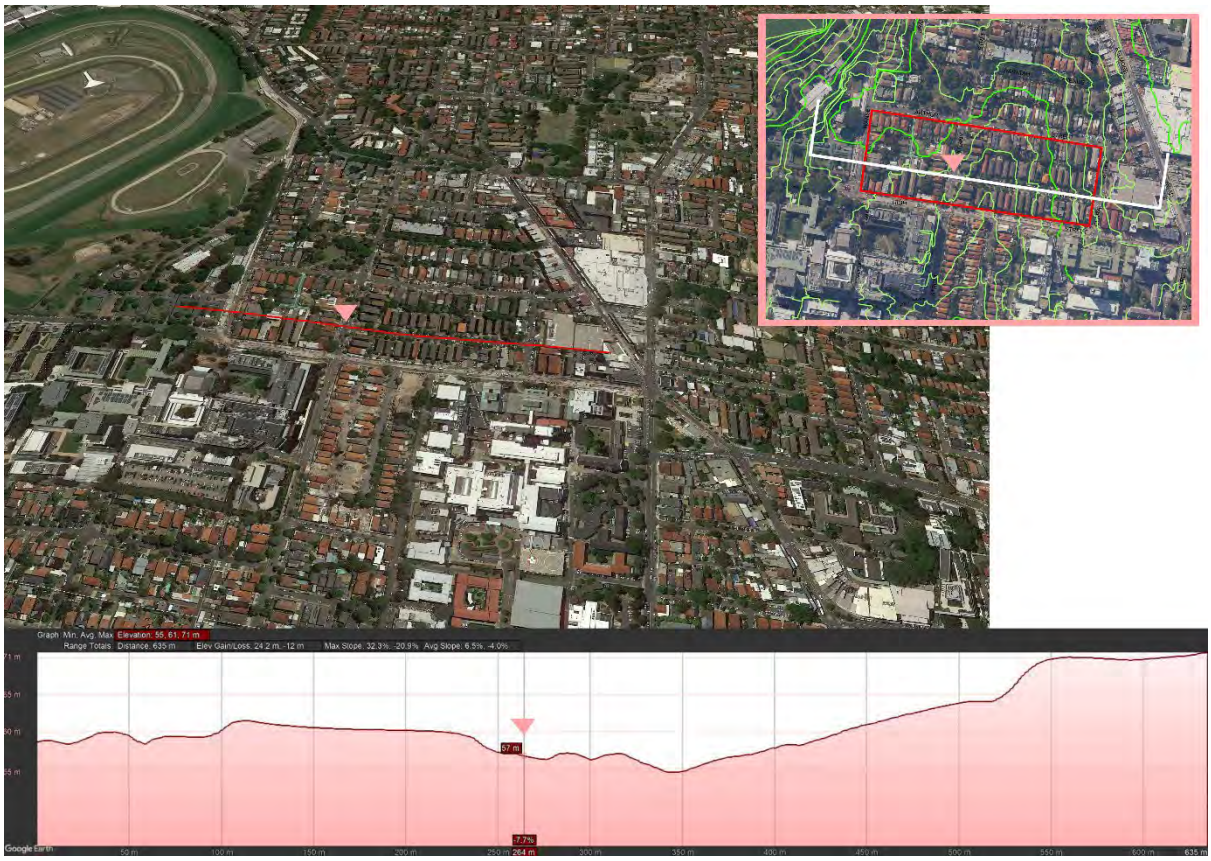
3D Image 3 – (Feb 2020)

3D Image 4 – (Feb 2020)

2.2. Topography

- The Arthur Street HIA has significant topographic features that impact its built form.
- As shown on Map 3, the length of the HIA runs over a small valley with the lowest point being at the corner of High Street and Hospital Road.
- The changes in topography are most evident and impactful along High Street, Blenheim Street and Arthur Street, as they run east to west.

Map 3: Topography



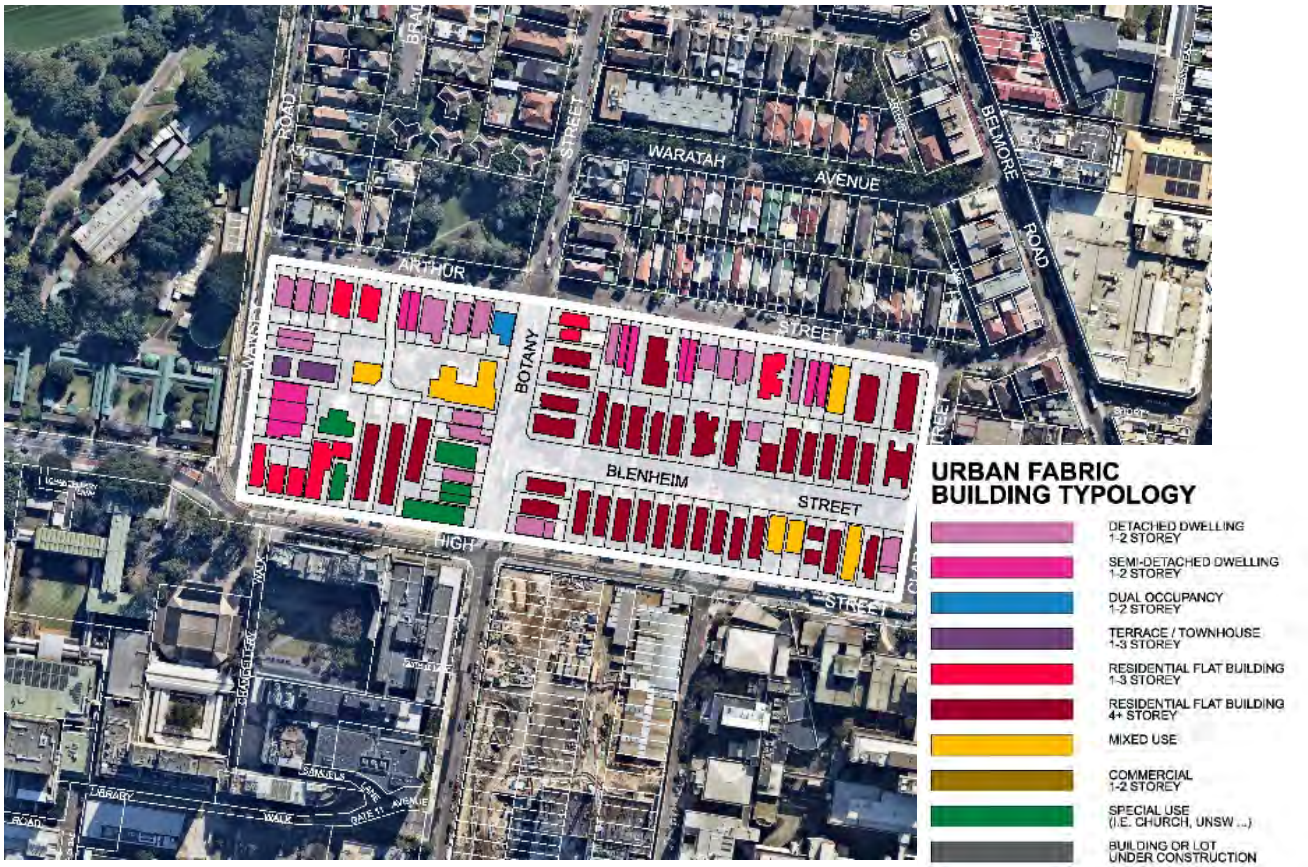
Map 4: Topography

2.3. View corridors

- The HIA contains few significant view corridors, except for the view from the western border of the HIA looking north west towards Randwick Racecourse with the Sydney CBD in the background.

2.4. Building typology

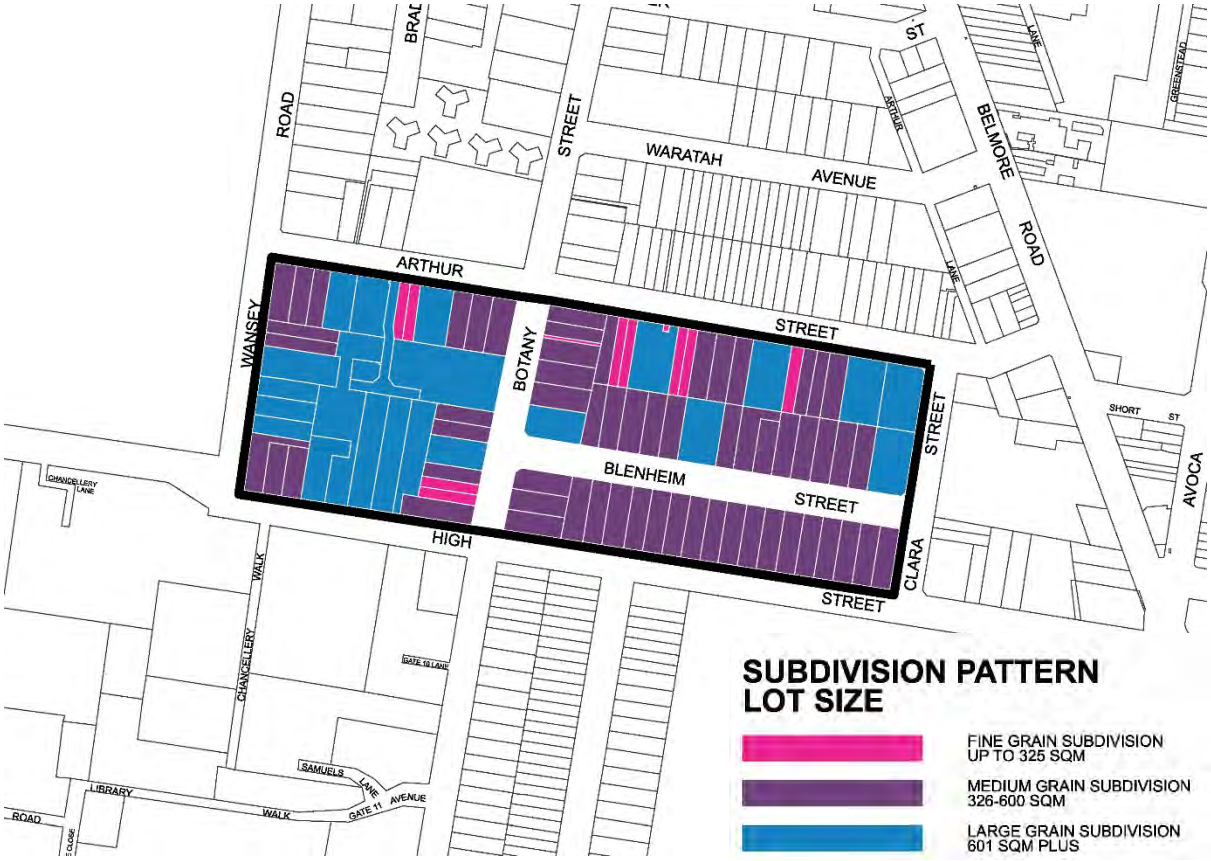
- The Arthur Street HIA has a diversity of building typologies with a predominance of 4 storey or larger apartments along Blenheim Street and High Street (see Map 5).
- In contrast, Wansey Road and Arthur Street contain mainly low-rise buildings. Outside the HIA, the northern side of Arthur Street has a clear typology pattern of 1 storey terraces and townhouses. The southern side has no clear trend, with a variety of different building typologies.
- All commercial buildings have similar typologies to the adjacent lots, with some being mixed use residential buildings.
- Along Blenheim Street, most lots have a hardscape frontage with low or no fencing. The majority of spaces on lots are taken up by parking and driveways however some buildings provide landscaping within the front setback.
- This typology is also common on High Street. Other lots on High Street have no frontage or a pedestrian entrance only.
- Many lots on Wansey Road and Arthur Street have small private frontages with fences and a building setback that leaves space for a front yard.
- Many lots on High Street have dual frontages on Blenheim Street or Arthur Lane.



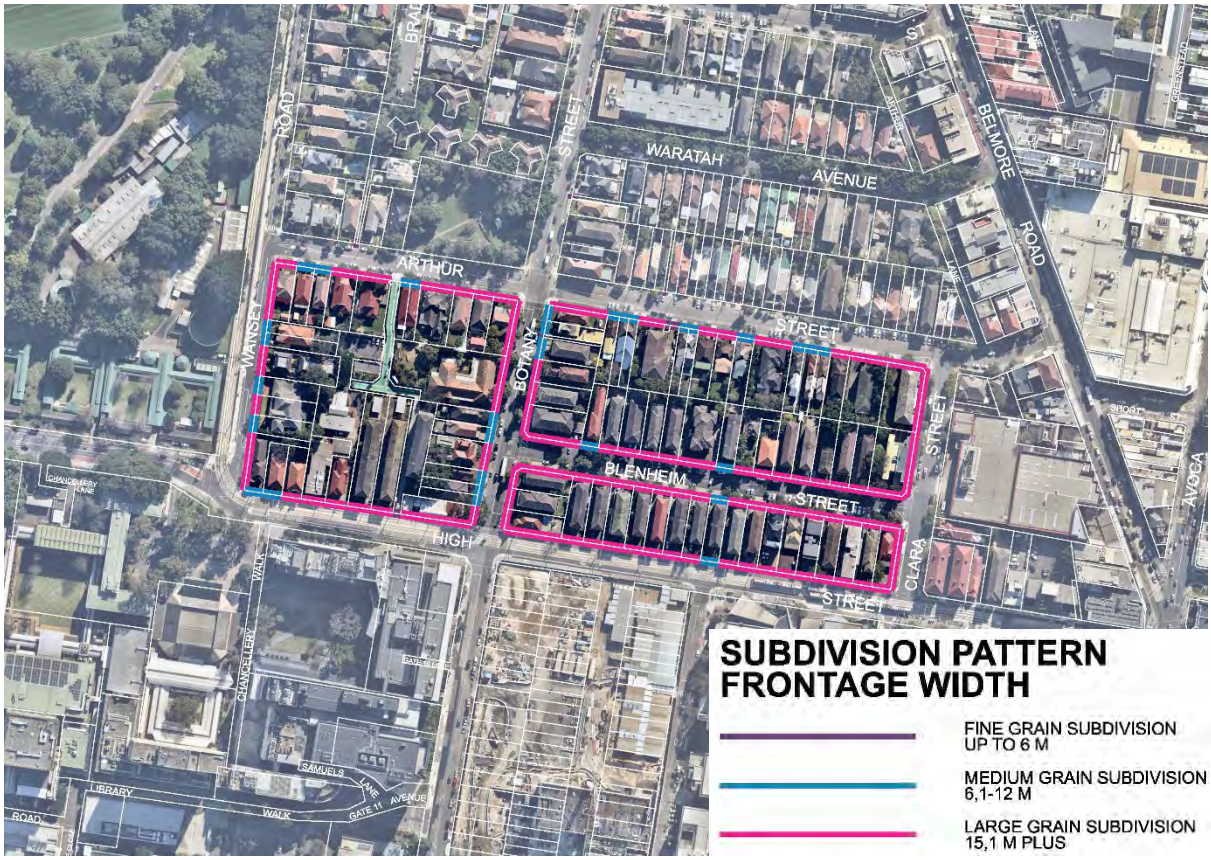
Map 5: Building typology (indicative only)

2.5. Subdivision pattern

- The Arthur Street HIA contains three broad lot sizes as shown in Map 6.
- The Blenheim and High Street block has a uniform, clear pattern of medium grain subdivision of lot between 326m2 and 600m2 in size.
- The HIAs western block bound by Wansey Road and Botany Street comprises several large lots greater than 601m2, several medium grain subdivisions and a smaller number of fine grain lots (less than 325m2).
- The Arthur Street to Blenheim Street block is mostly comprised of medium grain subdivision lots with six small grain subdivision lots and seven large lots.
- Most lots within the HIA have a large frontage width greater than 15m. See Map 7.



Map 6: Lot sizes

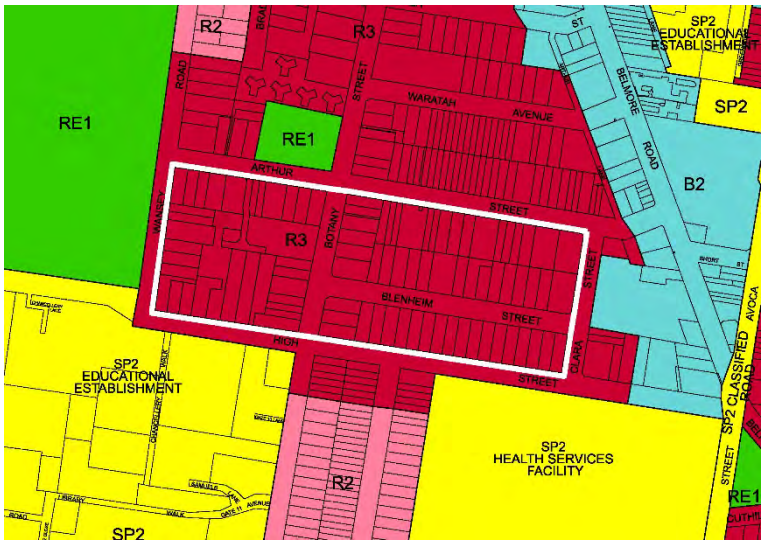


Map 7: Frontage widths

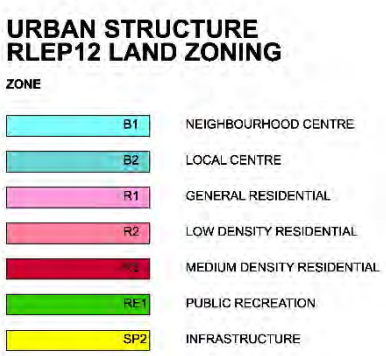
3. Existing planning controls and considerations

3.1. Land use zoning

- All lots within the HIA are zoned R3 Medium Density Residential under the Randwick LEP 2012.



Map 8: Land use zoning under Randwick LEP 2012

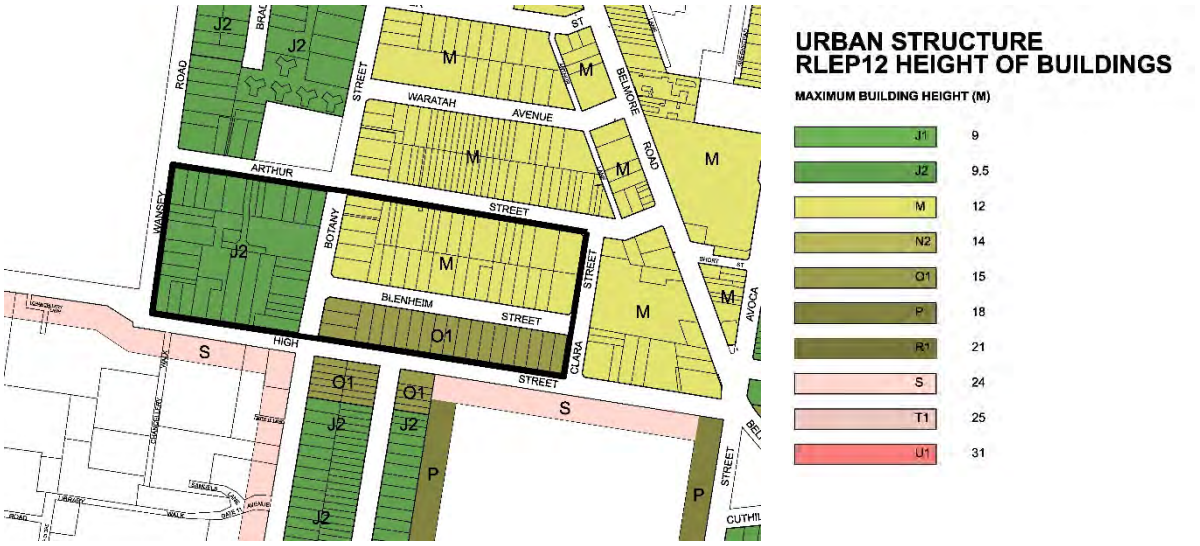


Land use zoning key

3.2. Height of building

There are three building heights in the HIA under the Randwick LEP 2012. See Map 9. These building heights are:

- 15m (5 storeys) for the Blenheim and High Street block in the HIAs south.
- 9.5m (3 storeys) for the Wansey Road block in the west of the HIA.
- 12m (4 storeys) for the Arthur to Blenheim Street block in the HIAs north.

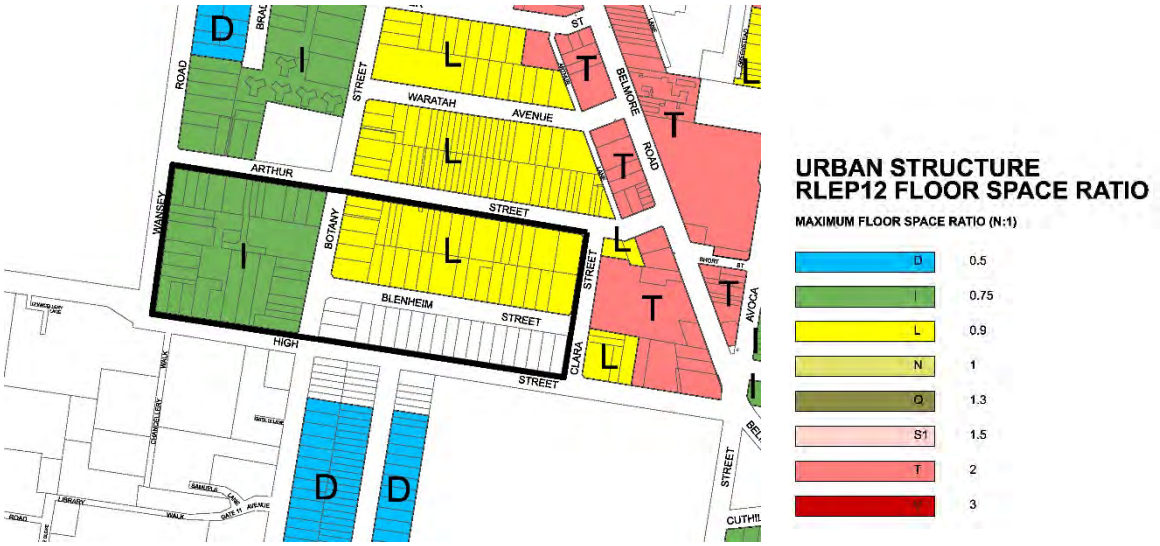


Map 9: Maximum height of buildings under Randwick LEP 2012 Height of buildings key

3.3. Floor space ratio

The Arthur Street HIA possesses two Randwick LEP 2012 floor space ratios (FSR). See Map 10.

- The northeast block (L) has a FSR of 0.9 and the western block (I) has a FSR of 0.75.
- The southeast block along High Street has no floor space ratio controls.



Map 10: Maximum floor space ratio under Randwick LEP 2012 Floor space ratio key

3.4. Heritage

- Within the HIA there is a single heritage item, listed in the Randwick LEP, being 'Blenheim House' (completed in 1848 by Simeon Pearce, Randwick's first Mayor) at 17 Blenheim Street. The property is owned by Randwick City Council. See Map 11.
- There are two heritage listed lots on Clara Street opposite the HIA.
- The Randwick Junction Heritage Conservation Area also borders the HIA on the eastern side of Clara Street and the Randwick Racecourse Heritage Conservation Area borders the HIA to the west.

Map 11: Heritage items and conservation areas under Randwick LEP 2012

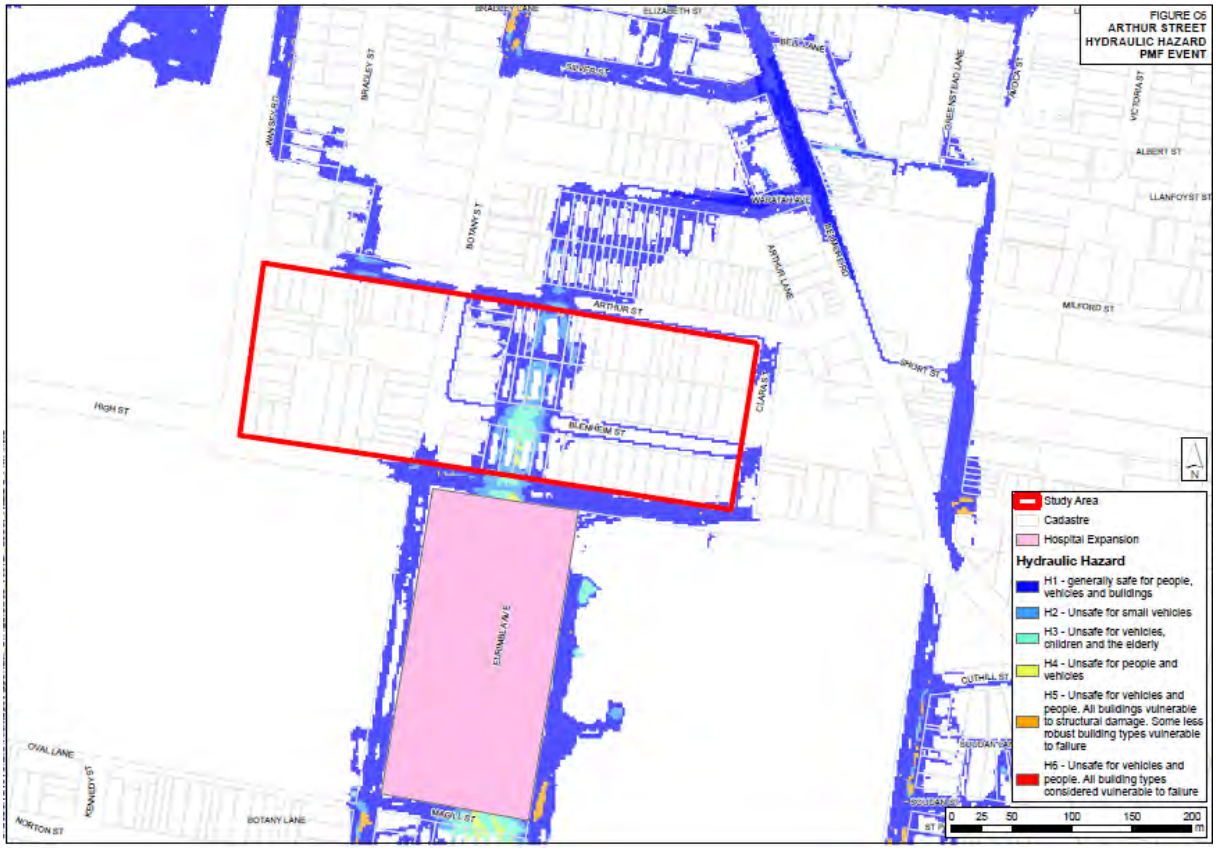
3.5. Flooding

- Council commissioned WMA Water to undertake a Flood Constraints Review of the five HIAs, which was completed in Nov 2021 (refer to Attachment K of the Planning Proposal – Flood Constraints Review). The key conclusions of the report relevant to this HIA are summarised below.
- Flood risk in the Arthur Street HIA is fairly localised to a single overland flow path, which runs from north to south through Arthur Street, across Blenheim Street to High Street, between Botany Street and Clara Street. This overland flow path occurs along the natural gully in the topography shown in Map 12. The overland flow will occur in intense storm events when runoff from the upstream area exceeds the capacity of the stormwater network.
- Maps 12 & 13 show that shallow overland flow will occur through private property along the alignment. The existing development along this flow path incorporate design features that are appropriate for and consistent with this flood risk. Each of these developments has non-habitable ground floor uses with habitable floors on the upper levels.
- The majority of the HIA will not be subject to flood related development controls apart from the lots affected by this overland flow path.
- New development along this flow path will require provisions of open space to prevent obstruction of overland flow particularly between Blenheim Street and High Street. The contiguous block would require a gap between buildings to allow for passage of the 1% AEP flow path without exacerbating flooding on other properties.
- Hazards associated with the overland flow path are very low for the 1% AEP and are generally low even for the PMF event (see Maps 14 & 15). These hazards will not present a significant constraint for the risk to life considerations of proposed development within the HIA.
- New development along the flow path will require raised floor levels to prevent above floor inundation of habitable areas. Basement car parks and garages may also be subject to minimum entry or finished level requirements.
- Flooding impacts will be subject to further detailed assessment at the Development Control Plan (DCP) stage with further controls and design requirements considering the impacts of flooding up to the PMF.

Map 12: 1% AEP overland flow directions

Map 13: Peak flood depths and level 1% AEP event

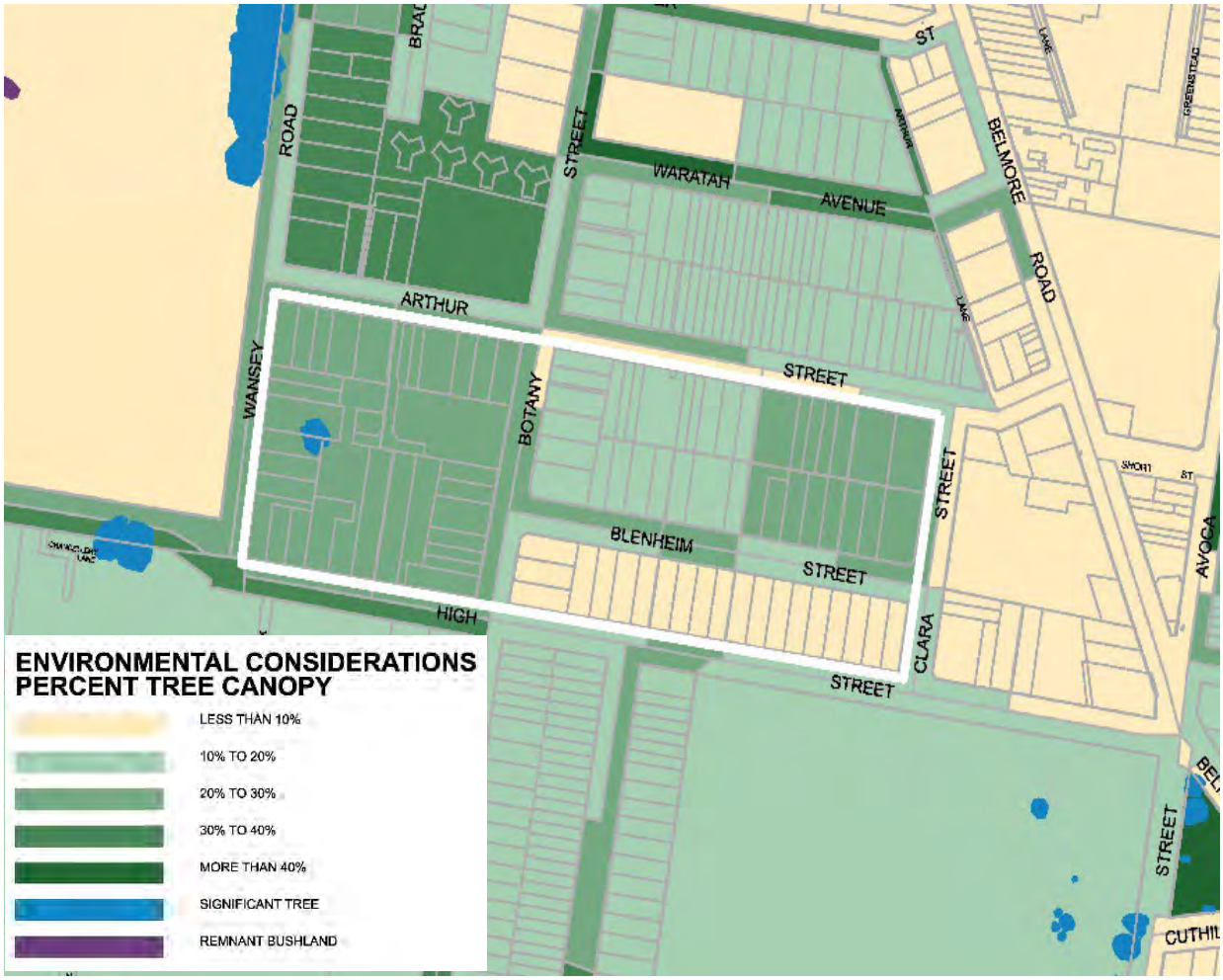
Map 14: Hydraulic hazard 1% AEP event



Map 15: Hydraulic hazard PMF event

3.6. Significant trees

- The Randwick City Significant Tree Register has identified a Pepperberry Tree (Cryptocarya obovate) at 45 Wansey Road as a significant tree. See Map 16.
- The HIA however, has a variety of tree coverage with the west and northeast portion covered by 20-30% tree canopy with the remaining area being 10-20% tree canopy.
- Lots along High Street (between Clara and Botany Streets) have a tree canopy cover of less than 10% which is reflective of the carparking and driveways around buildings.

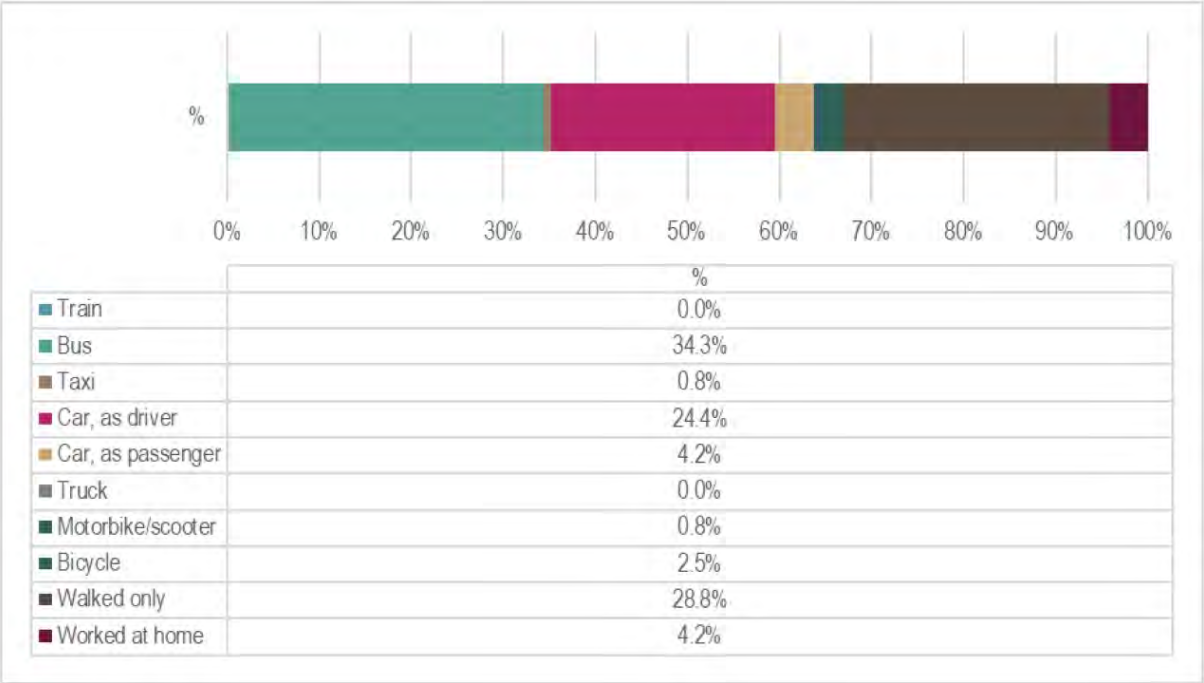


Map 16: Proportion of tree canopy cover

3.7. Transport

Existing travel patterns

- The table below shows the 'Method of Travel to Work' mode share results for residents living in the Arthur Street HIA in 2016. Compared to other HIAs, Arthur Street has the highest active transport mode share (31.3%), comprising the highest walking mode share of 28.8% and a bicycle mode share of 2.5%.



	%
Train	0.0%
Bus	34.3%
Taxi	0.8%
Car, as driver	24.4%
Car, as passenger	4.2%
Truck	0.0%
Motorbike/scooter	0.8%
Bicycle	2.5%
Walked only	28.8%
Worked at home	4.2%

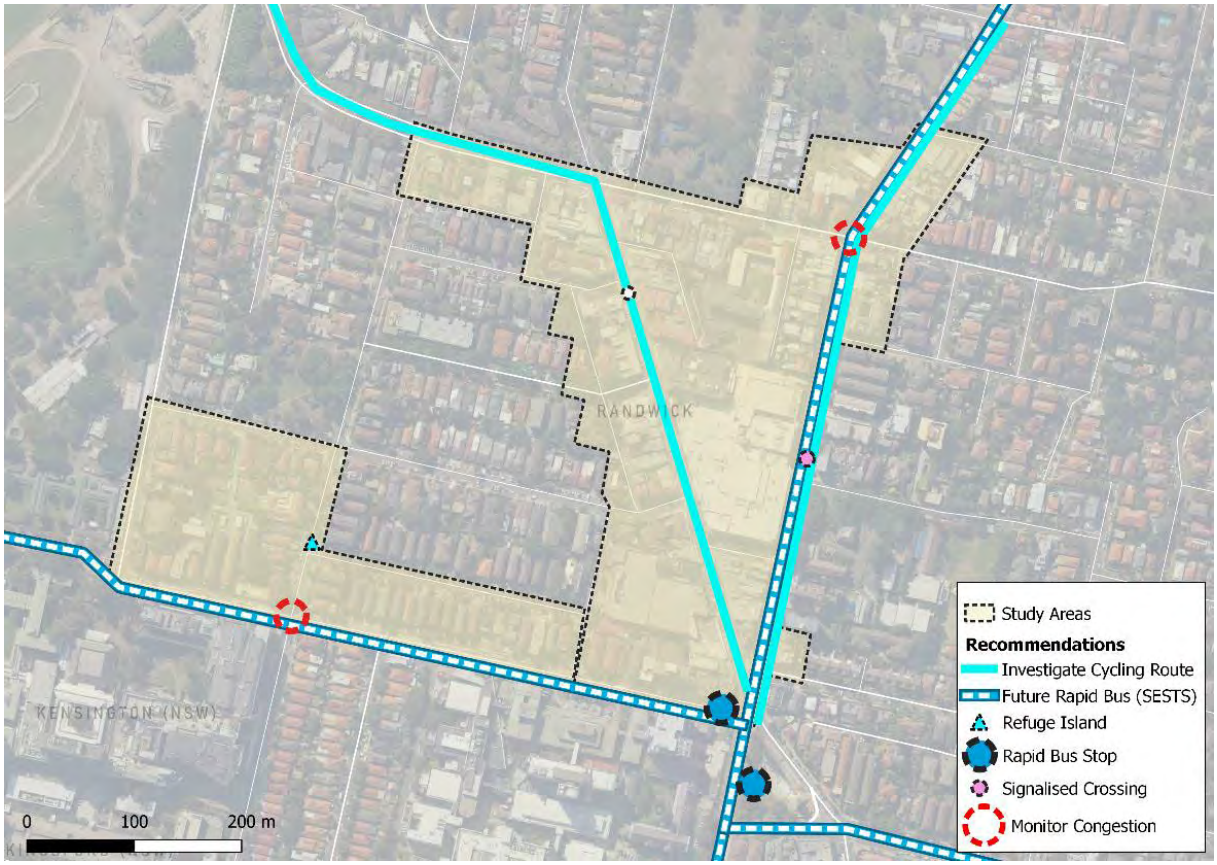
- A large proportion (83.9%) of households own one or no vehicles, reflective of the dense urban environment in close proximity to major services and employment such as Randwick Junction, UNSW Kensington and the Hospitals campus. 40.7% of households own no vehicle, 43.3% own one. Only 14.4% own 2 vehicles and 1.5% own three.
- Arup's Traffic and Transport Assessment (2021) for the Children's Comprehensive Cancer Centre notes that the Botany Street/High Street intersections performs at a Level of Service D in both the AM and PM peak hours, meaning that the intersection is operating near its capacity.
- Regarding public transport, the L2 Randwick Light Rail line runs through the HIA, with stops at UNSW High Street and Randwick servicing the study area. Route 358 heads south on Botany Street and takes passengers to Sydenham via Mascot, while other routes on Belmore Road go to nearby centres and suburbs. The proposed east-west rapid bus route will take passengers to Coogee in the east and Rozelle via Green Square to the west.
- High Street is classified as a 'main road'. Signalised crossings are present at four locations along High Street, as well as Wansey Road and the Botany Road/Arthur Street intersection. There was one pedestrian crash in the reporting years of 2015 to 2019, at the intersection of Wansey Road and Arthur Street, however this was prior to the light rail and one-way road changes at Wansey Road.
- Regarding cycling infrastructure, High Street and Wansey Road are classified as Principal Bicycle Network routes, on which there is an on-road mixed facility and off-road shared user path, respectively. There were two cyclist crashes in the HIA in the reporting years of 2015 to 2019, at the Botany Street/Arthur Street intersection, and on Botany Street near Blenheim Street. It is noted that these crashes were prior to the light rail and its impact on local traffic conditions.

<u>Future travel and transport study recommendations</u>

- Considering the estimated net increase of 474 dwellings by 2036 as a result of changes proposed in the Planning Proposal, the 'Do Nothing' scenario in the Local Transport

Study, estimates 75 to 85 private vehicle trips will be added in the peak hour journey to work traffic – a negligible increase on the existing and forecast traffic volume.

- With the Botany Street/High Street intersection performing near to capacity, the Local Transport Study recommends investigating intersection improvements to cater for future growth.
- The scenario estimates a public transport peak hour net trip increase of 85 people – also a negligible increase. The high-capacity nature of the L2 Light Rail is expected to accommodate the increase in patronage from the dwelling growth. Considering that all nearby strategic centres – Green Square, Mascot, Maroubra Junction, Eastgardens, Bondi Junction and the Sydney CBD – are directly accessible via public transport, the future public transport network can effectively support the proposed growth for the Arthur Street HIA.
- At a HIA precinct scale, there is an adequate number and distribution of signalised crossing facilities to support the proposed population growth, however, the provision of some additional refuge islands and/or zebra crossings through the HIA is recommended to improve the precinct's walkability and safety. There is also ample opportunity to improve High Street's place function and strengthen its role as the HIA's main street.
- Regarding cycling, Council is currently undertaking investigations to determine the optimum east-west dedicated cycle route from the High Street/Botany Street intersection eastwards. Other recently delivered cycleways as part of the CBD and South East Light Rail project mean that there is sufficient active transport infrastructure to support future growth.

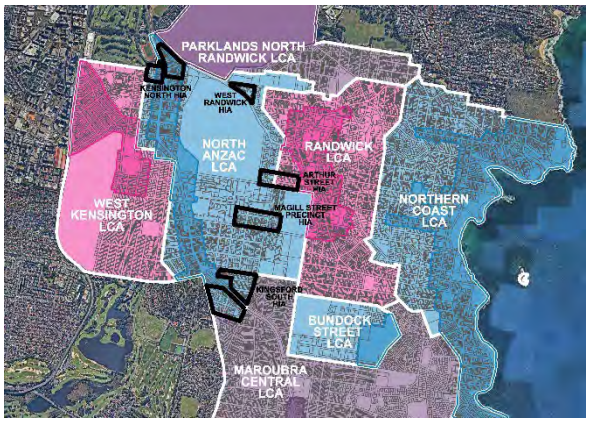


Map 17: Arthur Street and Randwick Junction – Recommendations Map

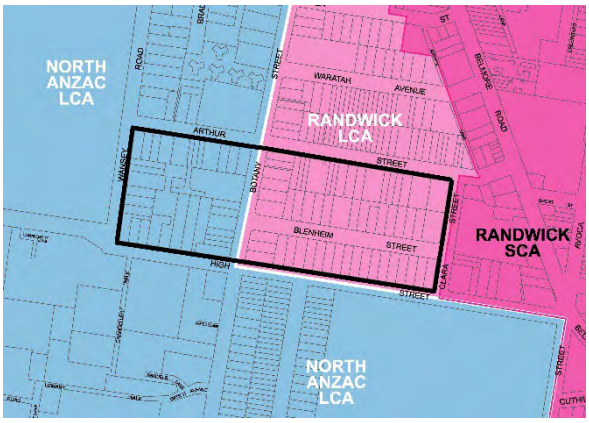
4. Draft local character area

4.1. Description of the investigation area

- The Arthur Street HIA is within 2 draft Local Character Areas (LCAs), the Randwick LCA and the North Anzac LCA defining the HIA's character and features. See Map 18.
- The draft North Anzac LCA comprises Randwick City's major Health, Education, Transport and Economic infrastructure as well as the residential and commercial precincts adjacent to them. This includes the Randwick Health and Education Precinct, Randwick Boys and Girls High Schools, Kensington and Kingsford town centres, Randwick Racecourse, TAFE and Randwick Bus depot.
- The future character principles for the draft North Anzac LCA are:
  - Greater activation along Anzac Parade through new development.
  - Increased active transport connections and infrastructure for a growing population.
  - Reinstating Anzac Parade as a tree-lined boulevard with increased street tree canopy.
  - Greater interaction between the community and the key institutions within the LCA through improvements to the public domain.
  - Increase in arts and cultural facilities to support the local population and visitors.
  - Improvements to the economic vibrancy in the Kingsford and Kensington town centres.
- The draft Randwick LCA comprises active and bustling entertainment and dining precincts, pockets of recreational open space, medium density residential development and large numbers of older medium-density apartment dwellings. Many of these qualities are present within and around the Arthur Street HIA.
- The future character principles for the draft Randwick LCA are:
  - Leverage opportunities for a more diverse and vibrant Randwick Junction town centre.
  - Street enhancements as part of a Randwick Junction town centre strategy.
  - Improve pedestrian and cycling safety along Avoca Street and surrounding areas.
  - Ensure that view corridors across the Coogee Basin towards the ocean are maintained.
  - Ensure the form, scale and density of new development is compatible with local heritage and surrounding land uses.
  - Increase tree canopy cover across the area.
  - Art and culture to be key elements in Randwick Junction and The Spot.
  - Maintain important values of Fred Hollows for future generations.
  - Improve active transport opportunities throughout the area.



Map 18: Excerpt of draft local character areas (northern part of LGA)

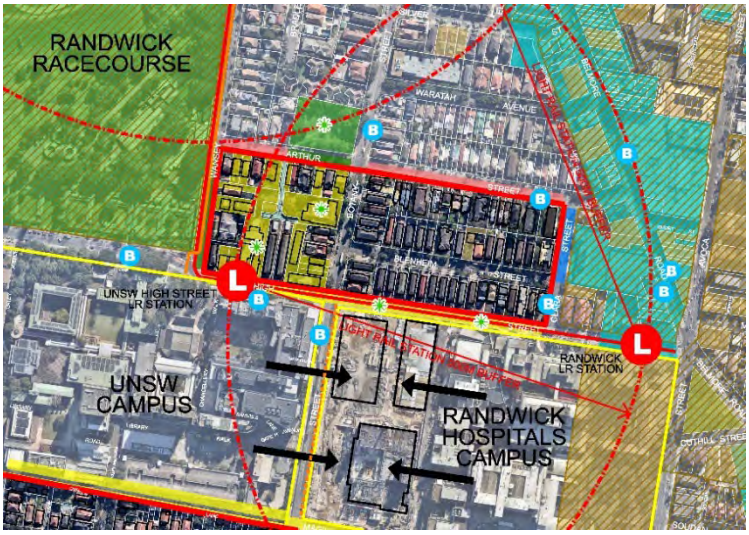


Location of Arthur Street HIA within North Anzac and Randwick LCAs

5. Analysis

5.1. Opportunities and constraints

- The light rail and bus network along with the Randwick Health and Education precinct adjacent to the HIA, provide an opportunity for increasing residential densities close to social services and infrastructure.
- The commercial uses on High Street in the form of serviced apartments and private health providers support UNSW and Randwick Hospitals campus giving precedent for promoting low impact commercial land uses on High Street.
- Blenheim House located on 17 Blenheim Street and completed in January 1848 by Simeon Henry Pearce (later Randwick's first mayor) is one of the most significant heritage listed buildings in Randwick City. No changes to development controls are proposed.
- To preserve heritage and the pedestrian experience on High Street, building setbacks that preserve public space are of importance.
- Writtle Park on Arthur Street is opposite the HIA provides important open space/recreation opportunities close to where people live and work.



Map 19: Opportunities and constraints

Opportunities and Constraints key

6. Strategic justification

An increase in building height (HOB) and floor space ratio (FSR) can be provided in this HIA to support its strategic location near education, employment, health, shopping, and transport services - immediately to the north of UNSW and the Randwick Hospitals Campus, and a short walk west of Randwick Junction Town Centre. The HIA is easily accessible and is serviced by two new light rail stations in High Street and from the adjoining streets.

The zoning for this HIA is unchanged. It is proposed that there should be no change in development controls for the northeast part of the HIA as most of this area is in strata ownership and is already developed with 3-4 storey walk-up apartment buildings at a relatively high density. No height or FSR controls are shown on Map 18 for this area to confirm no change to current controls.

An urban block analysis established that the proposed heights and FSR for the rest of the HIA would sit comfortably within the urban context, have minimal environmental impact on existing residential properties and parks, and could provide beneficial new public domain and through block links as shown on Map 20.

Map 20: Proposed built form and height diagram (heights shown in storeys)

The Arthur Street HIA can provide for increased medium density residential apartment development and associated facilities and services:

- Within easy walking distance of two light rail stations and public bus services.
- Adjoining several important employment hubs including the UNSW and Randwick Hospital (Collaboration Precinct), Randwick Racecourse and within a short walk of Randwick Junction Town Centre.

- Adjoining recreation and entertainment activities offered at Randwick Racecourse immediately to the west.
- With access to main streets – High Street, Botany Street, Wansey Road and Arthur Street, facilitating vehicular and general access.
- The proposed uplift can be used to incentivise an improved urban built form outcome, potentially leading to permeable, pedestrian friendly urban quarters with central court gardens or plazas, improved amenity, and greater access to green space.
- Incorporating new green links from Writtle Park to UNSW High Street light rail station, and increased pedestrian permeability with through-block shared paths.
- Along High Street, a maximum 8 storey height limit with a secondary 3 storey podium/frontage height is envisaged which would provide variety in building height, transition in scale, maintain sunlight to the High Street streetscape and integrate with the Randwick Junction built form typology along Belmore Street.
- Along the Arthur Street frontage, a 5m building setback (allowing residential front gardens) and a step down from 8 storeys to a 4-storey building frontage is proposed, providing a transition in scale to the lower height residences on the north side of the street and to Writtle Park.
- Along the High Street frontage, a 2m building setback is proposed to allow for the footpath to be widened (to approximately 5m), allowing space for awnings, street trees and outdoor seating (where there are cafes), to be accommodated in the street cross section. The setback would result in an improved scale and proportion for the streetscape.
- The flood studies identified an existing overland flow path between Blenheim Street and High Street. An open space link, of 18m width, is proposed to accommodate overland flows when flood events occur.

7. Planning strategy

7.1. HIA areas of no change

Two residential blocks in the Arthur Street HIA, situated to the west of Botany Street and to the south of Blenheim Street, have been assessed to be appropriate for redevelopment. This would be achieved through permitting additional building height and density, contributing to the overall dwelling target for Randwick LGA.

Through Council's urban design analysis in the preparation of the Comprehensive Planning Proposal, it is recommended that no change occurs for the properties to the east of Botany Street and to the north of Blenheim Street. The properties in this area are generally four-storey 'walk-up' apartment buildings in strata ownership which restricts the turnover and development of these properties. Further, the block where no change is proposed, includes Blenheim House an important heritage property.

The focus of this work is to propose changes to the RLEP to allow for moderate uplift in well-serviced areas contributing to Council's 6-10 year (2021-2026) housing target of 4,300 new dwellings. Strata titled properties comprised of 20 or more units have not been included in our calculations as it is unlikely that they will redevelop within the next 6-10 years.

7.2. Desired future built form character

The future desired character of the HIA is for new development which is consistent with the aims of the R3 Medium Density Residential zone and provides for a variety of medium density housing types. The proposed mid-rise typology can enhance the character of the neighbourhood by encouraging high quality design outcomes in an area of high amenity – adjacent to public transport (light rail), the UNSW Kensington Campus, the Randwick Hospital Campus, the Randwick Junction Town Centre, Royal Randwick Racecourse and to Writtle Park.

The proposed new built form would be a maximum of 8 or 9 storeys (from a maximum of either 3 or 5 storeys under the current controls), with a four-storey transition down to the lower scale residential neighbourhood and Writtle Park to the north of Arthur Street. This would be an increase of either 5 or 3 storeys (for the 8 storeys height scenario). The proposed built form would define the High Street and Botany Street streetscapes, and the key HIA residential street frontages and street corners.

Along the High Street frontage, a continuous minimum three storey frontage is proposed, setting a datum that would match the three-storey height of the traditional Randwick Junction - Belmore Road street wall (parapet) height. Along High Street, the taller apartment buildings are oriented north-south to maximise solar access to residents, whilst at the same time providing breaks in the built form, that mitigates building bulk and allows sunshine, through the gaps between the buildings, to the High Street streetscape.

Private green, north oriented court gardens are proposed along Blenheim Street. This would both provide residents with a sunny green common space and break up the scale of the buildings as they would be interspersed with landscaped gardens. A break in the High Street frontage is also proposed to provide a through block pedestrian link aligned with Hospital Road to the south and with Blenheim House (owned by Council) to the north.

The urban block bounded by Arthur Street, Botany Street, High Street and Wansey Road contains a significant number of UNSW owned properties. The consolidation of larger land parcels opens opportunities for the urban planning of the precinct. Four building 'quarters' are envisaged that are integrated with the surrounding streets and pedestrian connections, through the continuance of visual axis and pedestrian desire lines.

The two central courtyards that open off High Street are envisaged as hard paved and permeable public plaza spaces with commercial/retail ground floor levels that responding to the diagonal pedestrian crossing movements from UNSW Chancellery Walk and Botany Street (and the light rail station) to the south, through the block, north to Arthur Street, Botany Street and Writtle Park to the north. The Cammeray Square development (see Photos 11 and 12) is a good example of a mixed-use development model, with retail and apartments wrapped around a central urban landscaped plaza, that also responds to a diagonal pedestrian desire line from Miller Street.

Photo 11: Cammeray Square, Cammeray – aerial plan view

Photo 12: Cammeray Square, Cammeray – street view

A generous north-south mid-block landscaped green link/space is envisaged (expanding on the existing shared use pathway) which would open up the middle of the urban block, providing an attractive outlook for residents and an important 24/7 pedestrian connection. Additionally, the

green link/space would enhance legibility through establishing a visual connection between the light rail station on High Street and the residential areas and Writtle Park to the north.

The mid-rise residential apartment buildings would be set back 2m from the High Street property boundary, defining the main street frontages and reinforcing the urban character of the precinct. The block layout will support buildings with rear or mid-block common gardens, with deep soil tree planting, shielded from the main street frontages. The fine urban 'grain' of the city blocks would be preserved by retaining the series of smaller streets and laneways, and by introducing new pedestrian links, enhancing the overall permeability of the super block.

7.3. Site consolidation

A level of site consolidation would be necessary to achieve the desired optimum urban design and feasibility outcomes. Provisions addressing minimum frontage width and discouraging isolation of sites (which may be difficult to develop on their own) are recommended to be included in the Randwick DCP to ensure that future redevelopment achieves the desired urban design (built form) outcome, ensure residents have good access to natural light and ventilation, and achieve reasonable efficiencies in building structure and parking configuration.

7.4. Transition to surrounding areas

The Randwick Hospital Expansion area is immediately south of the HIA (on the south side of High Street), and two large hospital buildings are proposed of 10 and 12 storey height, with a small setback from the street. A new plaza is proposed between the two buildings with a northern aspect. Other recent UNSW buildings are the Wallace Wurth Building and the Lowy Cancer Research Centre that are equivalent in height to a nine-storey residential building (approx. 30m high).

The new residential precinct will provide a transition in height from the taller hospital and university buildings to the south, down to the lower scale residential areas to the north. The proposed built form would provide a consistent building frontage height along important streets in the public domain, including Botany Street and High Street. The proposed continuous three storey frontage to High Street dovetails with the existing street wall height datum (parapet height) of buildings in Belmore Road, Randwick Junction.

Along the northern Arthur Street frontage, a four-storey step in height is proposed, down to the lower scale residential neighbourhood and Writtle Park on the north side of Arthur Street.

7.5. Landscape character

The street tree planting along High Street and Wansey Road has been impacted by the construction of the light rail – with recent replanting of new street trees and general landscaping. Tree planting along Arthur Street, Botany Street and Blenheim Street being inconsistent. There are several sections of streets with excellent mature trees, whilst other streets are sparsely planted, and therefore exposed and lacking shade and green. Interplanting new street trees on a consolidated theme would enhance these streetscapes. Encouraging mid-block communal court gardens, including mature tree planting would also create a quiet and green refuge for residents from the surrounding streets and support biodiversity.

7.6. HIA Feasibility Assessment (Hill PDA)

Following Council's place-based analysis of the five HIAs and investigations into suitable planning controls to increase development capacity, Council engaged economic planning consultants to assess the redevelopment feasibility and undertake a review of officers proposed built form scenarios in terms of the resulting yield achieved in each HIA. The assessment identified the likely 'tipping point' for redevelopment to occur considering the application of affordable housing contributions of 0%, 3% and 5% of residential floorspace.

The assessment estimates the potential land value of several sites within each of the HIAs based on comparable land sale evidence. Through market research, the end sale values for new development in each of the HIAs has also been identified. It is important that any proposed controls ensure that future development is feasible, otherwise turnover of sites for development may not occur and Council may not be able to meet the community's need for new housing in accessible areas.

The assessment sets a target project Internal Rate of Investment of 16% to 18% p.a. as the primary indicator for the modelling*. The results for the Arthur Street HIA are outlined below:

Zone	FSR required with a 3% affordable housing contribution	Proposed height (storeys) 3%	FSR required with a 5% affordable housing contribution	Proposed height (storeys) 5%
R3 Medium Density Residential	3:1	26m (8)	3.25:1	29m (9)
R3 Medium Density Residential	N/A	13.5m (4)	N/A	13.5m (4)

The assessment found that development of the proposed R3 Medium Density Residential zoned land with a 3% and 5% affordable housing contribution would be viable at an FSR of 3:1 and 3.25:1 respectively. To achieve a 5% affordable housing contribution in this HIA requires an increase in the height/number of storeys from eight storeys to nine storeys, when compared to a 3% affordable housing contribution.

*The Internal Rate of Investment is a developer's actual return on investment on an annualised basis and expressed as a percentage. The approach considers the cost of time in its calculation and indicates the average return for a developer over a period of time.

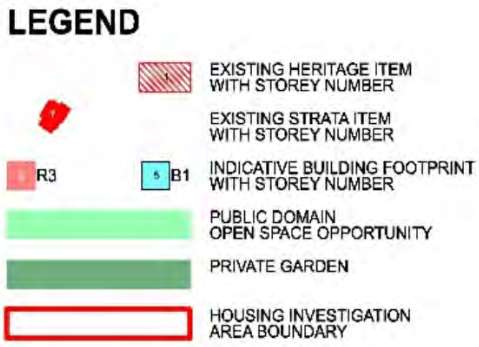
8. Conclusion

8.1. 3D built form testing

Two building density and height options, representing a 3% and 5% Affordable Housing (AH) contribution, were modelled by computer in 3D to illustrate the maximum building envelopes and assess their urban design merit. The two options tested in 3D were:

- Option 1 - 3% AH - Maximum 8 storey height
- Option 2 – 5% AH - Maximum 9 storey height

Map 21: Option 1 – Plan View – Maximum 8 Storeys



Map 22: Option 2 – Plan View – Maximum 9 Storeys

*Map 23 Option 1 – 8 Storeys – View Southeast – 3D modelling of building envelope scenarios**

*Map 24: Option 2 – 9 Storeys – View Southeast – 3D modelling of building envelope scenarios**

*Map 25: Option 1 – 8 Storeys – View Southwest – 3D modelling of building envelope scenarios**

*Map 26: Option 2 – 9 Storeys – View Southwest – 3D modelling of building envelope scenarios**

*Please note: these 3D model images have yet to be updated to account for the recent Flood Constraints Review advice.

8.2. Indicative Envelopes

The 3D aerial views of the HIA illustrate proposed indicative block 'envelopes' and address the Apartment Design Guide (ADG) requirements. The envelopes comply with ADG minimum building-to-building separation guidelines and take into consideration best practice maximum building width to ensure apartments have good access to sunlight and natural cross ventilation.

As recommended in the ADG, a 70% factor has been applied in converting the building 'footprint' (and envelopes) to Gross Floor Area (GFA) and Floor Space Ratio (FSR) to account for overall building articulation, unenclosed balconies, building structure, services, and circulation (lifts, stairs, common corridors). Setbacks and height transitions to heritage properties and to sensitive adjoining low-density residential areas have been considered and addressed in the urban planning and yield calculations. Properties constrained by strata ownership (20 or more apartments), established church buildings and an electricity substation (if relevant) are likely to remain undeveloped in the medium term and have been removed from the calculation of dwelling yield.

In developing the building envelopes, the minimum heights recommended for residential and non-residential uses in the ADG has been applied, whereby extra floor-to-ceiling height is needed for the ground floor and a minimum height (3.1m floor-to-floor) is set for the residential upper levels of buildings. Some additional height is included (generally 1m) to allow for roof level articulation.

Reasonable assumptions have been made regarding the optimum amalgamation of sites for redevelopment that would realise good urban design outcomes. The planning of the HIAs incorporates building setbacks, building-to-building separation, new pedestrian through block links, plaza, and green spaces. The envelopes illustrate potential development scenarios for site amalgamation that avoids isolated sites and provides access to sunlight and natural ventilation, reasonable efficiencies in structure, vehicular access, and parking provision.

8.3. Recommendation

It is recommended that the optimum urban design outcome (building massing and height) for the Arthur Street HIA, taking into consideration the existing and future surrounding built form context, is Option 1 (maximum 8 storeys), noting that feasibility testing has demonstrated that this built form scenario is viable with a 3% Affordable Housing contribution.

The remainder of the HIA study area is not recommended for uplift and excluded from this Comprehensive LEP Planning Proposal. If a significant shortfall in the delivery of new dwellings in the LGA occurs in the short to medium term, the excluded areas of the HIA study area may be reviewed for its potential to contribute to the overall LGA dwelling shortfall. This review would be undertaken at the same time as the 7 year review of the Randwick Housing Strategy.

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