SJB Architects

Urban Design Report
2 & 4 Guess Avenue, Wolli Creek

Prepared for
Bayside Council

Issued
31 July 2019

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We create amazing places

At SJB we believe that the future of the city is in generating a rich urban experience through the delivery of density and activity, facilitated by land uses, at various scales, designed for everyone.

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Contents

Project Background

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1.1 Purpose of Report

SJB has been engaged by Bayside Council (BSC) to prepare an urban design study to consider potential rezoning of 2&4 Guess Avenue to B4 Mixed Use, having consideration of the need to provide a component of public open space (RE1 Public Recreation) on the site.

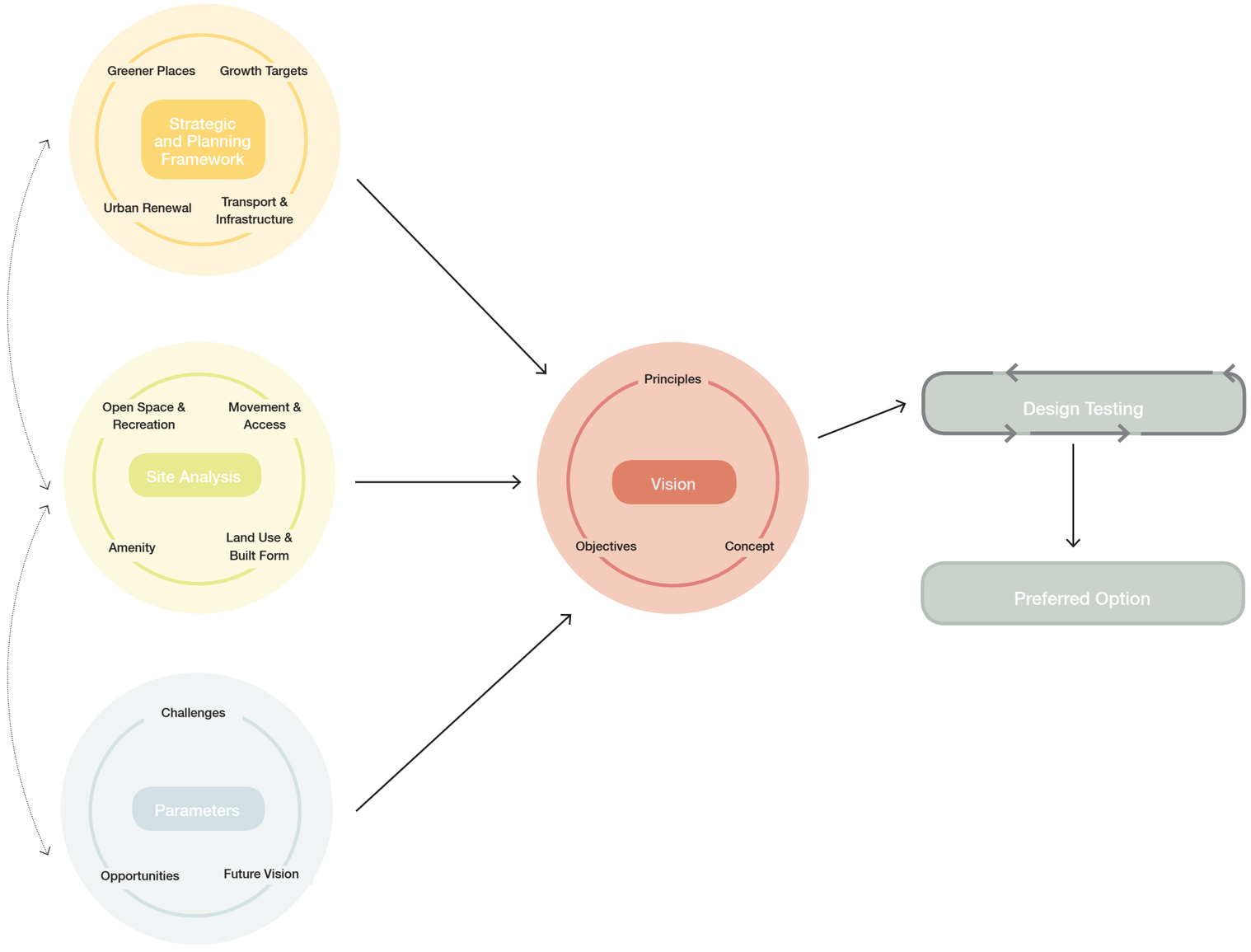
This study is supported by an open space needs analysis to better understand the provision, accessibility and quality of open spaces within and surrounding the Wolli Creek Town Centre. This analysis has been benchmarked against the Government Architecture NSW's *Greener Places* and *Open Space for Recreation* (OSFR) Guide, which sets out performance criteria for the analysis of the existing and potential future provision of open space within a given area.

Analysis and site testing within this report has provided opportunities to:

- align the scale, configuration and quality of open space to principles set out in *Greener Places*
- provide a local park of as outlined in the OSFR Guide
- deliver complementary community uses within the park tailored to the existing and projected demographic
- support increased pedestrian connectivity, activation and safety of the park through provision of complementary land use
- identify the optimal development outcome that also enables the above to occur unencumbered

Better Placed, released in May 2017 by the Government Architect NSW (GANSW) is a state policy which provides guidance for quality design of our built environments. This document as well as the Apartment Design Guide, underpins built form testing within this study.

This urban design study is supported by research and findings from SGS on open space and community needs and Hill PDA on retail/commercial demand.



Report Structure

1.2 Greener Places - GANSW

Greener Places

Greener Places is an urban green infrastructure state policy released in draft by the Government Architect New South Wales (GANSW) in November 2017. This policy underpins open space analysis and testing within this report.

The policy establishes a framework to realise the following key green infrastructure objectives:

- To protect, conserve and enhance NSW's network of green and open natural and cultural spaces
- To secure a network of high quality, high performing and well-designed green space, establishing a crucial component of urban infrastructure to address the environmental challenges of the twenty-first century
- To promote healthy living, encouraging physical activity, social cohesion, and enhancing wellbeing by providing liveable places for the NSW community
- To create a more strategic approach to planning for Green Infrastructure, encouraging early and integrated investment through statutory planning
- To deliver better tools for the delivery of Green Infrastructure across NSW

Open Space for Recreation (OSFR) Guide

The draft *Open Space for Recreation Guide (OSFR)* is a supporting document that facilitates the implementation of the Greener Places policy. Released in July 2018, the guide was intended to be used by industry professionals, private developers and government bodies in the preparation of strategic plans and architectural or urban design projects.

The guide proposes a new approach to the analysis and delivery of open space that is relevant to the current and anticipated future urban landscape for New South Wales. In particular, the document responds to the challenges of increasing density and decreasing land supply through a performance-based, as opposed to quantum-based approach.

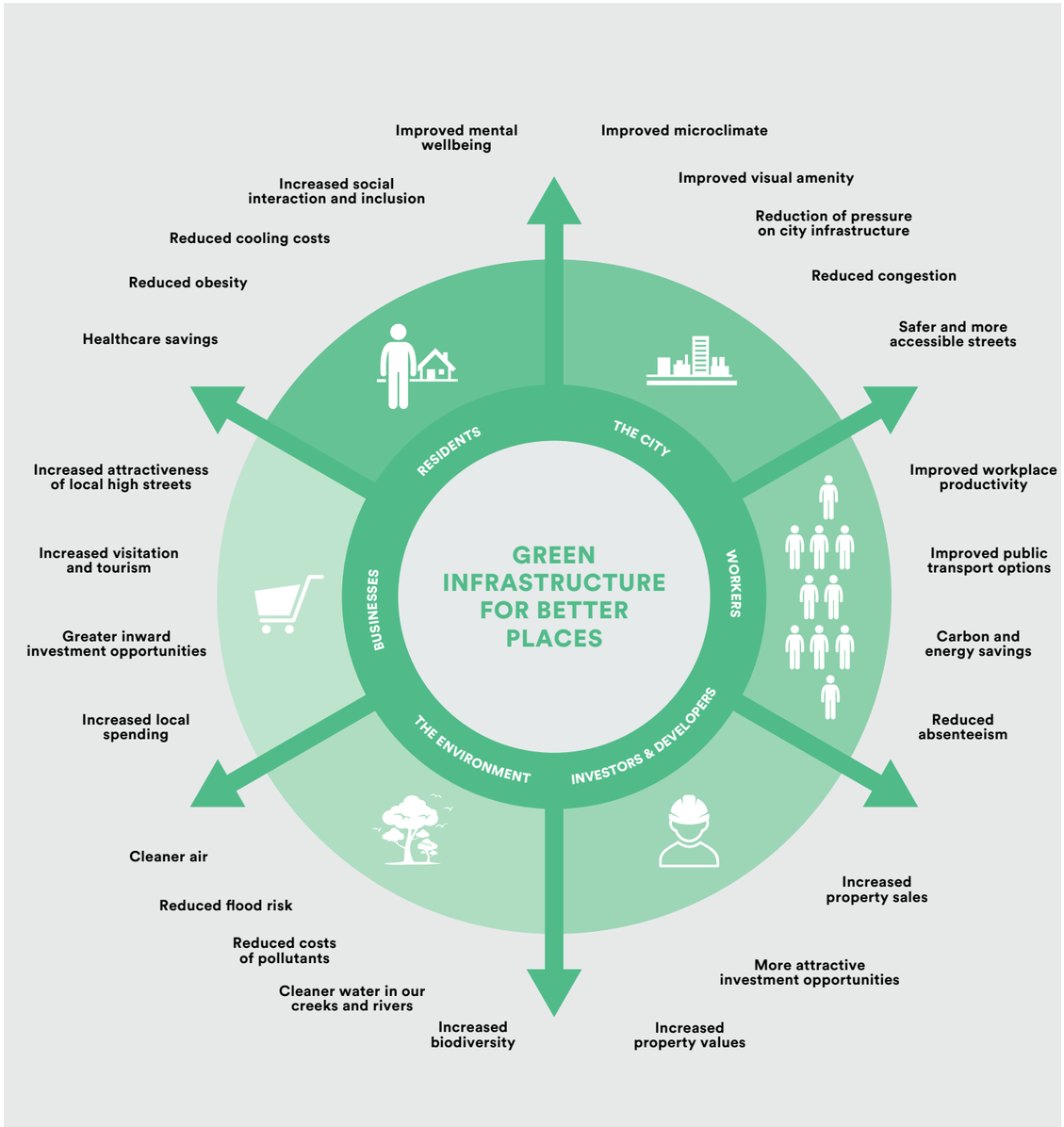


Figure 01: Who Benefits from Green Infrastructure? - *Greener Places*, p.19

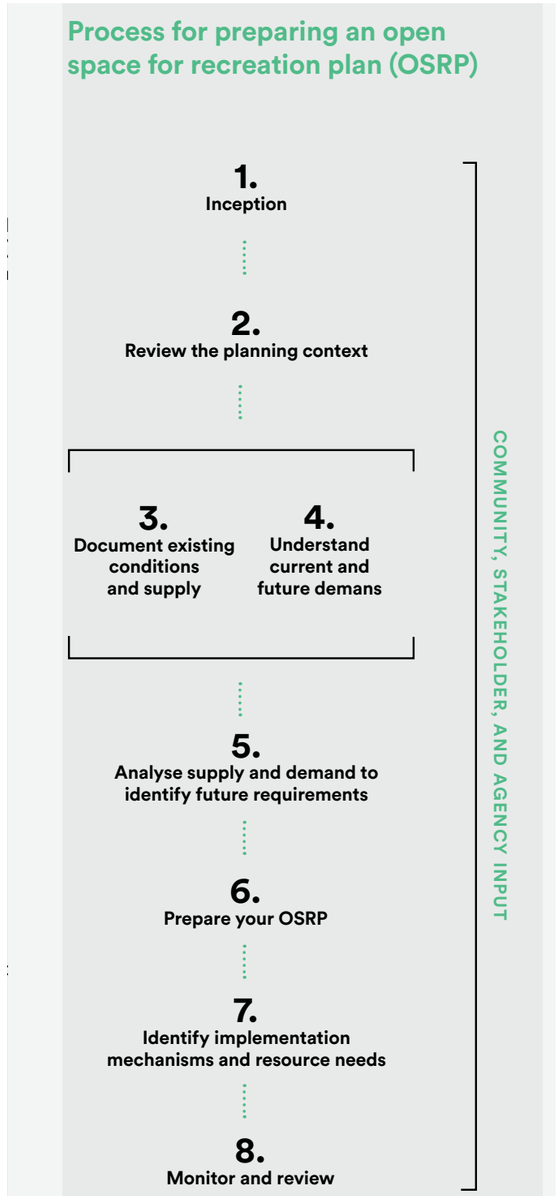


Figure 02: Process for preparing an open space for recreation plan - *OSFR Guide*, p.9

Project Background

OSFR Performance Criteria

The OSFR Guide outlines the typical process for preparing an open space for recreation plan, involving the analysis of the existing and potential future provision open space within a given area. This is assessed against performance criteria relating to accessibility and connectivity, distribution, size and shape, quantity, quality, and diversity. Each criteria has a set of performance indicators that are tailored to different development scenarios, ranging from greenfield to high density areas. These benchmarks have been included in Action 67 of the Greater Sydney Commission's (GSC) Eastern City District Plan.

The open space performance criteria summarised opposite are provided in the OSFR Guide. A set of performance indicators is provided for each criteria, focusing on the requirements for high density areas (>60-100 dwellings/ hectare), which is most relevant for the immediate site context.

These performance indicators have been used to assess the existing open space conditions for the site and surrounding context in the following chapter of this report.

Accessibility and Connectivity

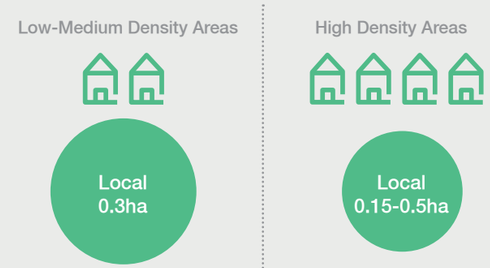
- **For high density areas, residents must be within 2-3 minutes/200m walking distance to a local, district or regional park**
- For medium density areas, residents must be within 5 minutes/400m walking distance

Distribution

- **For high density areas, residents must be within 2-3 minutes walk/200m of local open space**
- For medium density areas, residents must be within 5 minutes walk/400m of local open space
- Residents must be within 25 minutes walk/2km of disrict open space
- Residents must be within 30 minutes travel/5-10km to regional open space
- Workplaces must be within 400m of open space
- Schools must be within 400m of open space

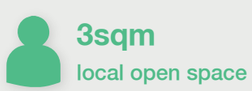
Size and Shape

- **Desirable minimum size of a local park is 0.3ha**
- **Local open space: 0.15-0.5ha for high density areas**
- Consider specifc size/shape requirments for sporting facilities



Quantity

- Quantity refers to the capacity of open space, meaning the quantum in relation to the population density within the access catchment.
- While the capacity of open space is important, other factors such as the quality and diversity of open space should also be considered.
- The World Health Organisation (WHO) states that on average, a **minimum of 9 sqm of accessible open space should be provided per person.**
- **An average of 3 sqm of accessible local open space should be provided per person**
- **An average of 11sqm of accessible district open space should be provided per person**



Quality

Key characteristics that may influence the quality of open space include:

- visual and physical access
- landscape setting
- condition of facilities and equipment
- maintenance
- number of activation within the space
- size, shape and topography
- adjacent land uses
- amount of vegetation
- biodiversity outcomes

Diversity

The diversity of open space is determined by the types of recreation opportunities available. These are categorised as:

- local play for the very young
- local children's play
- youth recreation space
- local recreation space
- active recreation space
- large community outdoor recreation area
- fitness and exercise space
- trail and path-based recreation
- off-leash dog exercise area

1.3 Better Placed - Government Architect NSW

Better Placed is “an integrated design policy for the built environment of NSW”. Released in May 2017 by the Government Architect NSW (GANSW), the state policy provides guidance for quality design of our urban environments. This policy underpins built form testing within this report.

The document identifies the key priorities for NSW that future design should respond to. These include challenges in relation to climate resilience, rapid population growth, health, changing lifestyles and demographics, infrastructure and urban renewal and the delivery of major projects.

The document emphasizes the importance of good design processes to generate quality design outcomes. The key phases of the iterative design process are shown in Figure 12 and are identified as:

1. ***Discover*** *- define/involve/research*
2. ***Create*** *- explore possibilities/synthesise/develop ideas*
3. ***Deliver*** *- prototype/evaluate/implement*

The *Better Placed* policy is underpinned by seven objectives that outline the key design considerations for the built environment of NSW:

1. ***Better fit*** *- contextual, local and of its place*
2. ***Better performance*** *- sustainable, adaptable and durable*
3. ***Better for community*** *- inclusive, connected and diverse*
4. ***Better for people*** *- safe, comfortable and liveable*
5. ***Better working*** *- functional, efficient and fit for purpose*
6. ***Better value*** *- creating and adding value*
7. ***Better look and fee****l - engaging, inviting and attractive*

The design approach undertaken in this study has been informed by the key priorities and design considerations outlined in the *Better Placed* document.

Urban Design Guide

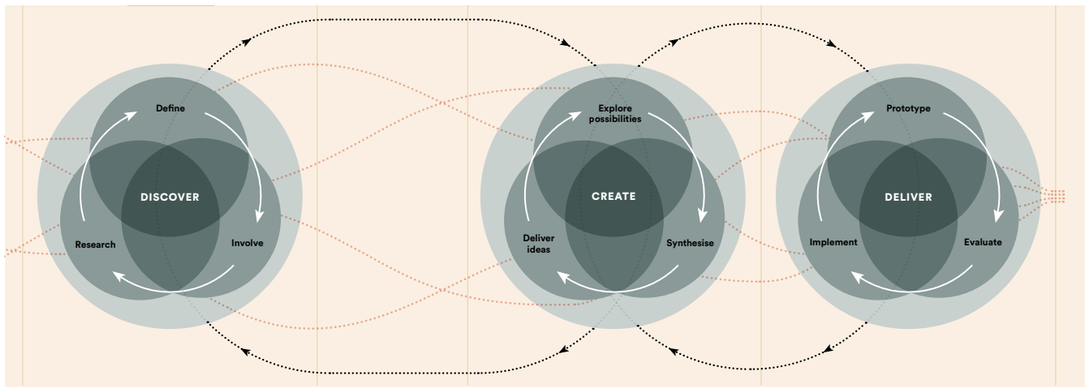
The draft *Urban Design Guide i*s a supporting document that facilitates the implementation of the *Better Placed* policy. The document was released in draft by GANSW in 2018. The document provides detailed information and guidance in relation to the role, process and delivery of urban design.

The guide outlines key values that together, define a well-designed urban environment. These should dictate the approach and priorities for urban design projects and are listed as the following:

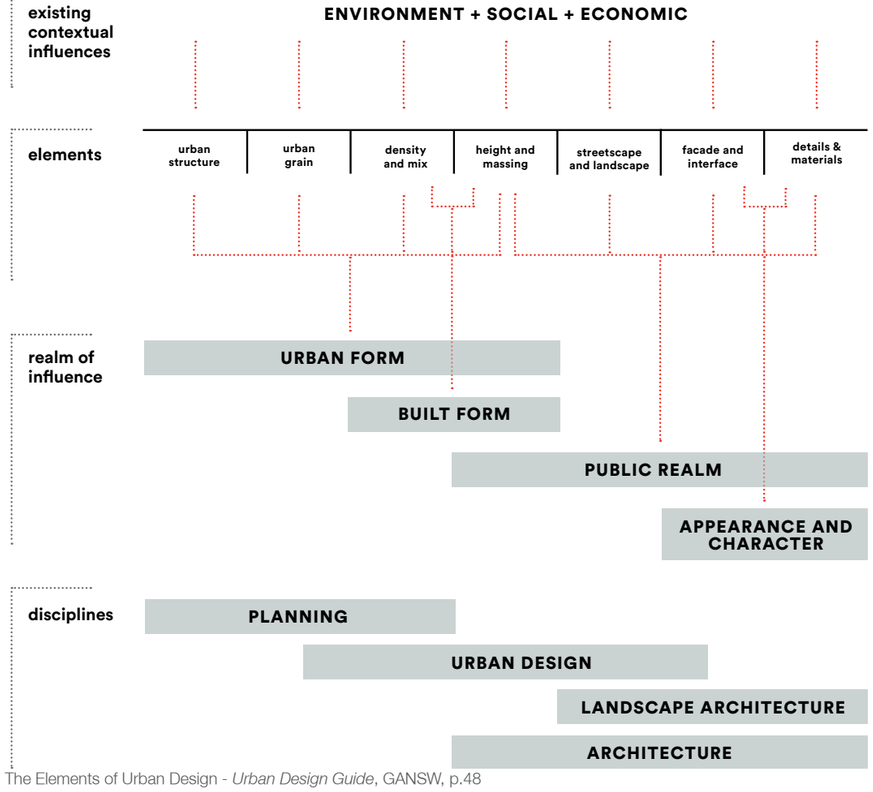
- ***A Healthy Environment***
- ***A Responsive Environment***
- ***An Integrated Environment***
- ***A Resilient Environment***
- ***An Equitable Environment***

The document provides key urban design considerations, according to site context, condition, project scope and scale. These are largely informed by the core elements of urban design, which are associated with different aspects of the urban environment. These urban design elements and interwoven themes are identified in the diagram opposite.

The key learnings from this guide have been applied to the analysis and design concept phases presented in the following sections of this report.



Design Process - *Better Placed*, GANSW, p.28-29



The Elements of Urban Design - *Urban Design Guide*, GANSW, p.48

Introduction

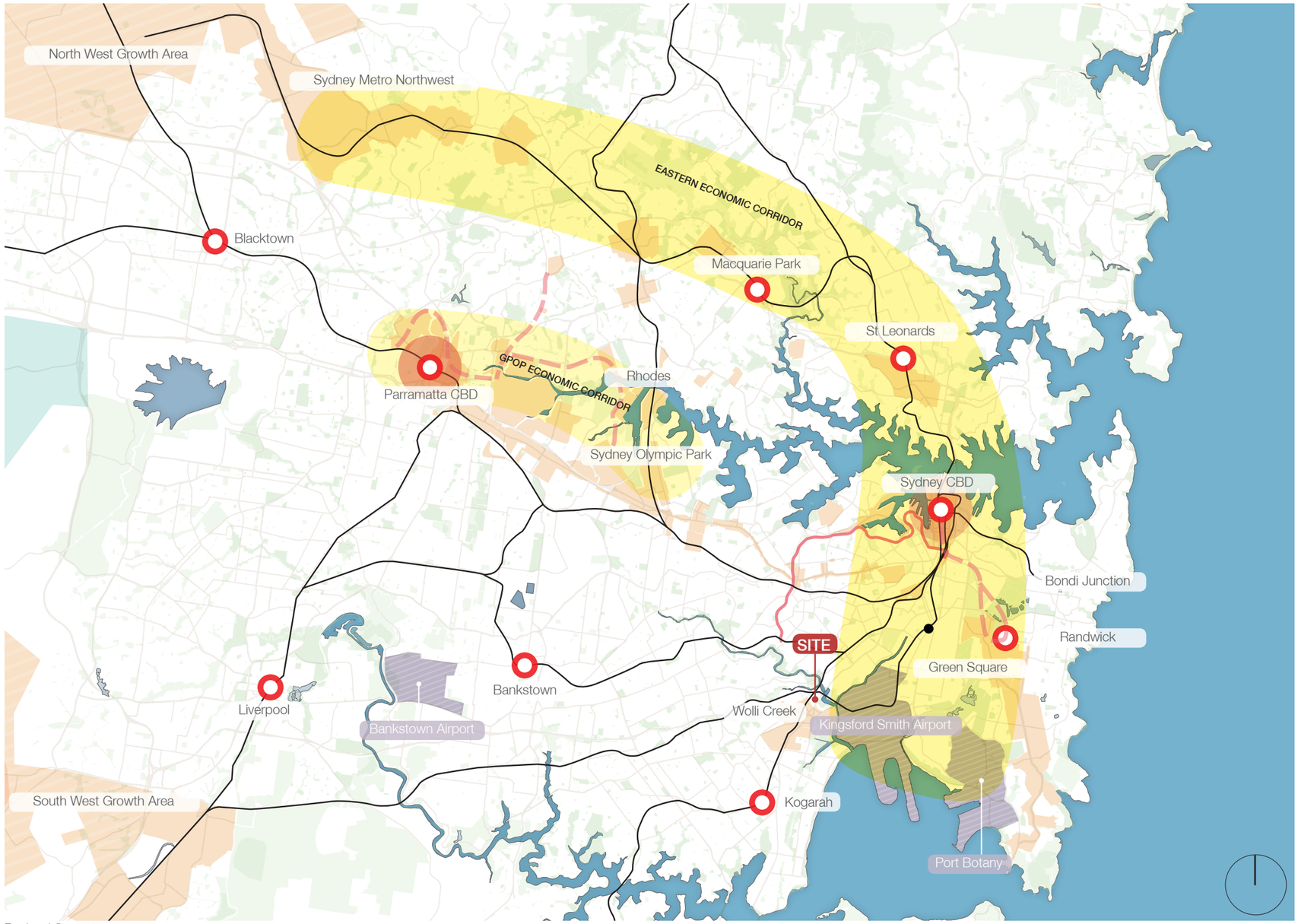
2

2.1 Regional Context

The site is located in Wolli Creek in Sydney's south-east region. The site is situated between Green Square and Kogarah, identified as strategic centres in the *Greater Sydney Region Plan - a Metropolis of The Cities*, released by the Greater Sydney Commission (GSC) in 2018. Sydney CBD Metropolitan Centre is located approximately 10km from the site.

Wolli Creek is well-connected to other major centres via the existing rail network located in close proximity to the site. An established road network provides direct access via the Princes Highway and M5 Motorway to Port Botany, Sydney CBD and south western and eastern Sydney.

A number of significant activity areas are located in proximity to the site. Located directly east of the site, the Eastern Economic Corridor is the primary focal area for employment and economic productivity for the Sydney Region. Kingsford Smith Airport is located to the south-east and an urban renewal area directly to the south of the site. The Bayside West Precincts 2036 study area established by the NSW Department of Planning and Environment, includes areas identified for urban renewal in Arncliffe and Banksia.



Regional Context

Key

- Metropolitan Centre (GSC)
- Health and Education Precinct (GSC)
- Rail and Metro
- Light Rail
- Proposed Light Rail
- Urban Renewal Areas
- Growth Areas
- Western Sydney Priority Growth Area Precinct
- Eastern Economic Corridor
- GPOP Economic Corridor
- Transport and Intermodal Hubs

2.2 Bayside West Precincts 2036

The site is located to the north of the Bayside West Precincts 2036 study area, nominated by the NSW Department of Planning and Environment. Situated along the existing rail corridor, the Plan extends across the suburbs of Arncliffe, Banksia and Cooks Cove.

The precincts are identified as an opportunity for urban renewal to provide additional open space, jobs, housing and infrastructure in a well-connected area. The *Bayside West 2036 Precincts Plan*, released in August 2018, sets out strategic planning objectives for the area to guide this transformation. These objectives will be implemented primarily through future changes to planning controls. Some amendments to controls have already been implemented for the areas of Arncliffe and Banksia to the east of the train line.

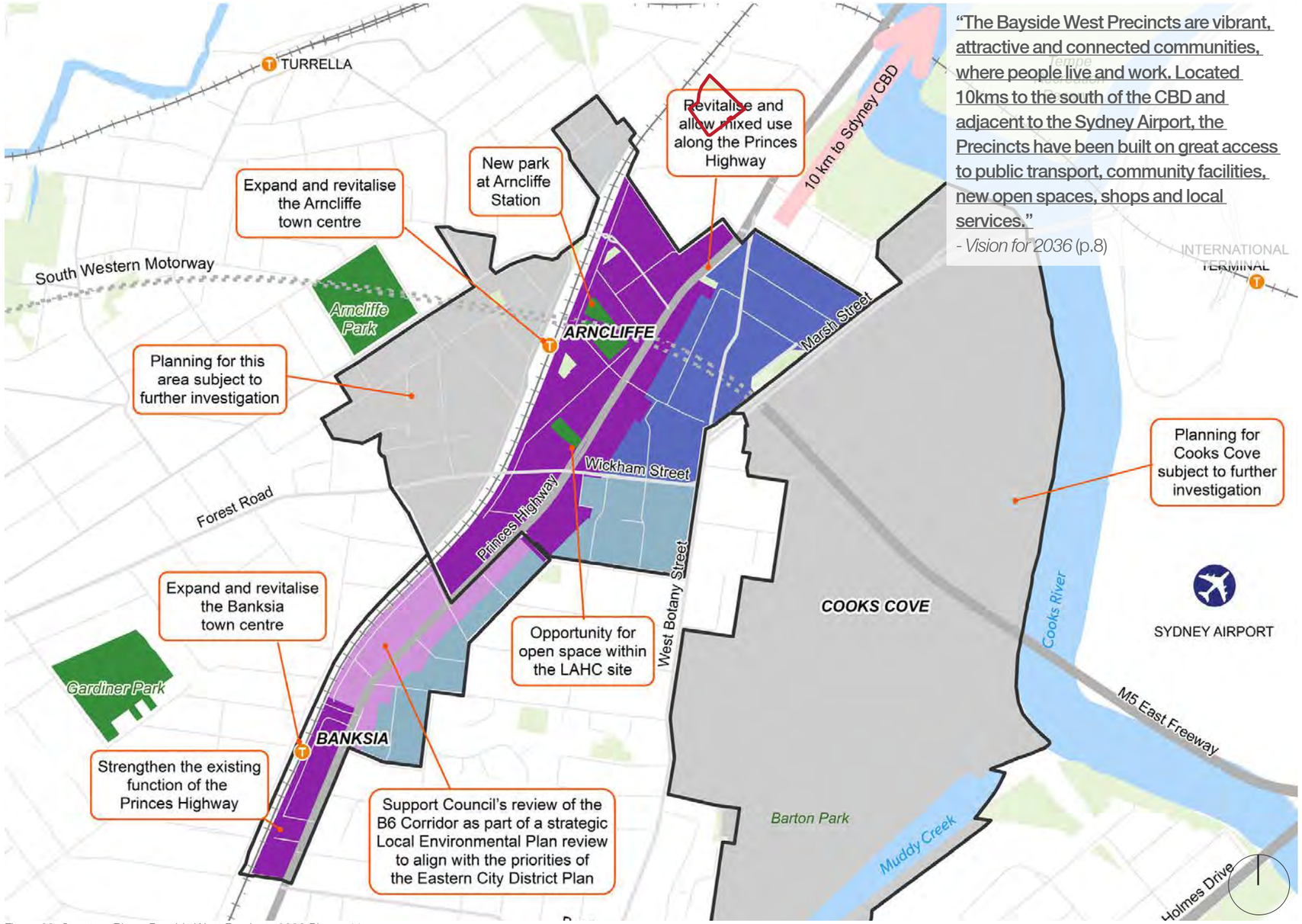
In response to the growth targets outlined in the GSC's Greater Sydney Region Plan, the Bayside West Precinct Plan aims to provide for approximately 5,000 additional dwellings by 2036. The Plan also proposes to increase commercial and mixed use activity in order to improve employment opportunities within the area. This includes the revitalisation of the B6 Corridor along the Princes Highway, currently under review by Council.

The Plan includes recommendations for improved accessibility within the area through enhanced public and active transport connections, as well as upgrades to existing vehicular links. New green open space, in addition to upgrades of existing parks, are also proposed to support the desired growth.

Overall, the *Precincts Plan* focuses on the delivery of development that is well-connected, place-oriented, has a high level of amenity and responds to existing and future community needs.

Key

- Site Boundary
- High density housing with mixed use opportunities
- High density housing
- Medium and low density housing
- Employment corridor
- Train Station
- New open space and open space areas to be upgraded



"The Bayside West Precincts are vibrant, attractive and connected communities, where people live and work. Located 10kms to the south of the CBD and adjacent to the Sydney Airport, the Precincts have been built on great access to public transport, community facilities, new open spaces, shops and local services."

- Vision for 2036 (p.8)

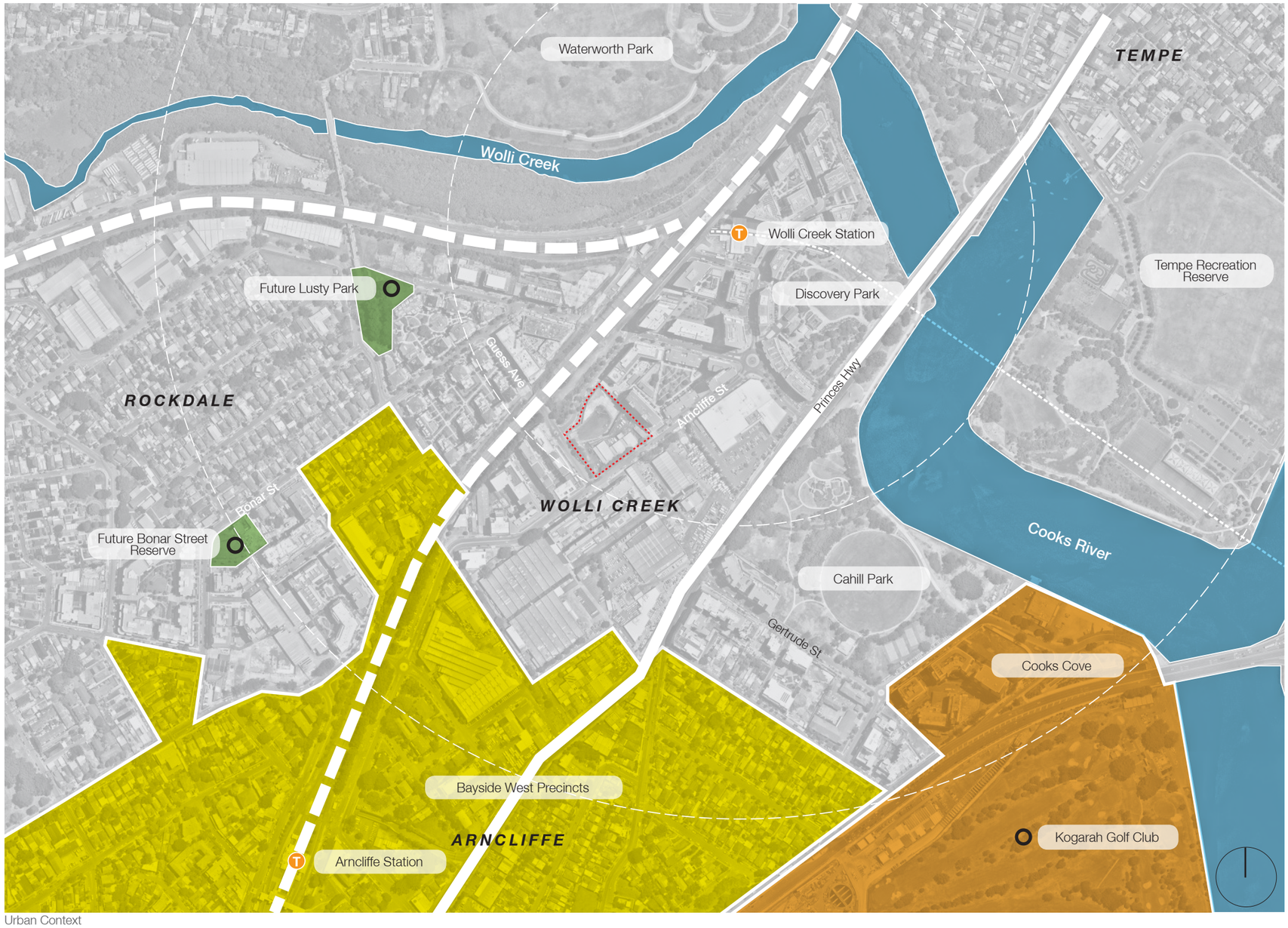
Figure 03: Structure Plan - *Bayside West Precincts 2036 Plan,* p.11

2.3 Urban Context

The site is located 400m south-west of Wolli Creek Station on a site bordered by Arncliffe Street, Guess Avenue and Mount Olympus Boulevard. Wolli Creek is an area of transformation, with a mix of high density mixed-use and residential buildings and industrial uses that are generally concentrated between Arncliffe Street and Princes Highway.

To the north of the site is the rail corridor, the north-east Wolli Creek and the Cooks River and to the south-east, the Princes Highway. These are significant barriers to movement and limit accessibility to regionally significant open space and sporting facilties: Cahill Park, Tempe Recreation Reserve and Waterworth Park.

The site is located to the north of the Bayside West Precincts, highlighted by the NSW Department of Planning and Environment as a key area for targeted redevelopment and revitalisation.



Urban Context

2.4 Site Context

The site has three street frontages to Arncliffe Street, Guess Avenue and Mount Olympus Boulevard. There are a number of established trees along the Guess Avenue and Arncliffe St frontages.

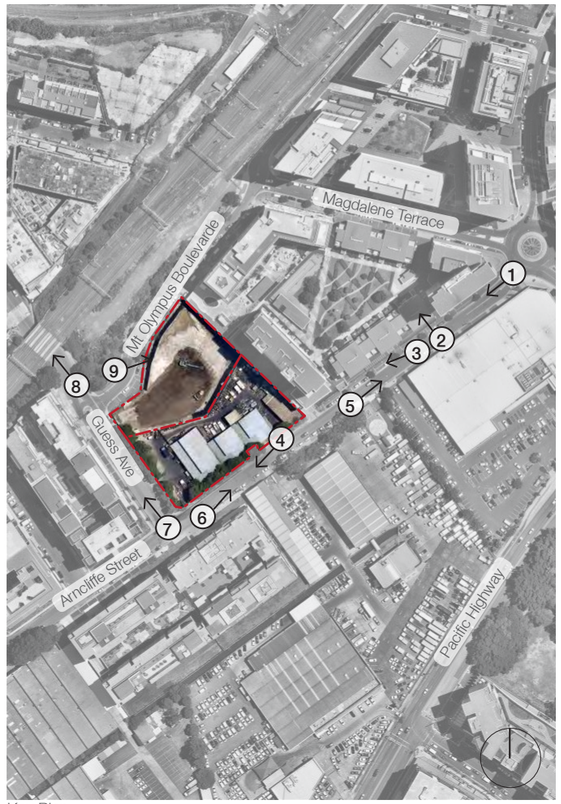
To the site's north-west is the rail corridor and adjacent lands which sit above the level of the site. To the site's north east are two buildings which present multi-storey blank facades to the boundary. The residential building located at 35B Arncliffe St is 15 storeys high, overshadowing and providing views into the subject site. To the site's south-east along Arncliffe St is an industrial freight depot and 8-storey residential building. To the sites south-west are several residential buildings, recently completed and under construction.

The site is made up of two lots; Lots 102 and 101, DP 808944. Lots 102 (the northern portion of the site) has been subject to recently completed site remediation works by Property NSW. Vehicular access to the site is off Guess Avenue, adjacent to the roundabout.

Lot 101 currently houses as a truck repair warehouse accessed off Guess Avenue and Arncliffe Street. There is a small retaining wall along the Arncliffe Street frontage. The notch along the site's south-east boundary is formed around an electrical substation.

Site Context

2.5 Site Photos



Key Plan


Figure 04: Arncliffe Street looking south from Magdalene Terrace intersection

Figure 05: Through-site link to public square from Arncliffe Street


Figure 06: View south down Arncliffe Street to recent mixed use development


Figure 07: View of industrial and residential sites across site on Arncliffe Street


Figure 08: View north down Arncliffe Street towards Wolli Creek Town Centre


Figure 09: View of site looking north down Arncliffe Street


Figure 10: View north-west down Guess Avenue from Arncliffe Street


Figure 11: Rail overpass along Guess Avenue


Figure 12: View looking south across site and adjacent development from Olympus Boulevarde

2.6 Rockdale Local Environmental Plan 2011

The key statutory planning controls for the site are outlined in the Rockdale Local Environmental Plan 2011 and are summarised below.

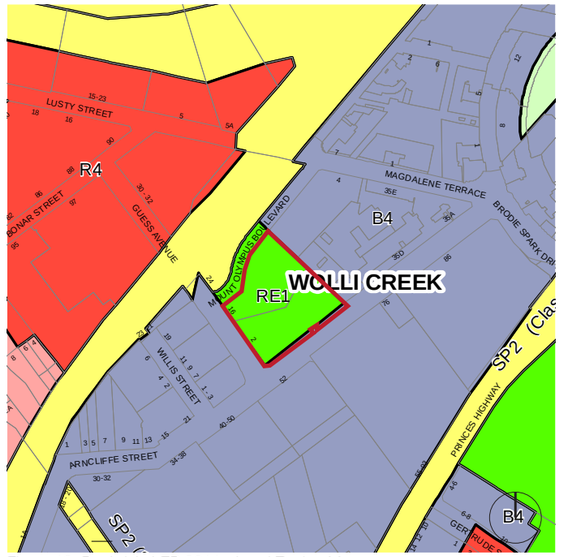


Figure 13: Rockdale LEP 2011 - Land Zoning Map

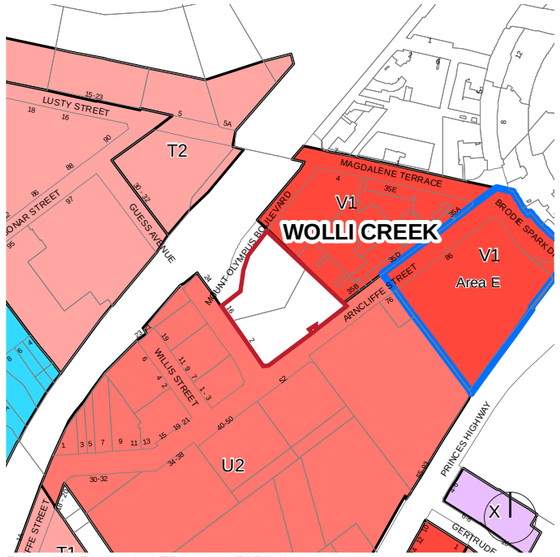


Figure 14: Rockdale LEP 2011 - FSR Map

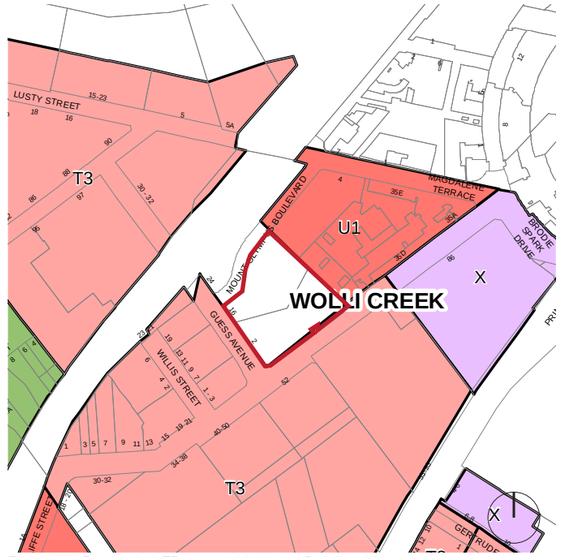


Figure 15: Rockdale LEP 2011 - Height of Building Map

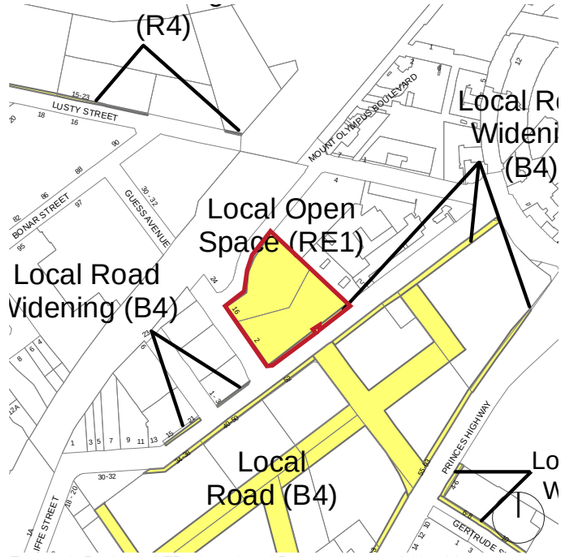


Figure 16: Rockdale LEP 2011 - Land Reservation Acquisition Map

Zone

- B1 Neighbourhood Centre
- B2 Local Centre
- B4 Mixed Use
- B6 Enterprise Corridor
- IN2 Light Industrial
- R2 Low Density Residential
- R3 Medium Density Residential
- R4 High Density Residential
- RE1 Public Recreation
- RE2 Private Recreation
- RU4 Primary Production Small Lots
- SP2 Infrastructure
- SP3 Tourist
- UL Unzoned Land
- SREP33 Sydney Regional Environmental Plan No 33 - Cooks Cove

Maximum Floor Space Ratio (n:1)

D	0.5	V2	3.1
F	0.6	V3	3.4
N	1	W	3.93
P1	1.25	X	4
P2	1.26		Refer to Clause 4.4
S1	1.5		
S2	1.65		
S3	1.8		
T1	2		
T2	2.2		
T3	2.4		
U1	2.5		
U2	2.85		
V1	3		

Note: There is currently no FSR control designated for the subject site.

Maximum Building Height (m)

I	8.5	T1	26.5
M	12	T2	27
N1	13	T3	28
N2	14.5	T4	29
O1	15	T5	29.5
O2	16	U1	31
P1	17.5	U2	33
P2	17.75	V	36
P3	18	W	42
Q1	19	X	46
Q2	20.5	X2	47.15
R1	21	Y	51
R2	22	AA	70
S	24		Refer to Clause 4.3

Note: There is currently no height control designated for the subject site.

- Classified Road (SP2)
- Local Open Space (RE1)
- Local Open Space (Arncliffe) (RE1)
- Local Road (B2)
- Local Road (B4)
- Local Road (R2)
- Local Road (R3)
- Local Road (R4)
- Local Road Widening (B2)
- Local Road Widening (B4)
- Local Road Widening (R2)
- Local Road Widening (R3)
- Local Road Widening (R4)
- Local Road Widening (SP2)
- Car Park (B4)
- Car Park (R2)
- Regional Open Space (RE1)
- School (R2)
- School (SP2)
- Stormwater (SP2)

2.7 Rockdale Development Control Plan 2011

Adopted in May 2011, the *Rockdale Development Control Plan 2011* (Rockdale DCP) specified planning controls and objectives within the local area.

The subject site is located within the Wolli Creek Special Precinct, identified in Part 7, Section 7.1 Wolli Creek. The section provides planning provisions for future development, underpinned by an overarching vision and set of objectives for the area. The Structure Plan for Wolli Creek, shown opposite, illustrates the key principles guiding future development in the area.

Under its current RE1 LEP land use zoning, the site is identified as a 'town park'. Adjacent uses include mixed use, with mandated retail or commercial ground floors, as well as high density residential uses located across the railway line to the north-west. Non-residential uses and civic spaces are focused around the railway station in the north.

The built form controls specify an 8 storey street wall and 2m street setback along Mount Olympus Boulevard the on the area adjacent to the north of the site. A 3m street setback is identified along Guess Avenue frontage of the block across the site to the south.

A number of public domain and infrastructure projects are proposed. These include the pedestrianisation of some streets and the addition of new roads, to facilitate movement and access through the precinct. A green link runs along the site's south eastern and western boundary, extended in parts to provide continuous pedestrian and cycle connections between open space.

The DCP also notes that future development within flood-affected parts of Wolli Creek should consider flood impact mitigation strategies including elevated ground floor levels, the location of sensitive uses and equitable accessibility configurations.

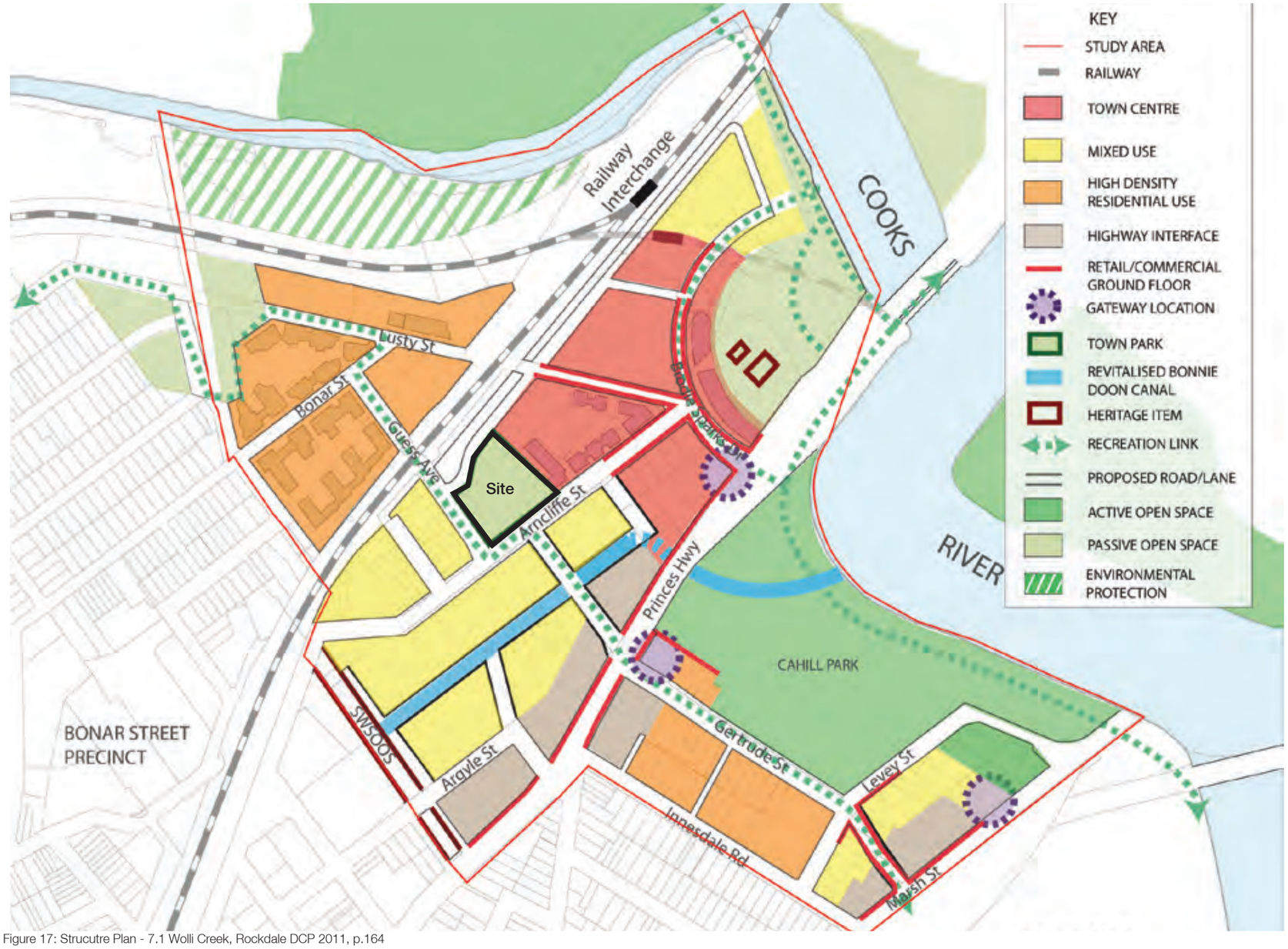


Figure 17: Strucutre Plan - 7.1 Wolli Creek, Rockdale DCP 2011, p.164

2.8 Wolli Creek and Bonar Street Public Domain Plan

The Wolli Creek and Bonar Street Public Domain Plan was prepared in 2011 by JiLA on behalf of a previous Rockdale Council to inform the renewal of public domain which would support a future transformation of the industrial precinct to a “high quality, high density urban environment”(p3).

The document is “intended to guide and coordinate the design and construction of improvements to the public domain of Wolli Creek and Bonar Street precinct. It identified opportunities for enhancement potential for provision of more pedestrian space” (p3). 2&4 Guess Avenue is outlined as one of two potential locations for a town park. It is described as a “Green space as relief from high density new development [with a] strong relationship with commercial character of Arncliffe Street and surrounding mixed use buildings” (p22).

The report highlights a number of principles to inform the design of the park:

- Surrounding buildings shall take advantage of the outlook by addressing and opening up to public space to provide passive surveillance
- A designated children’s play area located towards the centre of the site provides a fenced and sheltered zone for children within the park
- The park shall include amenities for park including seating and shelter. This space can also accommodate a meeting point along Arncliffe Street
- Water Sensitive Urban Design (WSUD) principles are to be implemented. Opportunities include a swale down the centre of the park to relate to the movement of water on the surrounding micro catchment of streets. The central swale is to be incorporated in the stormwater management system as a temporary detention basin to address flooding in the area
- Open space shall provide areas of refuge for passive use defined through planting
- Maintain sight lines to surrounding streets and pedestrian crossing through a comprehensive network of access paths and the implementation of CPTED principles
- A variety of spaces within the park shall be defined with level changes, raised seating walls, terraced grass areas and swales, and planted terraces along development boundary to mediate level changes to existing buildings. These level changes are to be designed to ensure that CPTED principles are implemented and disabled access to a minimum standard of AS1428.1 design for access and mobility

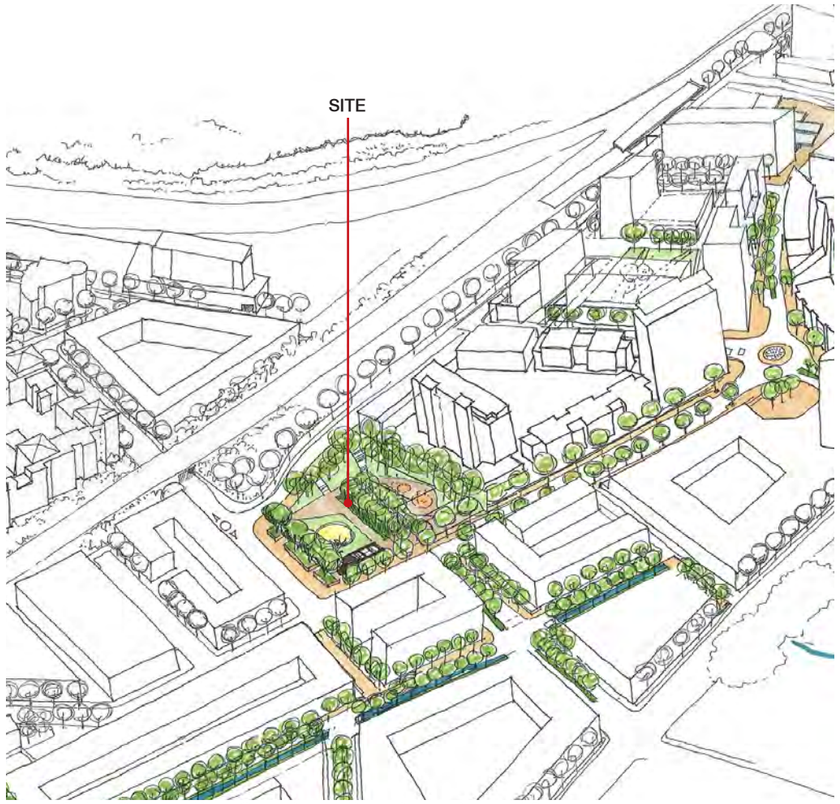


Figure 18: Wolli Creek and Bonar Street Precinct Public Domain Plan (Fig 1.3)

Figure 19: Town Park Indicative Concept Plan Wolli Creek and Bonar Street Precinct Public Domain Plan (Fig 2.2)

Site and Context Analysis

3

3.1 Open Space and Recreation

Wolli Creek Town Centre is currently serviced by a number of local and regional open spaces which support open passive/ active recreation and organised sport. These space located within 800m of the site include:

1. Waterworth Park
2. Kendrick Park
3. Tempe Recreational Reserve
4. Cahill Park
5. Discovery Park
6. Ajax Reserve
7. Allen Street Reserve
8. Ray Oxford Reserve and Walker Street Reserve

A number of these spaces including, Kendrick Park and Tempe Recreational Reserve have low accessibility from Wolli Creek due to the physical barriers of Wolli Creek, Cooks River, the rail corridor and Princes Highway. Spaces within 400m of the subject site will be included in the open space analysis benchmarked against the OSFR Guide.

There are two privately owned-publicly accessible spaces to the site's north-east including:
9. Village Square Park
10. Village Square 2

Village Square Park is not included within benchmarking due to poor accessibility and limited visibility from the street.

Three proposed open spaces sit to the west of the site Lusty Street Reserve and Bonar Street Reserve to the north of the rail corridor, and a new Park adjacent to Arncliffe Station.

Key

- Site boundary
- Train line
- Railway crossing
- Major road
- Existing open space
- Proposed open space
- Privately-owned, publicly accessible open space
- Signalised crossing
- Children's play
- Recreational/sporting facilities
- Passive open space
- On-site parking

Open Space and Recreation - High Level Analysis

3.2 Proposed Parks

Lusty Street Reserve

The principles and indicative concept plan for the Lusty Street Reserve is outlined within the *Wolli Creek and Bonar Street Precinct Public Domain Plan* (Rockdale Council, 2011). Within that document is noted as the Thomas Street Reserve, a local park to "function as a recreational open space as Water Sensitive Urban Design (WSUD) treatment site for surrounding high density development" (p.47). It is located near the existing Ray Oxford Reserve and Walker Reserve on the western edge of Thompson Street.

The key design principles for this space includes:

- Access views over surrounding area from top of heritage stormwater aqueduct
- As the lower part of the site is a critical point for micro catchment stormwater treatment before it reaches Wolli Creek's Environmental Protection Zone, establish a detention basin and wetland biofiltration system integrated with the overall storwmater strategy. Additionally, a flood/ risk management plan should be prepared
- Extend the play space in Walker Street reserve across Thomas street to the heritage stormwater aqueduct with an emphasis on free play over equipment
- Provide open grassed area suitable for informal games on Ray Oxford Reserve
- Backfill along existing development on corner of Lusty Street and Thompson Street to meet the existing reserve level, and provide secure access from internal courtyard to the reserve
- The heritage aqueduct provides distinctive character to the site as a heritage feature and point of orientation within the district. A strong link between the three reserves should be provided. This should be achieved through planting, pathways, lighting and signage
- Create viewing platform on top of the existing aqueduct hardstand if feasible
- Incorporate stormwater management system including detention and a flood management strategy

Thompson Street Park Indicative Concept Plan, Wolli Creek and Bonar Street Precinct Public Domain Plan, 2011 (p.50)

Bonar Street Community Park

The principles and indicative concept plan for the Bonar Street Community Park is outlined within the *Wolli Creek and Bonar Street Precinct Public Domain Plan* (Rockdale Council, 2011). It is noted as "a local park for the surrounding residential area and specifically for the new high density residential development within the Bonar Street Precinct...It provides a meeting point between the existing residential area and the new residential development"(p.53)

It is also highlighted to provide a new north/south and east/ west pedestrian connections and provide better visual access from Bonar Street to a new road immediately south.

The key design principles for this spaces includes:

- The community park should maintain clear and open sight lines and reinforce legibility of the public thoroughfare from the park to internal access roads.
- The eastern area of the park is to remain primarily open to enable use for informal recreation. It is to include seating and children's playground in areas that are under passive visual surveillance from residential buildings.
- The western section of the park is to include grouped tree and understorey planting with seating areas to establish a shaded passive open space zone.

Bonar Street Reserve Indicative Concept Plan, Wolli Creek and Bonar Street Precinct Public Domain Plan, 2011 (p.54)

3.3 Open Space and Recreation - High Level Analysis

The open space analysis highlights that residential areas to the west and south-west of the subject site are not located within 2-3 minutes/200m walking distance of a local, district or regional park, the accessibility and connectivity target set for high density areas within the OSFR Guide. There is a need to provide some component of local open space on the subject site.

As the OSFR guide sets targets local open space between 0.15-0.5Ha for high density areas (>60-100 dwellings/ hectare), there remains an opportunity to deliver a local park alongside other complementary uses including residential and commercial uses.

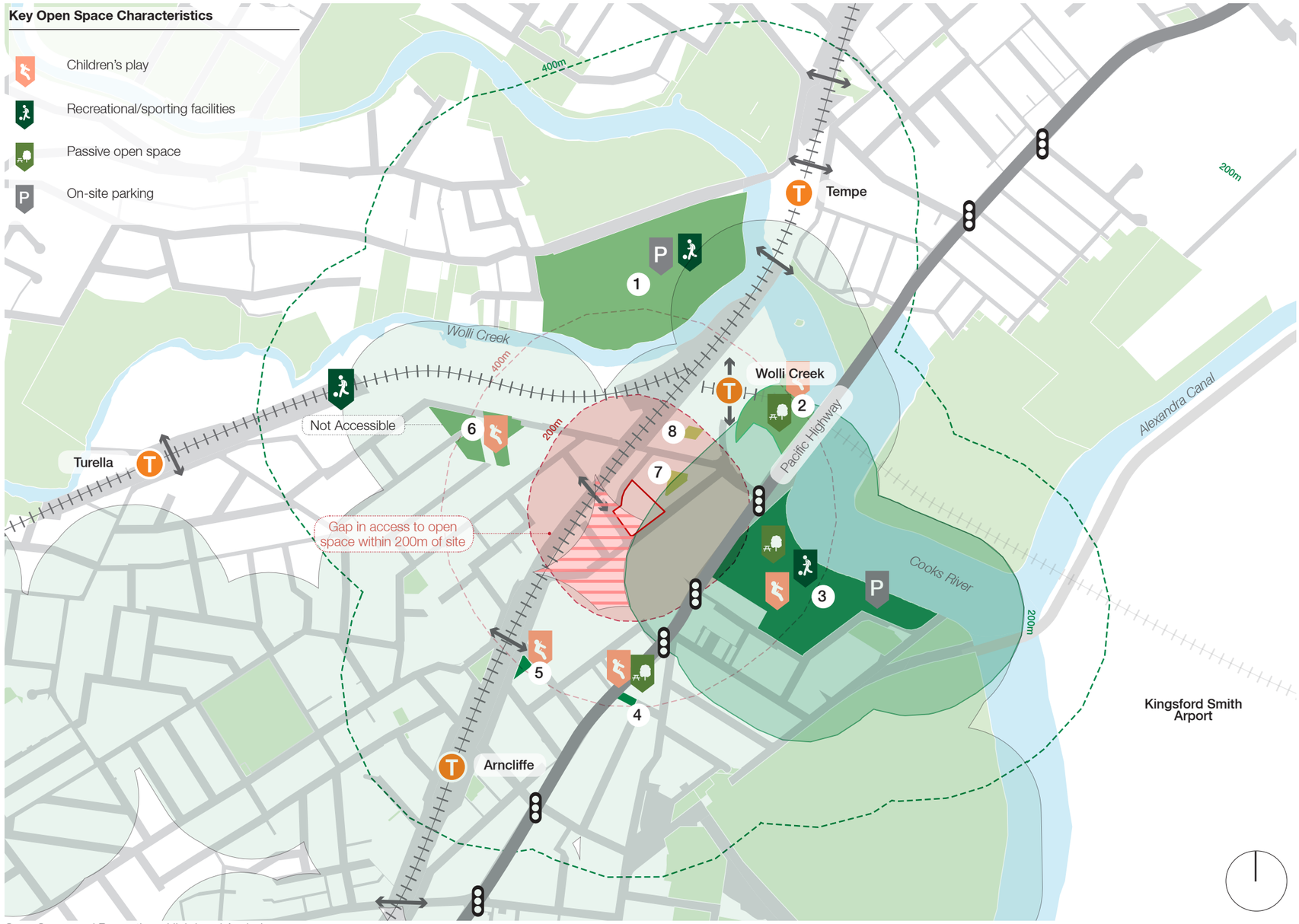
These parks are located within 400m of the site:
1. Waterworth Park
2. Discovery Park
3. Cahill Park
4. Ajax Reserve
5. Allen Street Reserve
6. Ray Oxford Reserve, Walker Reserve and Lusty Street Reserve

There are two privately owned-publicly accessible spaces to the site's north-east, including:
7. Village Square Park
8. Village Square 2

Village Square Park is not included within benchmarking due to poor accessibility and limited visibility from the street.

Key

- Site boundary
- Train line
- Railway crossing
- Major Road
- Signalised crossing
- 200m site catchment
- 400m site catchment
- 200m open space catchment
- 400m open space catchment
- Open space within 200m of site
- Open space within 400m of site
- Open space further than 400m from site
- Privately-owned, publicly accessible open space
- 200m access gap



Open Space and Recreation - High Level Analysis

3.4 Open Space and Recreation - Detailed Analysis

Within a 200m catchment of the site is limited public open space. There are, however, two pieces of publicly accessible privately owned open space which is either poorly connected or highly transactional. Increased pedestrian connectivity through the site should also be considered due to the limited opportunities to traverse the large block.

Key Open Space Characteristics

- Children's play
- Informal Recreation
- Sporting Fields
- Barbecue Facilities
- Seating
- Public Toilet
- On-site parking
- Swimming Pool - Private
- Gym Facilities - Private
- Educational Facility
- Cultural Building / Community Venue

Key

- Site boundary
- Railway corridor
- Railway Bridge
- Major Road
- Signalised crossing
- Pedestrian crossing
- 200m site catchment
- Public open space
- Private open space - publicly accessible
- Communal open space
- Nature reserve (not publicly accessible)
- No Access
- Public access
- Existing Trees

Open Space and Recreation - Detailed Analysis

3.5 Publicly Accessible Open Space

The following images are of significant parks that are publicly accessible and are located within the site's local context. The location of these spaces are annotated on the diagram shown in 2.4.

The parks shown are all located within 400m of the subject site and vary in accessibility, size and quality of space. Though privately owned and maintained, Discovery Park and the Village Squares are accessible to non-residents through public thoroughfares and through-site links.

The accessibility and character of these spaces is largely shaped by the type of land use and activity that they interface with. These range from residential units and ground floor retail and dining, as well as areas adjacent to the river waterfront, railway corridor and Pacific Highway.

The recreational opportunities and types of facilities available vary significantly across the different parks. The function of these spaces are largely determined by the size, shape and location of the open space. The expansive areas of Discovery Park and Cahill Park are able to cater for multiple uses, including children's play, barbecue facilities, recreational space and pedestrian and cycle paths. The smaller village squares serve as passive open space, providing opportunity to gather and creating a green refuge within the high density development zone. Lusty Street Reserve is primarily used as a thoroughfare and could be better utilised as an active open space.

1. Discovery Park

Accessed: https://www.frasersproperty.com.au/nsw/discovery-point

2. Village Square 1

3. Lusty Street Reserve

4. Village Square 2

5. Cahill Park

3.6 Access and Movement

Figure 20: Access and Movement

The site is located within 400m of Wolli Creek train station and bus stop. The site is bordered by a series of primary access roads (Arncliffe Street and Guess Avenue) and a secondary road (Mount Olympus Boulevard) which connects the site to the north. While the bus route extends around the site, there are no bus stops adjacent to the site. The site can also be accessed through on-road cycle paths.

Rockdale DCP outlines a number of new connections through the existing industrial block between Arncliffe Street and the Princes Highway. The delivery of these connections will create a new T-intersection along the site's south-west boundary and likely increased traffic along Arncliffe Street.

Key

- Site Boundary
- Arterial Road
- Primary Road
- Future DCP Road
- Secondary Road
- On-road Cycle Path
- Bus Route
- Signalised Intersection
- Parking
- Landscaped Open Space

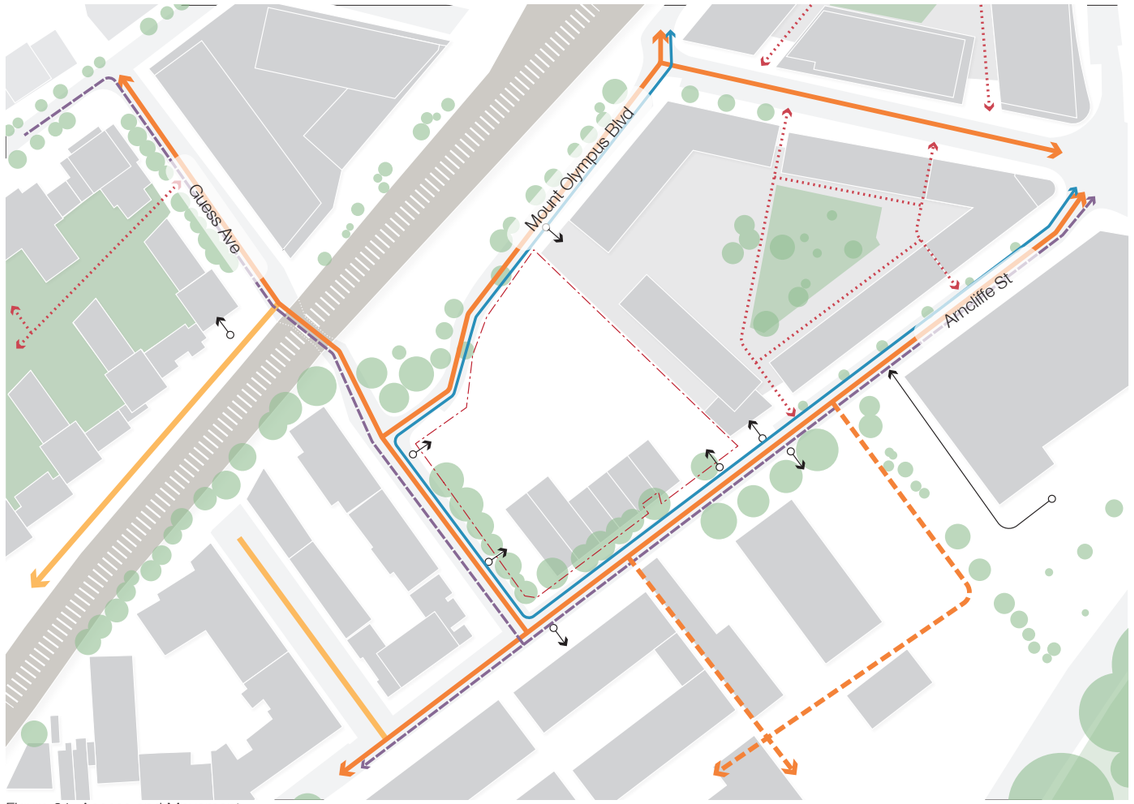


Figure 21: Access and Movement

The site has three vehicular entrance points - one off Arncliffe Street and two from Guess Avenue. The sites to the north-east both locate key vehicular entrance points adjacent to the shared boundary. The provision of these access points and parking within a podium has created blank 2-4 storey facades to the site.

Future proposals from Bayside Council for vehicular movement in the area include the creation of a one way loop around the site. The timing around this proposal is yet to be confirmed.

To facilitate new bus turning lane around the Guess Avenue and Mount Olympus Boulevard corner, a 3m x 3m section of the site will be removed and not available for future development.

Key

- Site Boundary
- Primary Road
- Future DCP Road
- Secondary Road
- Pedestrian Through-site Link
- On-road Cycle Path
- Bus Route
- Vehicular Entry
- Landscaped Open Space

3.7 Built Form and Overshadowing

Figure 22: Built Form

The building typology within Wolli Creek around the train station generally features a lower scale perimeter block with height consolidated within tower forms on block corners. Sites further away from the train station are generally a maximum of 8 storeys. Industrial buildings in the area, including those on the subject site are 1-2 storeys high.

Due to flooding impact, many buildings in Wolli Creek are raised to place habitable floor levels above the 100 ARI flood level and located upon a podium or slightly raised above street level. This creates uncomfortable relationships between the street, “ground floor” uses and privately owned, publicly accessible open space, which is not visible or easily accessible from the street.

Key

- Site Boundary
- 1-2 Storeys
- 3-4 Storeys
- 5-6 Storeys
- 7-8 Storeys
- 9-11 Storeys
- 12+ Storeys
- Blank Facade

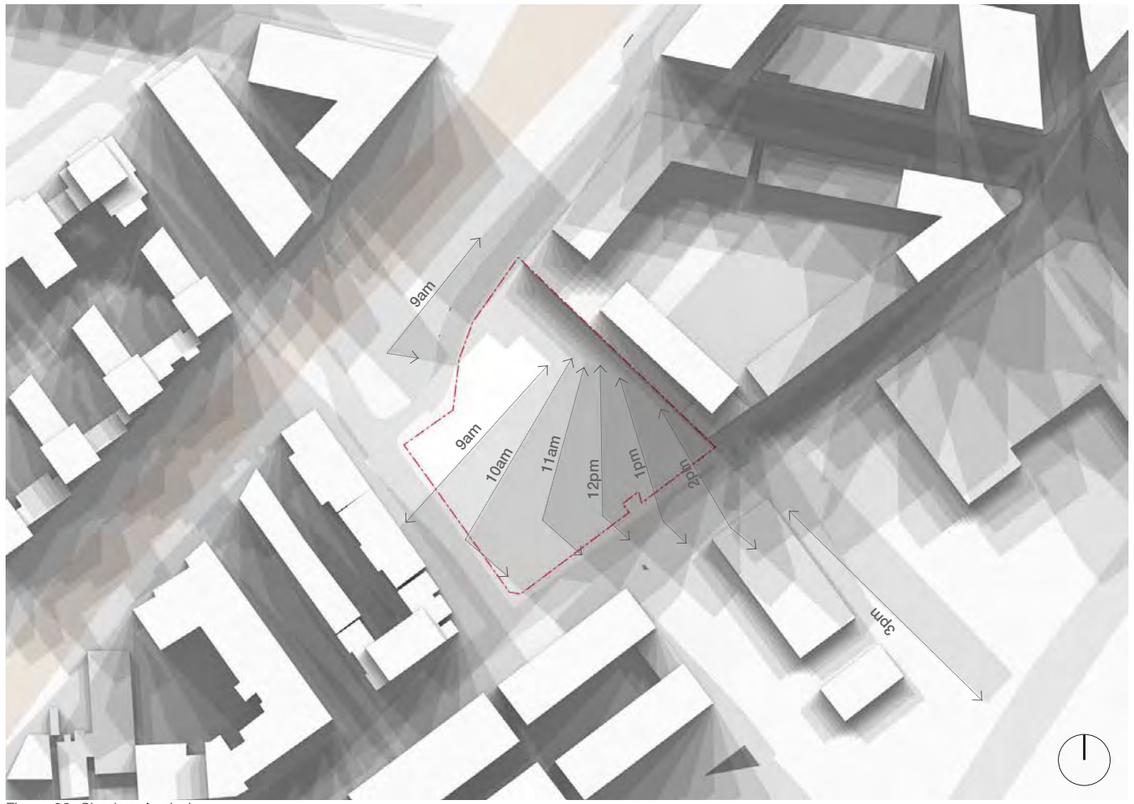


Figure 23: Shadow Analysis

The site is overshadowed by development in the north-east from both its 1-2 storey podium and 15 storey residential tower. The diagram above features the overshadowing of the site from 9am to 3pm during winter solstice. The eastern corner of the site is significantly overshadowed throughout the day. The ability to deliver residential uses, open space or significant planting in this area is impacted by this overshadowing

Future development on the subject site will need to consider its potential overshadowing impact in addition to existing overshadowing created by existing development on residential uses to the south and south-west.

Key

- Site Boundary
- Shadows

3.8 3D Context

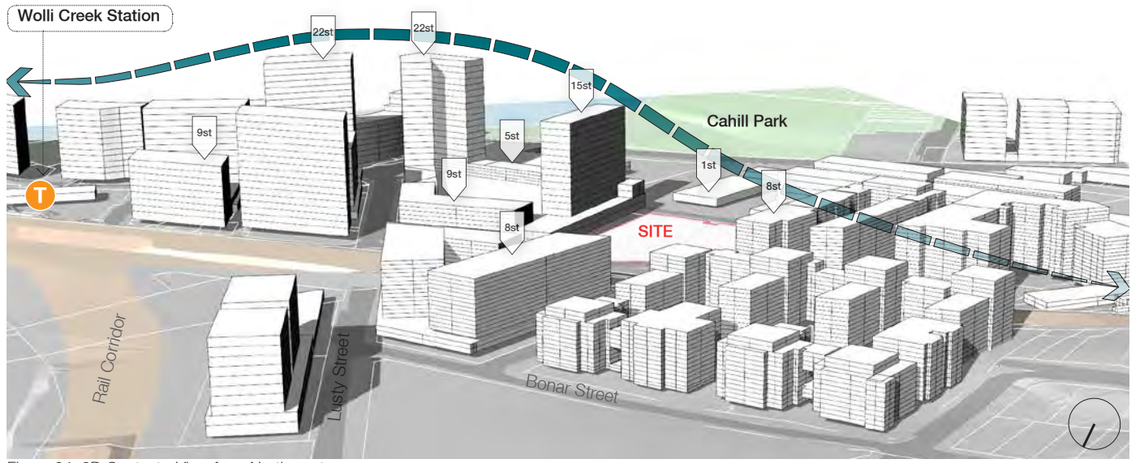


Figure 24: 3D Context - View from North-east

The diagram above presents the site within the existing 3D context, viewed from a north-east direction. A 3D representation of the built environment reveals the predominant skyline, generated by existing built form surrounding the site.

Height is focused within the mixed-use precinct immediately to the south of Wolli Creek Train Station, stepping down to the south and west. The site's location marks a significant step in height between adjacent sites, jumping from 15 to 8 storeys. Thus, the site's position offers the opportunity to create a more gradual height transition that mediates between development zones.

Key

- Site Boundary
- Rail Corridor
- Open Space
- Water
- Indicative Height Line

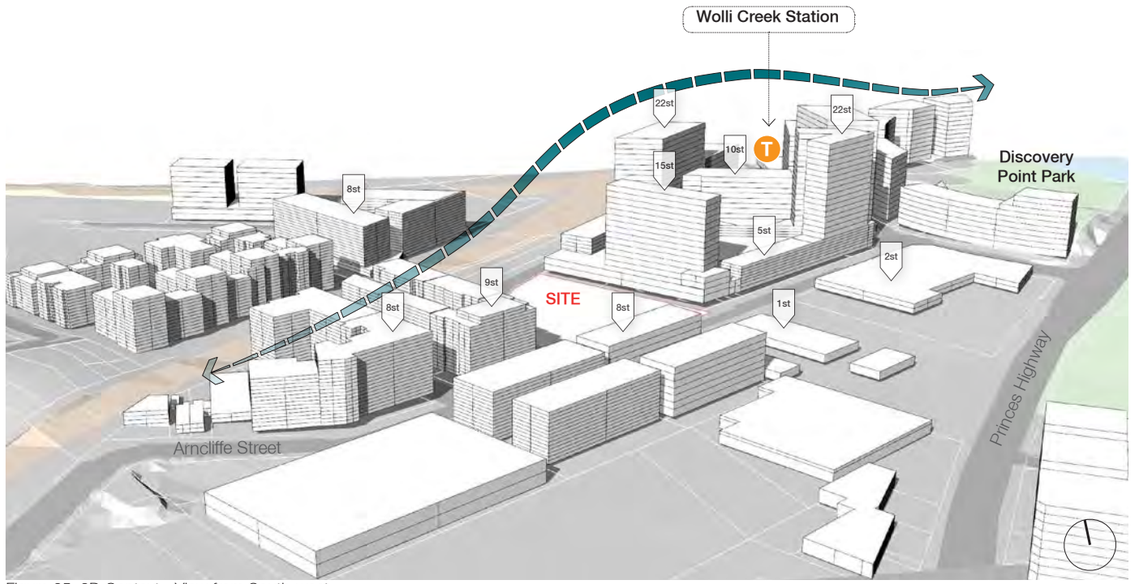


Figure 25: 3D Context - View from South-west

A view of the 3D context from the south-west reveals a clear distinction in built form located to the north and south of Arncliffe Street.

Height falls away to the south of the site across Arncliffe Street and towards the Princes Highway. This area largely consists of large industrial lots ranging from 1-2 storeys, with little transition provided to nearby sites that reach up to 22 storeys.

Key

- Site Boundary
- Rail Corridor
- Open Space
- Water
- Indicative Height Line

3.9 Solar Insolation at Midwinter

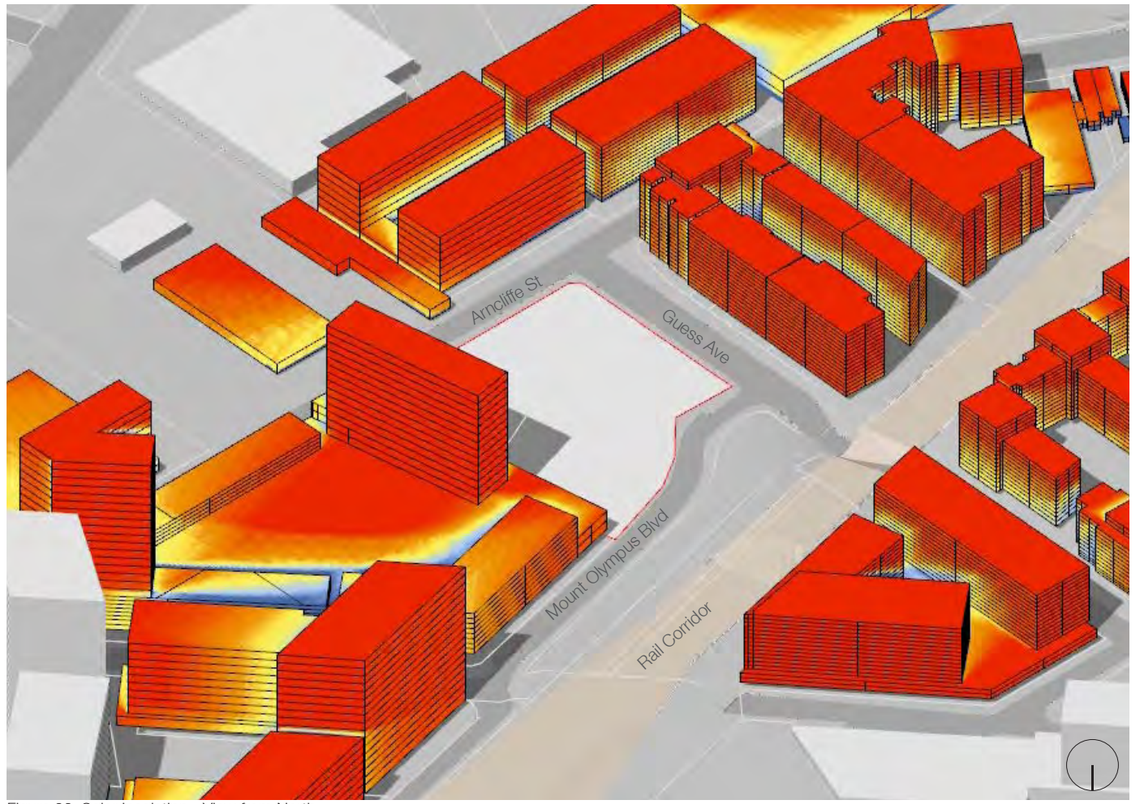


Figure 26: Solar Insolation - View from North

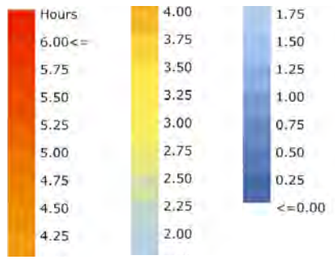
The following diagrams present a solar insolation study for the surrounding built form, occurring between 9am-3pm at midwinter.

These diagrams illustrate that a level of direct solar access received for existing facades oriented to the north and east. These include the residential buildings located immediately to the west along Guess Avenue and opposite to the south along Arncliffe Street.

Key

Site Boundary

Hours of Direct Solar Access:



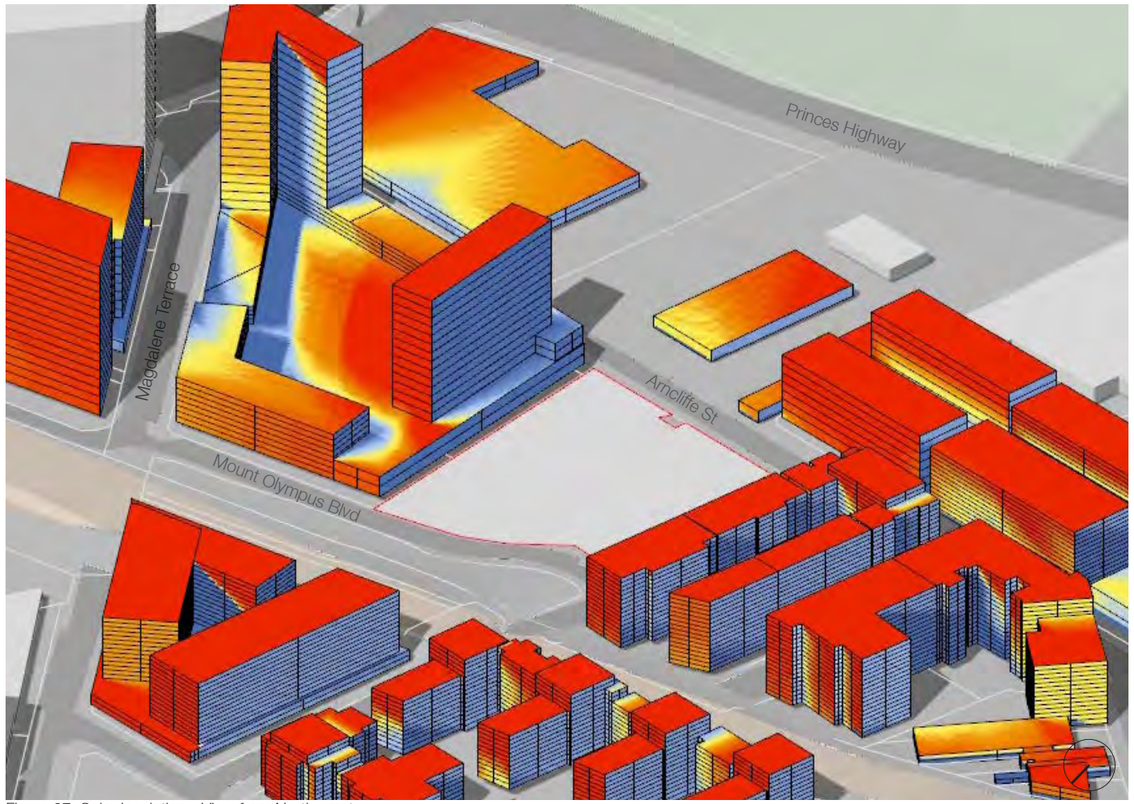


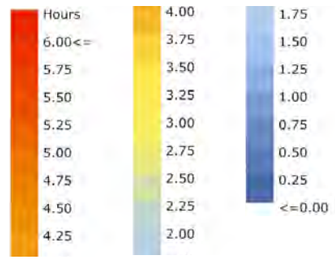
Figure 27: Solar Insolation - View from North-west

The above diagram indicates facades oriented to the south/south-west currently recieve minimal solar access. This includes the blank wall on the development adjoining the site along its eastern boundary.

Key

Site Boundary

Hours of Direct Solar Access:



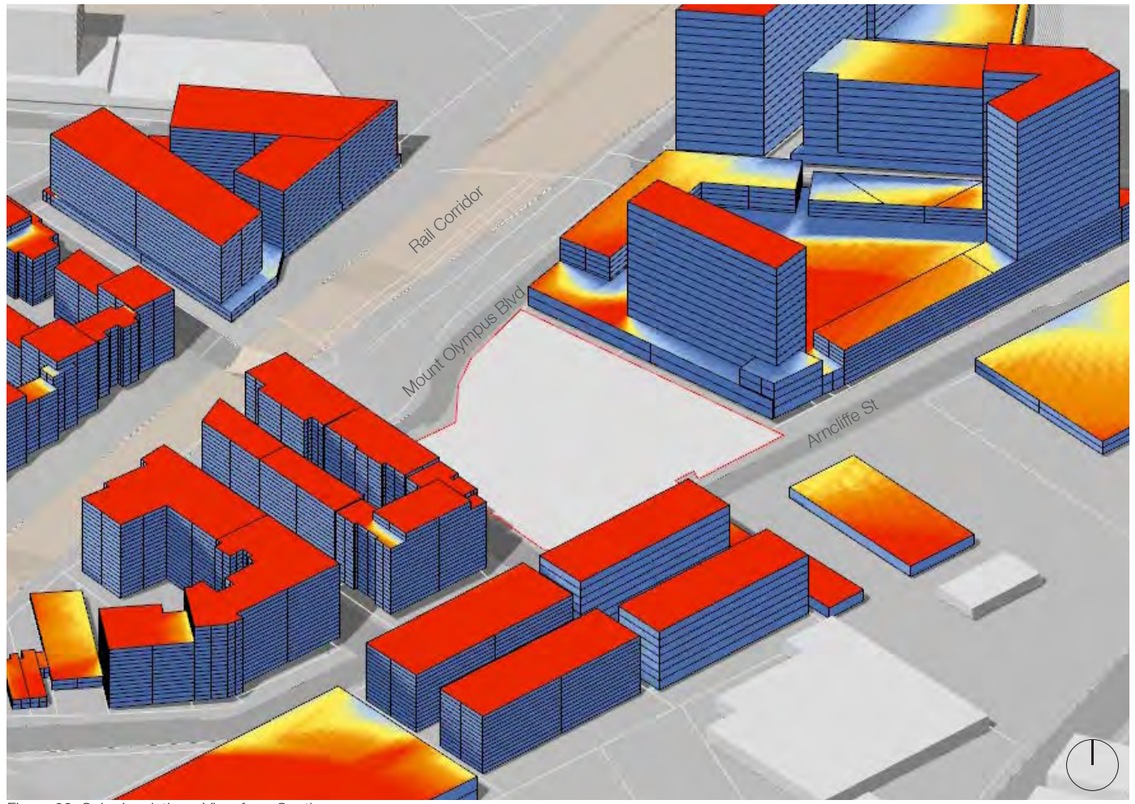


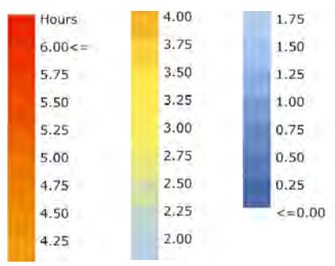
Figure 28: Solar Insolation - View from South

The above diagram indicates facades facing south/south-west currently recieve minimal solar access, as expected of this orientation.

Key

Site Boundary

Hours of Direct Solar Access:



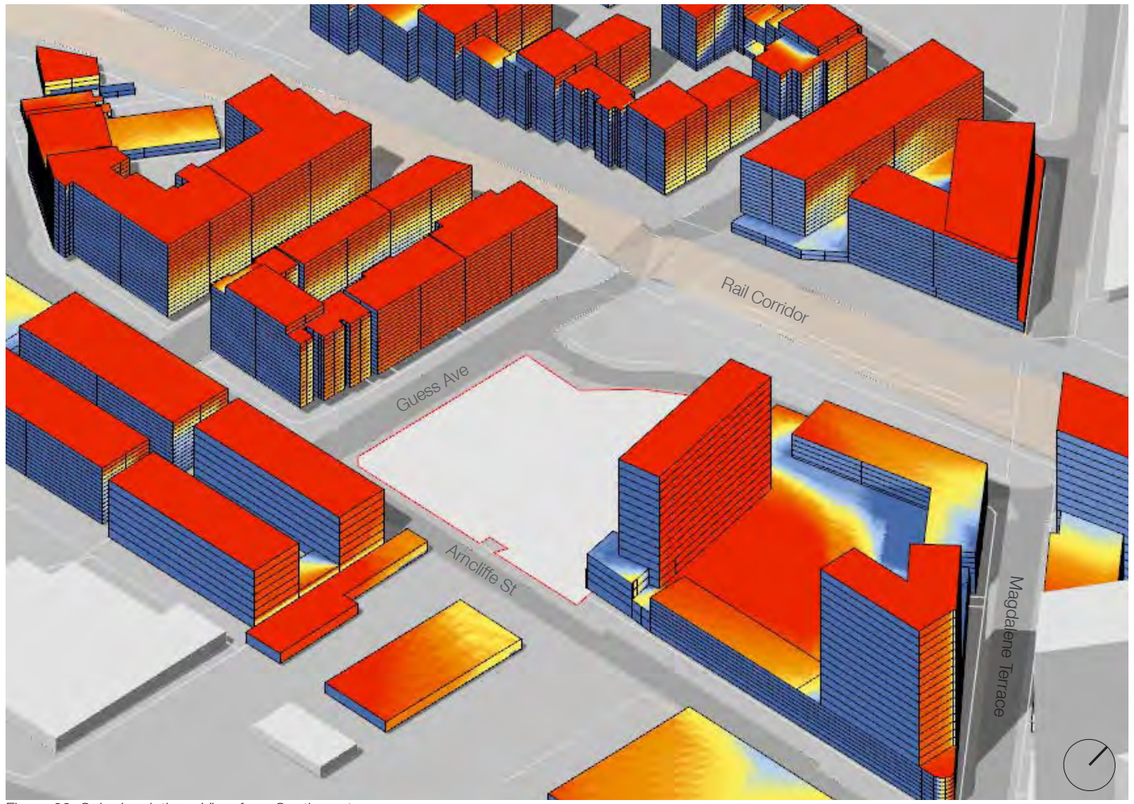


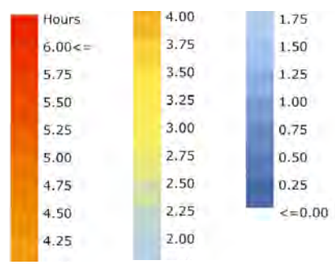
Figure 29: Solar Insolation - View from South-east

The above diagram indicates that the site located to the west across Guess Avenue decreases in solar access along the southern portion of the north-east facing facade.

Key

Site Boundary

Hours of Direct Solar Access:



3.10 Land Use

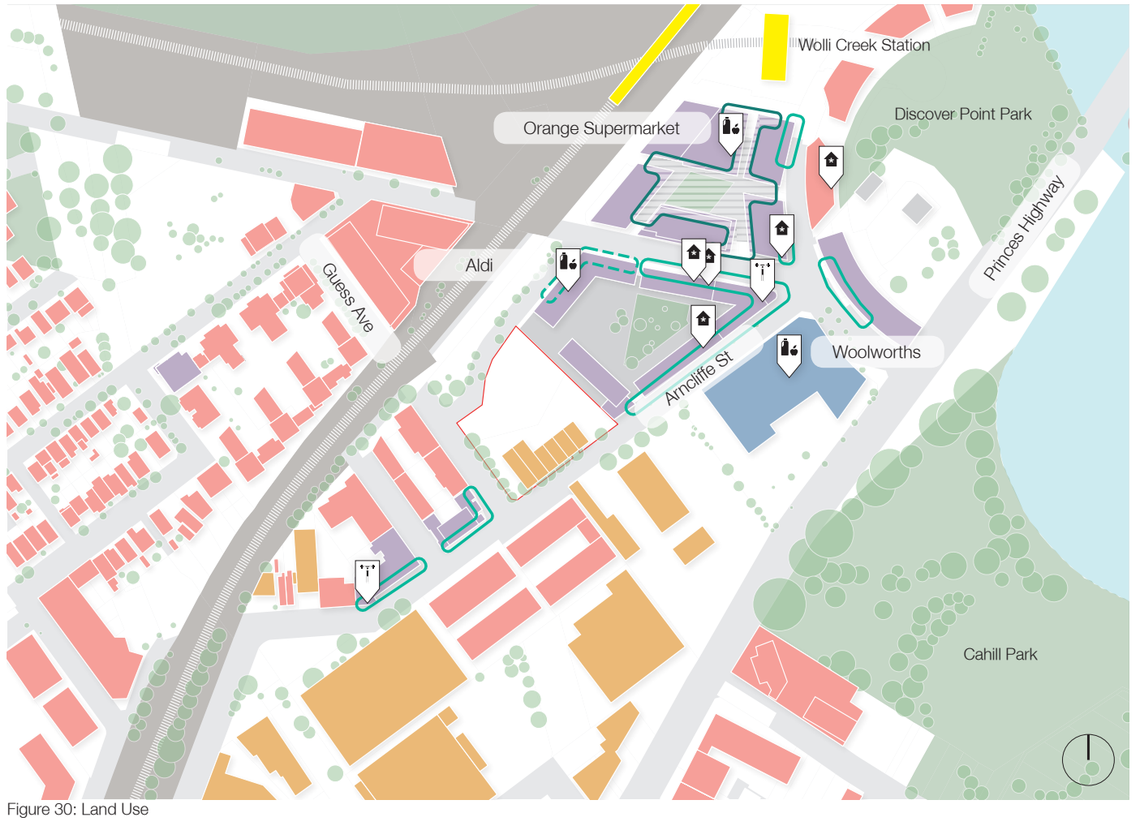


Figure 30: Land Use

Non-residential uses are generally located around Wolli Creek Station in a piece-meal manner that results in a fractured active street frontage. South of Wolli Creek Station is a cluster of food and beverage uses located around a piece of privately-owned, publicly-accessible open space. These uses are key to servicing the increased residential densities in this area. Further away from the station, the ground floor uses increasingly become service-based with a number of real-estate agents, beauty and medical services. There are a number of new ground floor commercial spaces to the south-west of the site along Arncliffe Street.

The site is within walking distance of a number of supermarkets including the recently completed Aldi on Mount Olympus Boulevard and Woolworths on Arncliffe Street.

To the west and north-west of the site are predominantly residential uses. Industrial uses are still predominately located in the block between Arncliffe Street and the Princes Highway.

Key

- Site Boundary
- Residential
- Commercial/Retail
- Mixed-Use
- Industrial
- Landscaped Open Space
- Infrastructure
- Wolli Creek Town Centre Ground Floor - Food and Beverage Uses
- Ground Level - Service Uses

Figure 31: Land Use

Immediately to the site's south-west are predominantly residential uses with some ground floor non-residential uses along Arncliffe Street. They provide limited street activation and passive surveillance due to a significant street setback and raised levels.

The interface of residential uses located to the south of the site along Arncliffe Street is poor in quality with a significant setback and limited street planting. Key building services are generally housed within single storey structures within this setback.

Existing industrial uses to the south-east support distribution, freight and produce a significant amount of large vehicle traffic along Arncliffe Street.

Key

- Site Boundary
- Residential
- Commercial/Retail
- Mixed-Use
- Industrial
- Landscaped Open Space
- Non-residential ground floor use

3.11 Character

Figure 32: Character Areas

The character areas are typically classified according to the predominant land use. The experience of these areas are also shaped by interfaces with key infrastructural elements and the character of adjoining precincts.

The subject site falls within an industrial zone, characterised by large lots occupied by low scale buildings and unbuilt areas. To the north and west, the site adjoins a residential area characterised by recently developed medium-high density residential. A mixed use area, also identified as Wolli Creek Town Centre (Rockdale DCP 2011), is located to the east. The site's northern boundary interfaces with the railway corridor, with some landscaping provided as a buffer from heavy rail infrastructure.

The Arncliffe Urban Renewal Precinct, established by the NSW Department of Planning and Environment, is also identified nearby to the south-west. This area is anticipated to undergo significant growth and development.

Key

- Site Boundary
- Low Density Residential Area
- Medium-High Density Residential Area
- Industrial Area
- Landscaped/Open Space Area
- Mixed Use Area
- Pacific Highway Interface
- Railway Corridor Interface
- Town Centre (Rockdale DCP 2011)
- Arncliffe Urban Renewal Precinct
- Gateway (Rockdale DCP 2011)

Figure 33: Streetscape Character and Interfaces

Within the site's immediate context, the streetscape character is largely shaped by the level of engagement of interfaces at ground level. A range of interfaces types are identified above. They range from active retail frontages that engage with the street, residential interfaces offering some passive surveillance and edges with poor activation and minimal street engagement due to features such as blank façades and street setbacks.

Currently the site's edges are poorly activated and offer minimal engagement with the streetscape and surrounding context.

The extent of tree canopy also contributes to the character of streets. While minimal in most parts, the existing trees located on the site and some nearby industrial sites contribute to the landscaped character of parts of Arncliffe Street and Guess Avenue.

Key

- Site Boundary
- Active Retail Frontage
- Residential Interface
- Poor Activation
- Pedestrian Through-site Link
- Railway Corridor
- Existing Tree Canopy

3.12 Existing Planting

The subject site has a number of mature trees located along its Guess Avenue and Arncliffe Street frontages. Botanics Tree Wise People were engaged to prepare an aboricultural pre-construction impact assessment and management plan to understand the significance of these existing trees.

“A total of seventeen (17) trees have been assessed on site. These comprise one (1) *Camphor laurel* and sixteen (16) *Lophostemon confertus* or Brush Box trees. All have a history of lopping to reduce canopy height and spread...This has however resulted in multiple tree wounds and consequential decay.

Several of the trees particularly in the southern corner have died or are dying back. This will likely be the result of multiple issus including compation, mechanical damage and soil contamination.” (Pre-construction Impact Assessment and Management Plan, 2-4 Guess Avenue, 2019)

The key findings from the assessment is that none of the existing trees are of high significance and are rather of moderate to low significance.

Any proposed development should consider these trees for retention. If any removal is proposed, this could provide the opportunity to replace existing planting with suitable plant stock and species to improve the site’s agricultural amenity contribution in the long term.

Excerpt from the Aboricultural pre-construction impact assessment and management plan

Pre-DA aboricultural assessment

- The combined amenity of these trees provide a visual screen primarily along the Arncliffe Street boundary. These are the largest and most healthy of the stand and have been partially protected by the building footprint and setback
- Trees within and around the southern edge of the parking bay are in poor health with multiple issues and limited life expectancies
- The Camphor laurel on the western boundary is a poor tree species for a range of reasons and should not be considered for retention in any proposed development.
- These trees are supported on trunks of approximately 50cm with basal flares of up to 80cm in diameter. Construction setback of 5-6m would be required under AS4970 guidelines to allow for preservation. Existing construction footprints have however affected root development and any construction within the existing would be fine.
- None of these trees are part of the locally native plant community and all will have been planted as part of earlier landscape works. The *Lophstemon confertus* specific is however native and well suited for these localised environmental conditions and can be expected to continue to grow towards their full biological potential here
- There are numerous sections of visible surface decay and bark inclusions throughout these plantings. These are structural defects that may lead to failure. The size and scale of these also affect aboricultural significance. None of the trees assessed are of High Value, with all being Moderate (Consider for retention) or Low.

Figure 34: Indicative Existing Tree Plan

Figure 35: View of existing planting within site along Guess Avenue (Source: Botanics Tree Wise People)

Figure 36: View of existing planting within the site along Arncliffe Street

3.13 Constraints and Opportunities

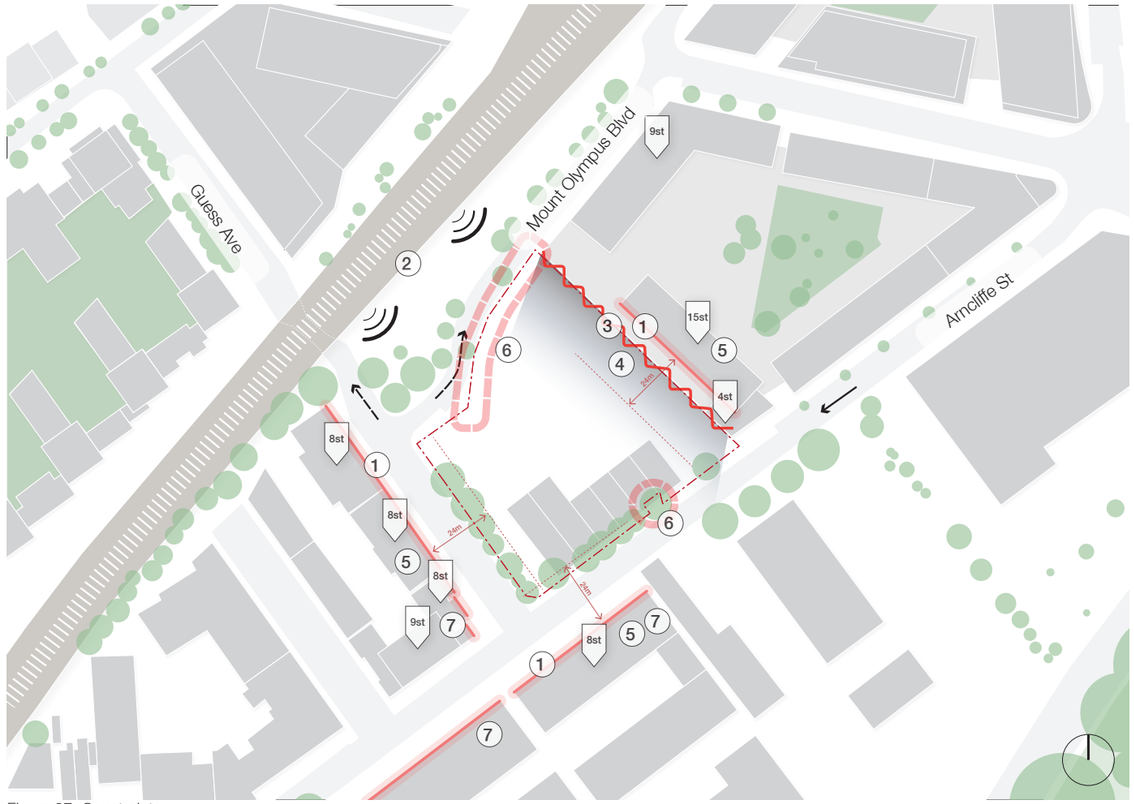


Figure 37: Constraints

1. Provide adequate separation between surrounding residential interfaces and consider potential impact on views and solar access.
2. Mitigate noise impacts from nearby rail corridor.
3. Minimise outlook to existing blank facade on adjacent building.
4. Consider overshadowing impact from existing development adjacent to the north-east.
5. Respond to existing heights of surrounding recent development.
6. Provide design solutions to maximise development potential on irregular-shaped site.
7. Minimise additional overshadowing to existing residential development to the south

Key

- Site Boundary
- Sensitve Residential Interface
- Blank Wall - Built to Boundary
- Overshadowing
- Irregular Shape
- Noise from Rail Corridor
- 24m Built Form Separation

Figure 38: Opportunities

1. Retain existing planting along Guess Avenue and Arncliffe Street
2. Opportunity to build to boundary along blank wall, from which separation requirements are minimised.
3. Utilise existing vehicular access points.
4. Opportunity to engage with existing on-road cycle path route.
5. Potential to enhance site access and align with future DCP roads off Arncliffe Street.
6. Maximise solar access for future development and open space
7. Retain open space uses originally proposed for the site

Key

- Site Boundary
- Existing trees
- Existing vehicular site access
- Future DCP Road
- On-road Cycle Path
- Solar Access

3.14 Potential Land Uses

The subject site area (7,765m²) has the capacity to deliver local open space alongside complementary land uses. Underpinned by research and advice from SGS and Hill PDA, a number of open space uses and complementary land uses where highlighted for potential inclusion. These form part the basis for open space and built form testing.

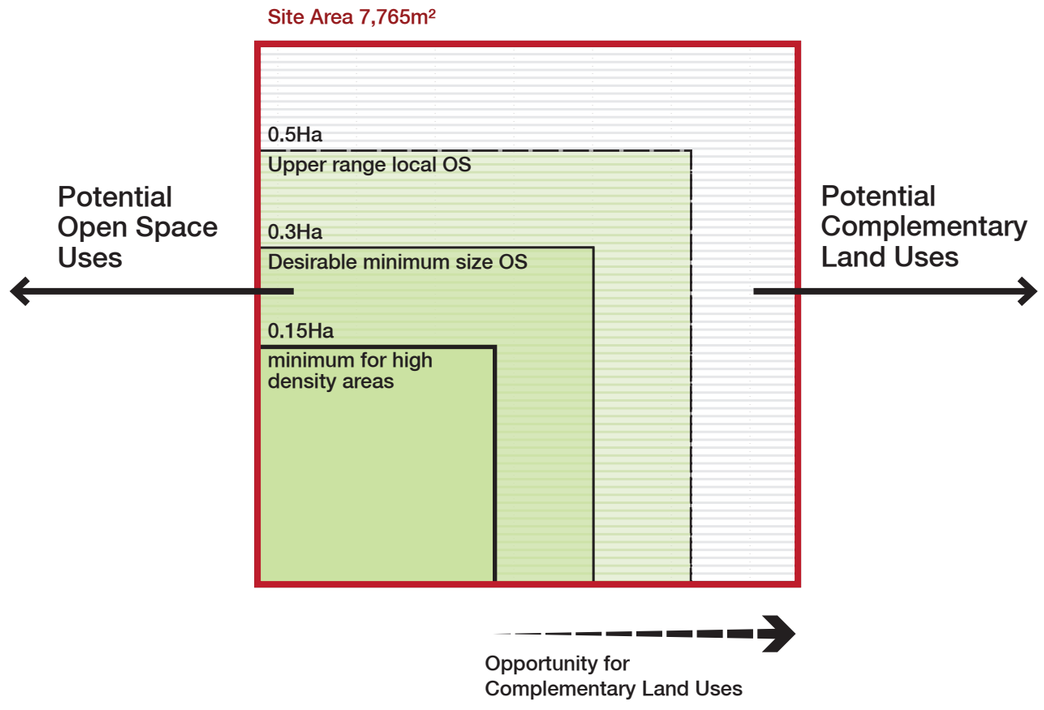
SGS have highlighted than “an open space of 4,000m² would increase the open space offering in the local area in a meaningful way as it would include more diverse open space uses.” (Open Space Assessment: 2 & 4 Guess Avenue Wolli Creek, 2019)

0.15Ha Local Open Space
Minimum for high density areas
(where more efficient provision does not exist)

Potential uses which could be supported are:
- A small playground, and
- Lawn
- Infrastructure which would encourage people to stay within the park (e.g. seating, shade and a basic path network)

0.3-0.5Ha+ Local Open Space
Desirable minimum size or larger

Potential uses which could be supported in addition to those listed above are:
- New local play experiences such as nature play to compliment existing traditional small playgrounds
- Community gardens
- Larger gathering lawns
- Effective pedestrian links and visual links across the site
- Small active recreation areas such as basketball half courts



Residential

The inclusion of residential within the subject site will capitalise on its proximity to Wolli Creek Station, new local open space on-site and is consistent with the character of the surrounding area

Commercial/Retail

The site is bordered by lands zoned B4 Mixed Use with retail uses located predominantly at ground in the surrounding blocks. There is an opportunity to include these uses

Vision and Principles

4

4.1 Vision

The site, located at 2&4 Guess Avenue, Wolli Creek is envisioned to be a vibrant, mixed-use development framing a large multi-use local open space. The proposal will provide additional housing, employment, retail and recreation opportunities, responding to a wider vision for growth and urban renewal already progressed through the surrounding area.

The rezoning and restructuring of the site will maximise open space provision, passive surveillance and pedestrian connectivity from Arncliffe Street to Mount Olympus Boulevard through to Wolli Creek station. The preferred option will respond to the character of its context, within both an existing and future framework. Frame the park with built form along its southern edge will provide the opportunity for passive surveillance and activation without compromising solar access to the park. Opportunities for upper level setbacks, articulation and material variation will reduce the visual impact of built form adjacent to the park.

Located in close proximity to Wolli Creek Train Station, the proposal will facilitate transit-oriented development, with an emphasis on public and active modes of transport.

This vision for the subject site has been interpreted as a set of design principles and parameters on the following pages.

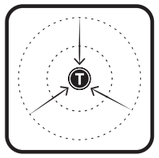
Figure 39: Visualisation - Local Open space

4.2 Design Principles

The vision for the site has been informed by a set of overarching design principles. These principles reflect the design objectives provided in GANSW's Better Placed policy document and outlined below. The correlation between the Better Placed objectives and the site priniples are represented through the colour coding system.

Design Objectives - *Better Placed*, GANSW

1. ***Better fit*** *- contextual, local and of its place*
2. ***Better performance*** *- sustainable, adaptable and durable*
3. ***Better for community*** *- inclusive, connected and diverse*
4. ***Better for people*** *- safe, comfortable and liveable*
5. ***Better working*** *- functional, efficient and fit for purpose*
6. ***Better value*** *- creating and adding value*
7. ***Better look and feel*** *- engaging, inviting and attractive*

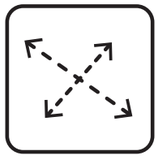


i. Facilitate transit-oriented development, utilising the site's proximity to Wolli Creek Station

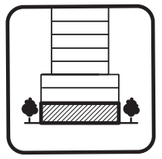
ii. Integrate development with the existing movement network, promoting active and public modes of transport

iii. Provide a mix of uses, accounting for the diversity of users and needs of the local area

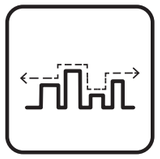
iv. Deliver a usable, high quality public open space that responds to currents trends or deficiences in the existing open space network



v. Create a permeable development site that ensures a high level of accessiblity through the site

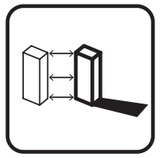


vii. Engage with the streetscape through considered setbacks and streetwall heights, providing opportunities for active uses and passive surveillance at ground level

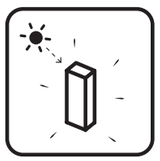


viii. Respond to the height and scale of the surrounding built environment through fit or transition of built form

ix. Respond to the existing landform and environmental conditions



x. Minimise impact on surrounding context, maintaining solar access and views through adequate separation and orientation of built form

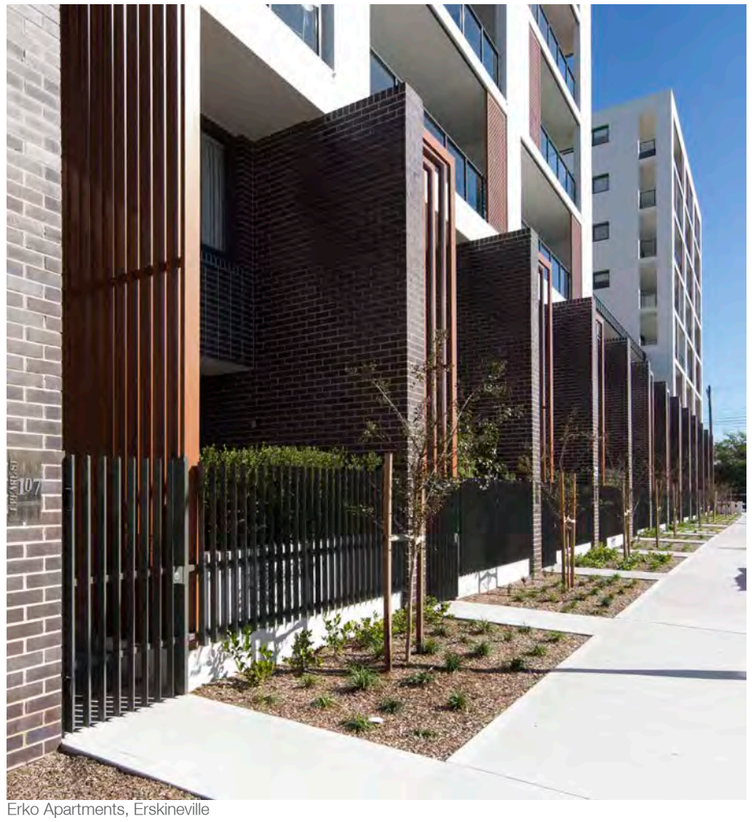


xi. Demonstrate design excellence through a quality development of architectural merit, that ensures a high level of amenity and sustainability

xii. Respond to significant qualities of the existing and desired future character of the local area

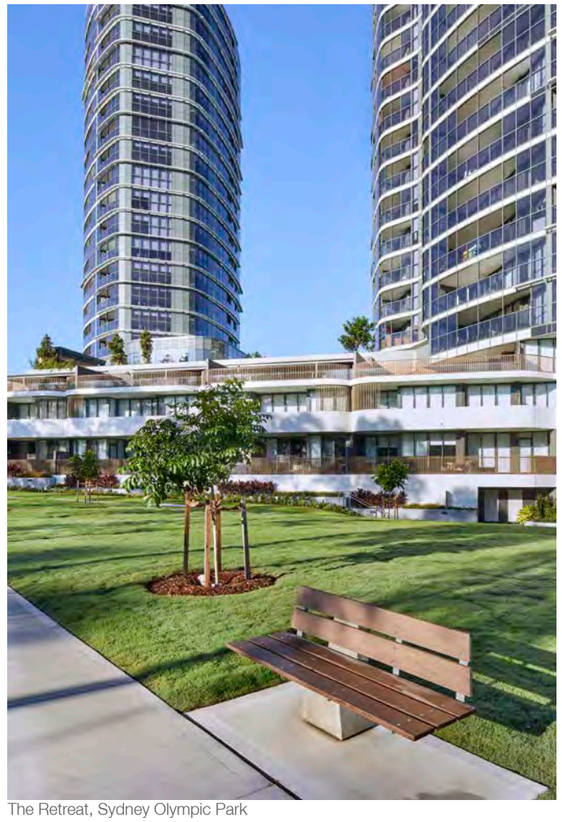
xiii. Contribute to a sense of place, engaging with the needs, demographics and values of the local community

4.3 Design Precedents



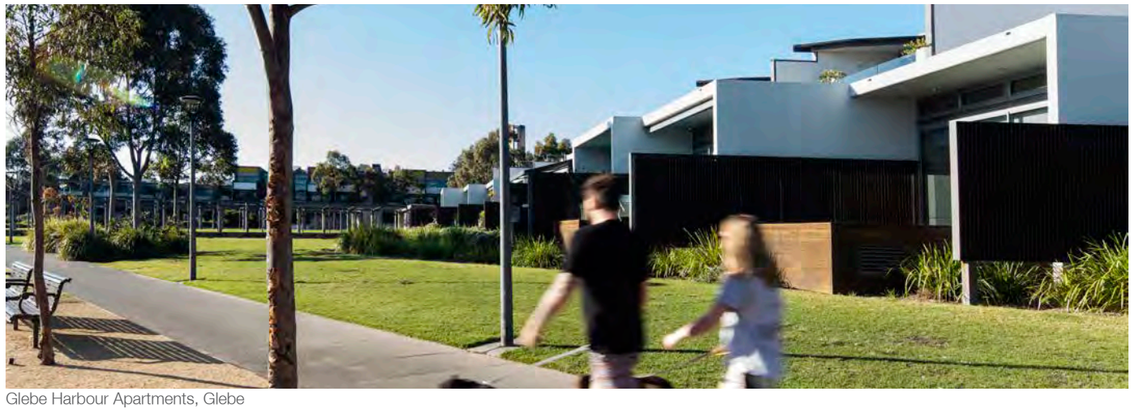
Erko Apartments, Erskineville

The Gantry, Camperdown (Source: ASPECT Studios)



The Retreat, Sydney Olympic Park

Park Lane, Chippendale (Source: JPW)



Glebe Harbour Apartments, Glebe

4.4 Design Parameters

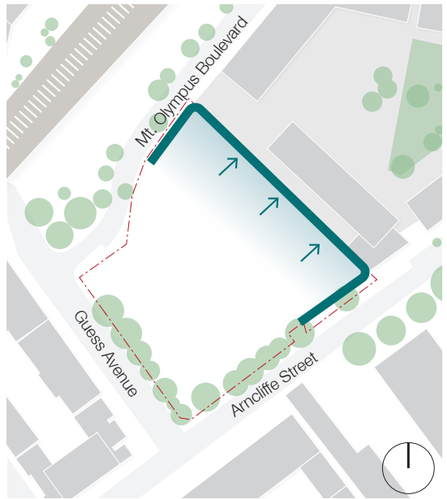


Figure 40: Build to boundary

Opportunity to build up to blank facade on boundary

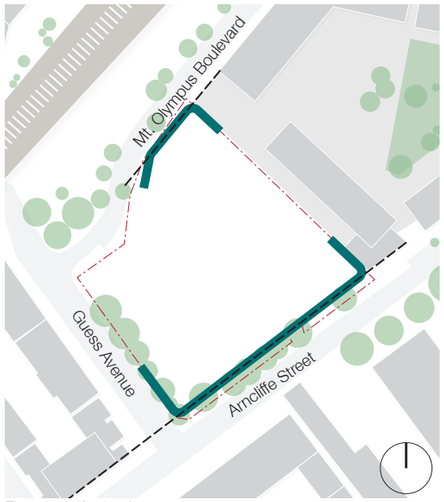


Figure 41: Setbacks

Align built form setbacks with adjacent buildings

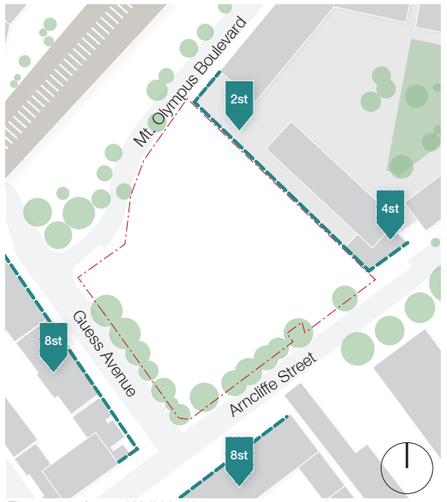


Figure 42: Street Wall Height

Street wall heights should respond to surrounding buildings

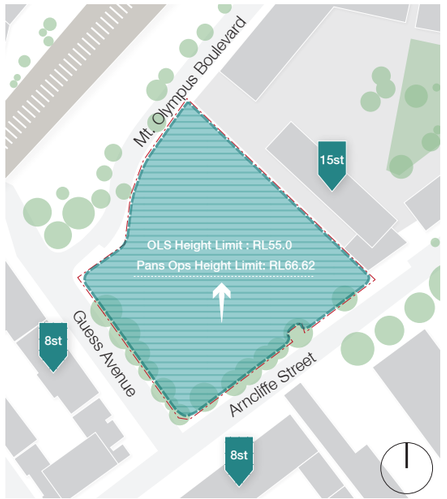


Figure 43: Overall Height

Transition height to respond to surrounding context and consider OLS/PansOps limits

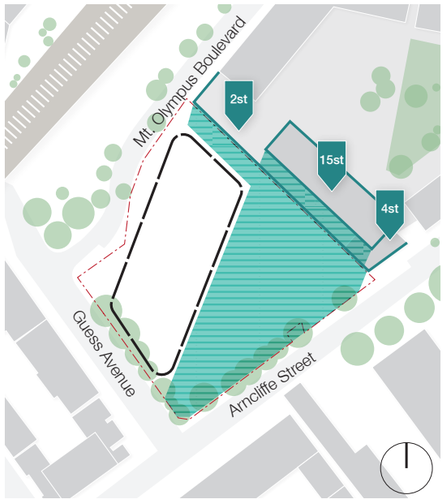


Figure 44: Overshadowing

Locate uses onsite in consideration of overshadowing from adjacent sites

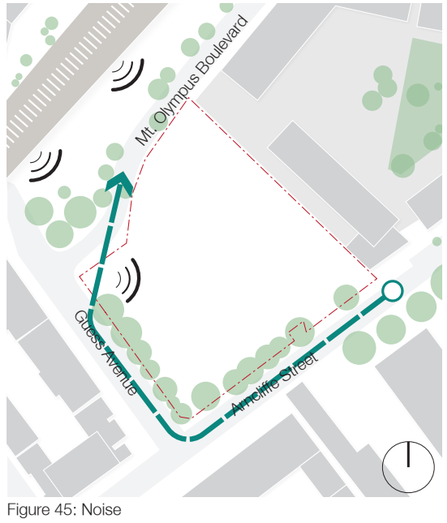


Figure 45: Noise

Consider the impact of noise from rail, traffic and bus movement

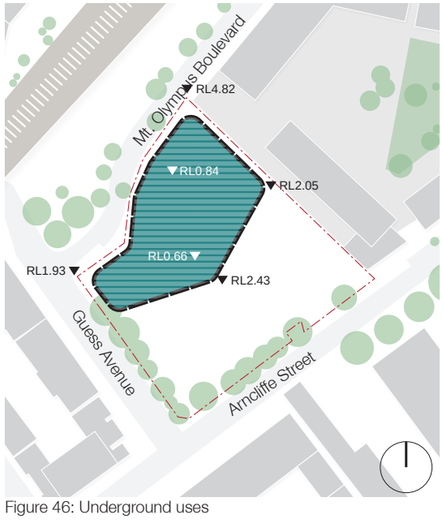


Figure 46: Underground uses

Capitalise the opportunity to use existing excavation to house uses at lower levels

Figure 47: Through-site links

Integrate a through-site link to better connect residential uses to the north to open space to the south

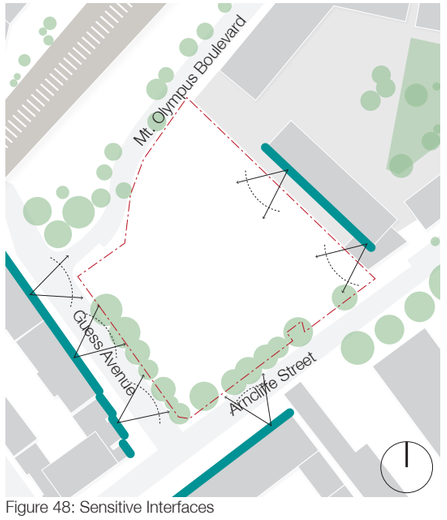


Figure 48: Sensitive Interfaces

Consider sensitive interfaces and views into the sites and minimise overshadowing

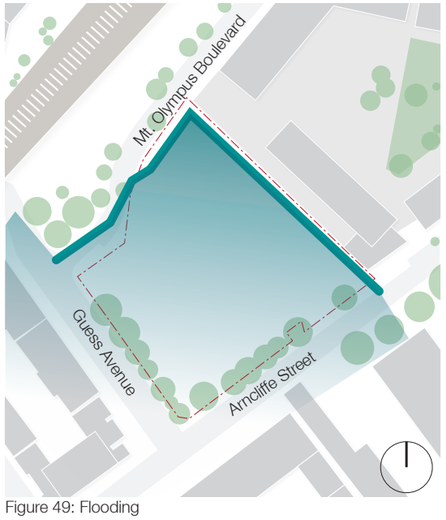


Figure 49: Flooding

Seek innovative design solutions to deal with a raised habitable floor level due to 100 year ARI flooding

Built Form and Open Space Testing

5

5.1 Overview

Step 1: Open Space Testing

The provision of local open space formed the initial criteria for site testing. Within the Greener Places Guidelines, a local open space is outlined as: ”cater(ing) to a local neighbourhood area in urban areas where users predominantly walk or cycle to use the facility because it is reasonably close to residences.”

The recommended minimum size for a local park is 3,000m² (OSFR Guide) although in high density areas, local parks as small as 1,500m² can perform well with appropriate design. These sites were initially tested in two configurations:

- As a consolidated space in the northern portion of the site to maximise solar access and capacity to support community activities
- Equitably split between each of the sites ensuring a similar percentage of open space was provided by each site

A set of preferred open spaces configurations were derived to inform built form testing for the site.

Open Space Sizes	Open Space Configuration
Local Park - 3,000m²+ *OSFR Guide*	Amalgamated
Local Park for High Density Areas - 1,500m² *OSFR Guide*	Equitable Split between Sites

Step 2: Built Form Testing and Shortlisted Options

Utilising the open space shortlist established through open space testing, preliminary built form testing was prepared to test the following:

- Open space scale and configuration
- Potential development Scenario: sharing development value or development as separate sites
- Ability to deliver a 2.8-3:1 FSR, aligned with existing adjacent development
- Built form height: below the Sydney Airport Obstacle Limitation Surface (OLS) or Pans Ops

Once preliminary testing was complete, four shortlisted built form options were selected which each achieve an FSR between 2.8-3:1.

Open Space Shortlist	Development Scenario
Consolidated Open Space 1,500m²+	Shared Development Value
Equitable Split along Guess Avenue	Separate Sites
Built Form Height	**FSR**
Below OLS	Meets 2.8-3:1 FSR
Below Pans Ops	Does not meet 2.8-3:1 FSR

Step 3: Preferred Option

The preferred option was selected from the four shortlisted options in Step 2. This option was further refined to:

- engage with the research and findings from SGS on open space and community needs assessment and HillPDA on retail/commercial demand
- explore potential building street and park interfaces
- understand the ability for the proposed built form to satisfy SEPP65/ADG requirements
- understand the potential impact of the proposed development on adjacent development

This is detailed in Chapter 6 - Preferred Option.

5.2 Open Space Testing - Amalgamated Site

Amalgamated site 1,500m² open space option

The northern corner along Mount Olympus Boulevard is the most appropriate location of a single consolidated piece of open space on the site due to solar access and alignment with access routes to and from Wolli Creek Station.

This consolidation of open space along the amalgamation of the sites provides more flexibility in the arrangement of development on the site

Total Site Area
7,765m²

Total Open Space
1,500m²

- Site Boundary
- Street Setbacks
- Residential Tower Setbacks (9+ storeys)
- Proposed Open Space
- Potential zone for residential tower

Amalgamated site 3,000m² open space option

The north-western edge along Mount Olympus Boulevard is the most appropriate location of a single consolidated piece of open space on the site due to solar access and alignment with access routes to and from Wolli Creek Station. The 3,000m² area makes up approximately 39% of the overall site area.

This consolidation of open space along the amalgamation of the sites provides more flexibility in the arrangement of development on the site.

Total Site Area
7,765m²

Total Open Space
3,000m²

- Site Boundary
- Street Setbacks
- Residential Tower Setbacks (9+ storeys)
- Proposed Open Space
- Potential zone for residential tower

5.3 Open Space Options - Separate Sites

Open Space, Separate Sites - 1,500sqm target

This option looks at an equitable split of the 1,500m² open space target across the two lots. It highlights the potential for a linear park along Guess Avenue and a smaller plaza space along Mount Olympus Boulevard.
When building separation is applied in conjunction with these open spaces, the opportunity for residential uses of 9 storeys and higher become more restricted.

	Site Area	Approx. percentage/ area of each lot to achieve 1,500m² target	Proposed within Option	Percentage of lot
Percentage Target		20%	-	-
Lot 102	3,577m²	715m²	670	19%
Lot 101	4,188m²	838m²	875	20%
Total	7,765m²	1,553m²	1,545m²	-

Open Space, Separate Sites - 3,000sqm target

This option looks at an equitable split of the 3,000m² open space target across the two lots. It highlights the potential for a linear park bordering both lots. The provision of the 3,000m² target would require the dedication of approximately 39% of the site to open space.
When building separation is applied in conjunction with these open spaces, the opportunity for residential uses of 9 storeys and higher become more restricted.

	Site Area	Approx. percentage/ area of each lot to achieve 3,000m² target	Proposed within Option	Percentage of lot
Percentage Target		39%	-	-
Lot 102	3,577m²	1,395m²	1,410m²	39%
Lot 101	4,188m²	1,633m²	1,591m²	38%
Total	7,765m²	3,028m²	3,001m²	-

5.4 Shortlisted Open Space Concepts

Figure 50: Open Space 1

Open Space Configuration 1

Consolidated open space along Mount Olympus Boulevard

This configuration locates open space in the northern corner of the site which receives good solar access and, will not be affected by overshadowing from development on the proposed site, whilst capitalising on pedestrian movement through to Wolli Creek Station. The consolidation of open space within the site provides more opportunity for open space to accommodate a wider range of uses.

Figure 51: Open Space 2

Open Space Configuration 2

Equitable split of 1,500m² of open space across both sites with open space consolidated along Guess Avenue

As per open space configuration 1, the consolidation of open space provides the opportunity for the space to accommodate a wider range of uses. It is likely that open space in this configuration would be partially overshadowed by proposed development.

5.5 Option 1A - Site amalgamation (1,500sqm Open Space, under OLS)

Figure 52: Site Plan

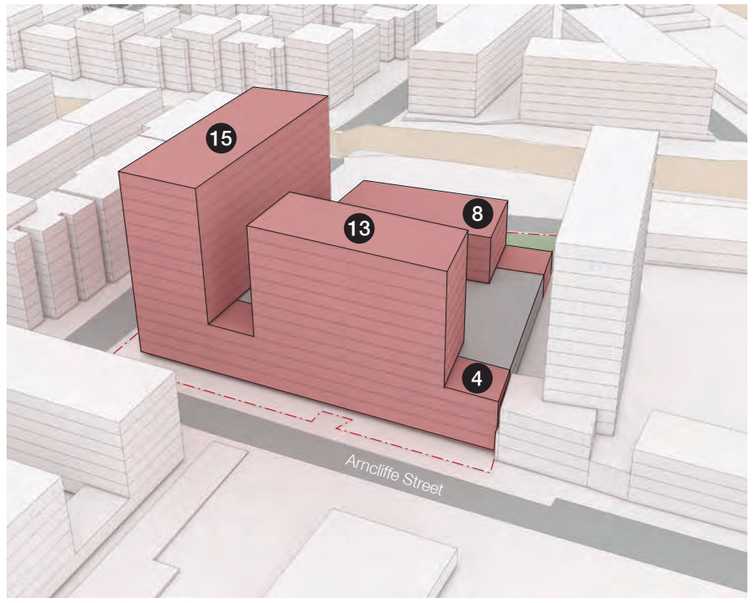


Figure 53: View from north-east

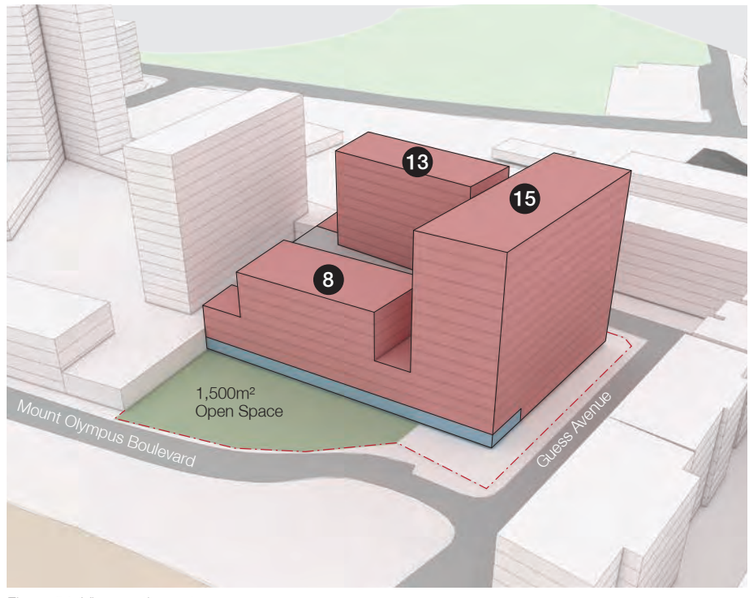


Figure 54: View north-west

The option explores the opportunity for the provision of a consolidated 1,500m² of open space along Mount Olympus Boulevard with development in the southern portion of the site.

Key Features
- Assumed amalgamation of the two lots
- Consolidated open space
- Parking podium skinned with residential uses

Pros
- Solar access to open space due to northern location
- Built form located under the OLS (RL51.0)

Cons
- Potential overshadowing impact on existing residential to the south and potential to develop on existing industrial sites
- The OLS may need to be punctured during construction of the building
- Built form separations reliant on establishment of non-habitable frontages

Site Area 7,765m²	Proposed FSR 3.08:1	Proposed GFA 23,925m²
Residential GFA 23,545m²	Dwellings 277	
Commercial GFA 380m²		
Parking Required Rockdale LEP 349	Parking Required RMS 2002 195	Proposed Parking 343

Assumptions
Efficiencies
Residential GBA to GFA - 75%
Commercial GBA to GFA - 50%
Dwelling Size - 85m²
Area per parking space - 35m²
Apartment Mix - Studio (10%), 1 Bed (30%), 2 Bed (40%), 3 bed (20%)

5.6 Option 1B - Site Amalgamation (2,000sqm open space, to Pans Ops)

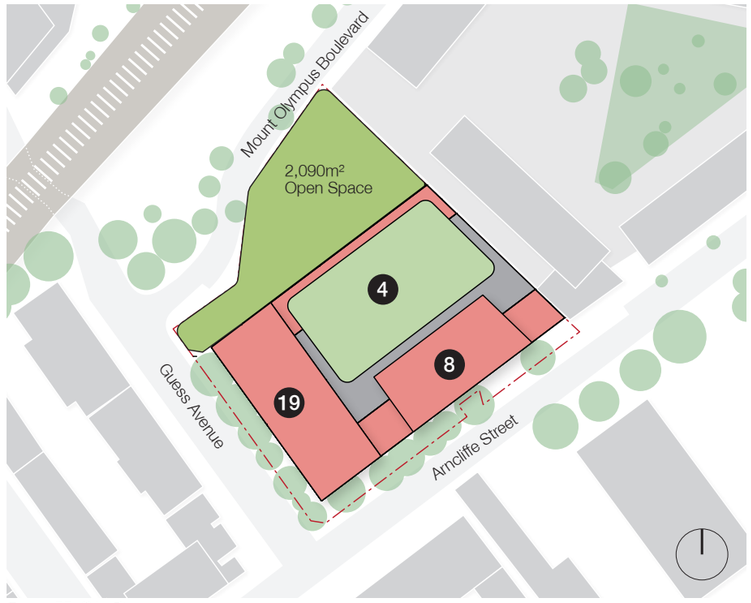


Figure 55: Site Plan

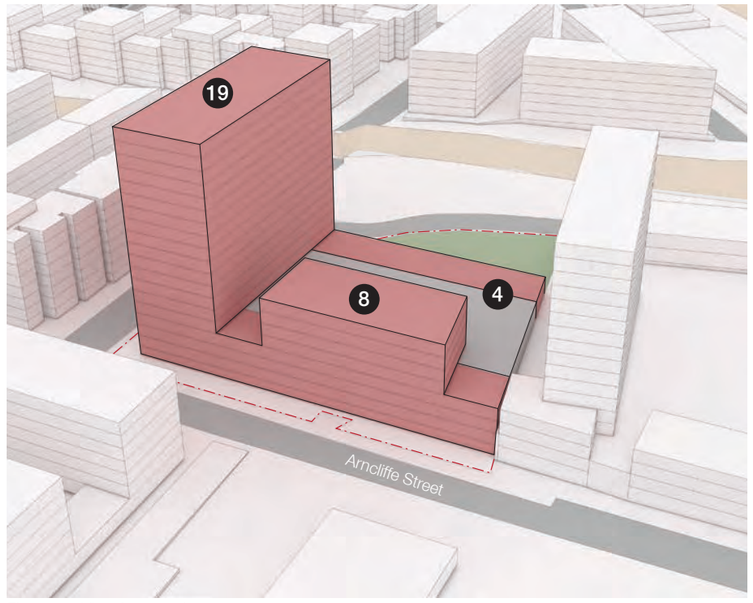


Figure 56: View from north-east

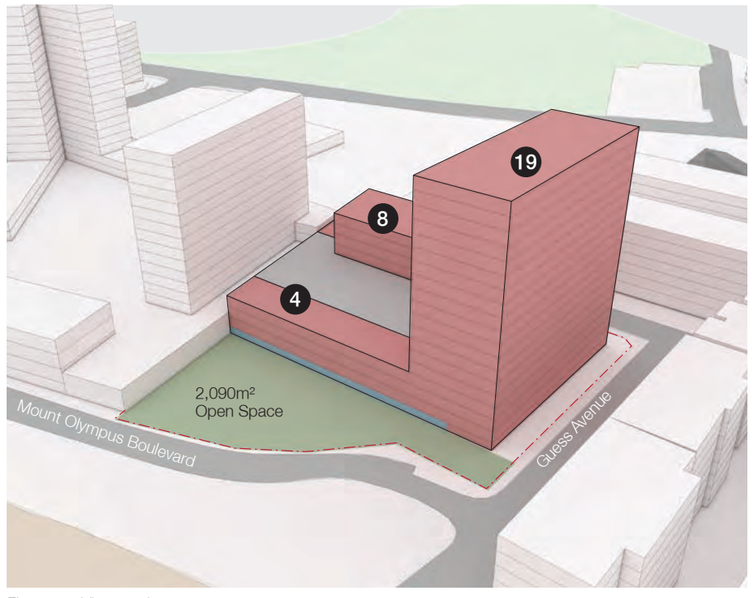


Figure 57: View north-west

The option explores the opportunity for the provision of approximately 2,000m² of open space along Mount Olympus Boulevard with development in the southern portion of the site. Locating open space in the northern portion of the site allows for better solar access, reduced overshadowing from existing and proposed development and opportunities for increased utilisation as Mount Olympus Boulevard is important for access to Wolli Creek Station.

Key Features
- Assumed amalgamation of the two lots
- Consolidated open space
- Parking podium skinned with residential uses

Pros
- Solar access to open space due to northern location
- Simple building form with height consolidated into a tower along Guess Avenue
- Large communal open space above podium

Cons
- Potential overshadowing impact on existing residential to the south and potential to develop on existing industrial sites
- Building exceeds OLS
- Built form separations reliant on establishment of non-habitable frontages

Site Area	7,765m²
Proposed FSR	3.02:1
Proposed GFA	23,470m²
Residential GFA	23,055m²
Dwellings	271
Commercial GFA	415m²
Parking Required Rockdale LEP	343
Parking Required RMS 2002	192
Proposed Parking	240

Assumptions
Efficiencies
Residential GBA to GFA - 75%
Commercial GBA to GFA - 50%
Dwelling Size - 85m²
Area per parking space - 35m²
Apartment Mix - Studio (10%), 1 Bed (30%), 2 Bed (40%), 3 bed (20%)

5.7 Option 2 - Northern Parcel Acquired for Open Space

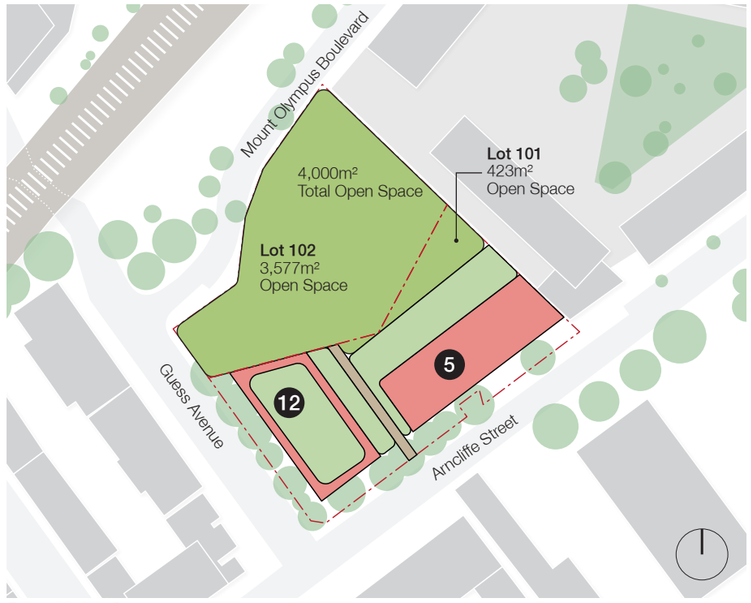


Figure 58: Site Plan

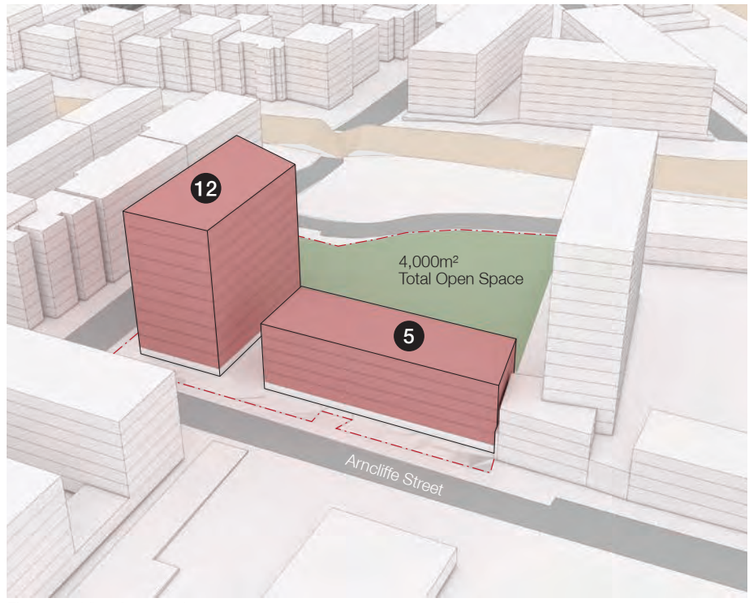


Figure 59: View from north-east

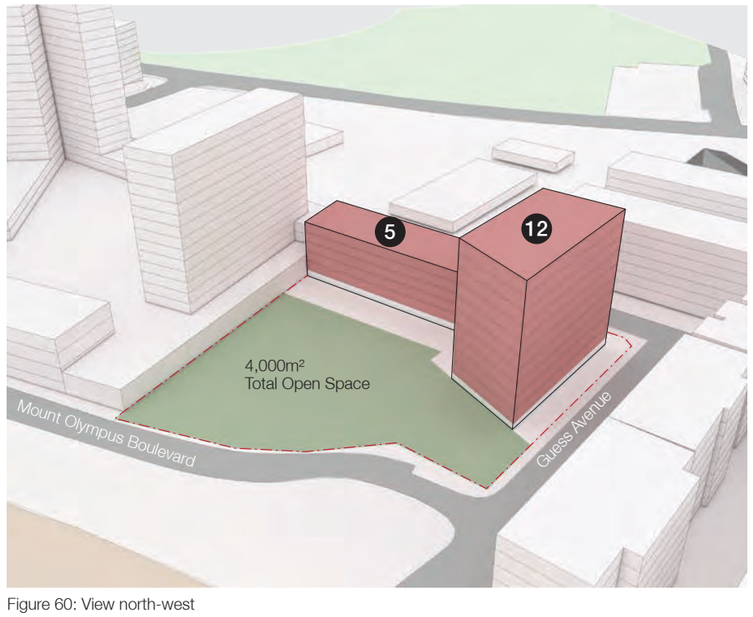


Figure 60: View north-west

The option explores the opportunity to dedicate the northern parcel to open space and consolidate development to the southern lot. Locating open space in the northern portion of the site allows for better solar access, reduced overshadowing from existing and proposed development and opportunities for increased utilisation as Mount Olympus Boulevard is important for access to Wolli Creek Station.

Key Features
- Assumed acquisition of northern lot for open space
- Development on the southern lot below the OLS
- Provision of a portion of the southern lot (10%) as public open space which is considered to be reasonable for a site of this size

Pros
- Solar access to open space due to northern location
- Proposed development does not overshadow open space
- Larger scale open space which provides opportunities for more diverse uses
- Simplified delivery of open space through removal of need to amalgamate
- Built form located below the OLS (RL51.0)
- Potential through-site link

Cons
- The OLS may need to be punctured during construction of the building
- No podium car parking
- Potential overshadowing impact on existing residential to the south and potential to develop on existing industrial sites

Site Area	4,188m²
Proposed FSR	2.88:1
Proposed GFA	12,060m²
Residential GFA	12,060m²
Dwellings	142
Commercial GFA	0m²
Parking Required Rockdale LEP	174
Parking Required RMS 2002	95
Proposed Parking	TBC

Assumptions
Efficiencies
Residential GBA to GFA - 75%
Commercial GBA to GFA - 90%
Dwelling Size - 85m²
Area per parking space - 35m²
Apartment Mix - Studio (10%), 1 Bed (30%), 2 Bed (40%), 3 bed (20%)

5.8 Option 3 - Equitable distribution of land uses

Figure 61: Site Plan

The option explores the opportunity for the provision of 1,500m² of open space alongside built form that achieves an FSR of 2.85-3:1, consistent with the immediate surrounds. Both the open space provision and development yield can be split between both sites.

Key Features
- Potential for retention of separate development parcels
- Equitably split open space provision
- Built form is compliant to height and FSR controls applied to adjacent sites

Pros
- Consistent with the height south and east of the site
- Four storey street wall extended across the Arncliffe Street frontage to align with the adjacent site
- Existing trees are set within a new open space along Guess Avenue
- Realises the potential 2.8-3:1 FSR consistent with adjacent sites
- Retention of larger deep soiil zone around existing mature trees

Cons
- Excess parking/service area provision within the podium
- Some overshadowing of open space by proposed development
- Building exceeds OLS

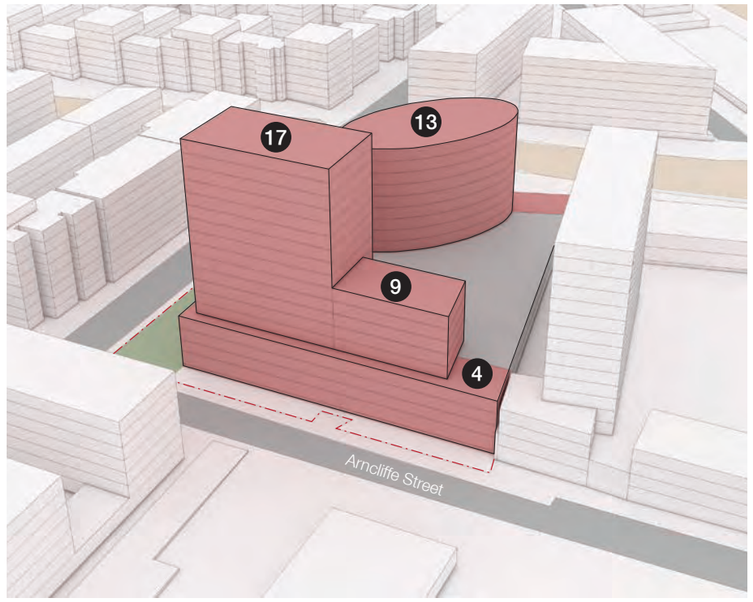


Figure 62: View from north-east

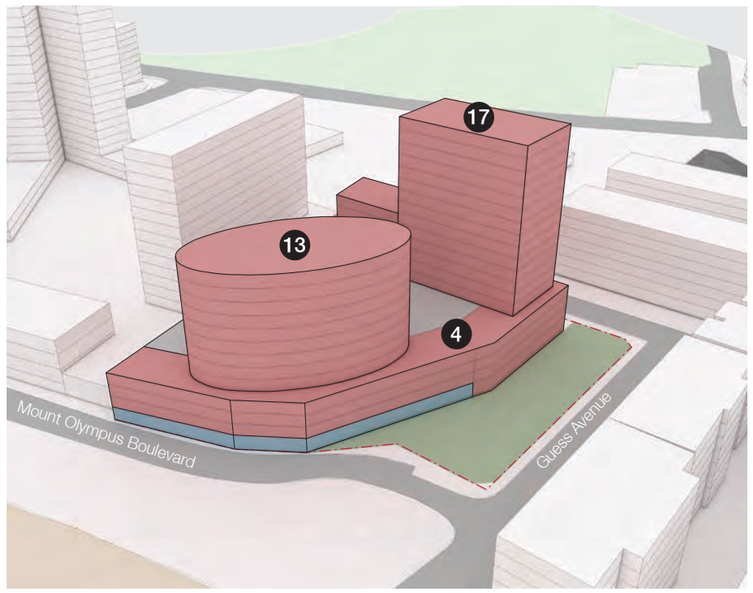


Figure 63: View north-west

4 Guess Avenue (Lot 102)

Site Area	3,577m²
Proposed FSR	3.02:1
Proposed GFA	10,790m²
Residential GFA	9,895m²
Dwellings	116
Commercial GFA	895m²

2 Guess Avenue (Lot 102)

Site Area	4,188m²
Proposed FSR	3.01:1
Proposed GFA	12,600m²
Residential GFA	12,600m²
Dwellings	148
Commercial GFA	0m²

Assumptions
Efficiencies
Residential GBA to GFA - 75%
Commercial GBA to GFA - 90%
Dwelling Size - 85m²
Area per parking space - 35m²
Apartment Mix - Studio (10%), 1 Bed (30%), 2 Bed (40%), 3 bed (20%)

Preferred Option

6

6.1 Site Plan and Indicative Landscape Plan

Built form option 2 was selected as the preferred option and further refined to:

- engage with the research and findings from SGS on open space and community needs assessment and HillPDA on retail/commercial demand
- explore potential building street and park interfaces
- understand the ability for the proposed built form to satisfy SEPP65/ADG requirements
- understand the potential impact of the proposed development on adjacent development

The preferred option features a large-scale 4,000m² public open space in the north portion of the site and two buildings of 12 and 6 storeys in the south. A small retail/cafe tenancy is located on the northern edge of the 12-storey building utilising views over the park. The basement is assumed to sit within 2 Guess Avenue in order to provide the best opportunities for deep soil within the public open space.

The public open space is assumed to be made up of the 4 Guess Avenue (3,577m²) and the northern portion of 2 Guess Avenue (423m²).

Key

- Site Boundary
- Residential Uses
- Public Open Space
- Private/Communal Open Space
- Through-site Link
- Vehicular Entry
- Paved Loop
- Active Frontage
- Community Vegetable Garden
- Nature Play Area
- Storey Heights

Site Plan and Indicative Public Open Space Diagram

6.2 Landscape Concept Plan

Public Open Space

In response to discussions with SGS and their analysis of surrounding open spaces and community facilities, a number of activities have been included within the public open space. These uses will be complemented by seating, picnic tables, tree planting and passive recreation spaces at the centre of the park.

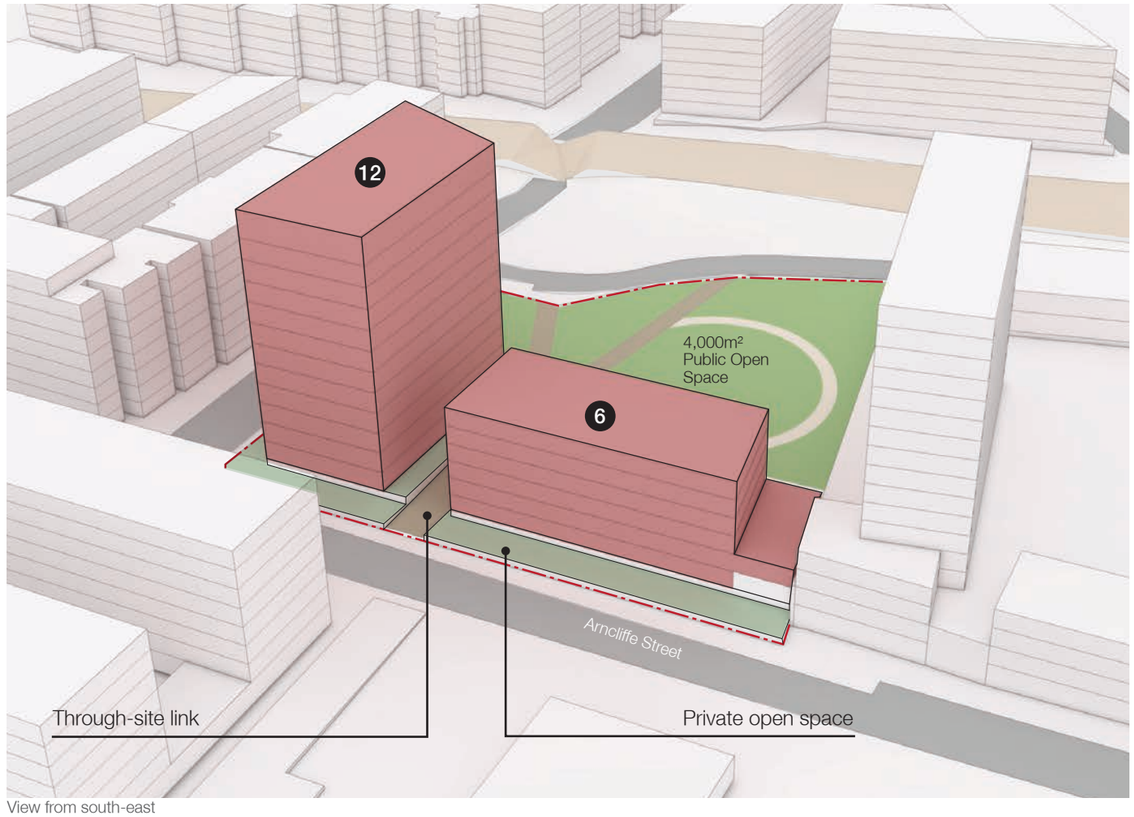
- A basketball half-court has been included in the northern corner of the site for informal community use and activation of the blank facade. This court could be slightly sunken to facilitate stepped seating and utilise the site's existing levels
- Through-site links provide alternate connections from Arncliffe Street to Mount Olympus Boulevard. The connection between built form in the south should be a minimum of 7m in width
- The nature play area will be located adjacent to the retail/cafe tenancy to allow for overlooking and passive surveillance. Planting surrounding this area will provide some demarcation of this space from the rest of the park and serve as a barrier to adjacent roads
- The community vegetable garden has been located to encourage activation adjacent to the blank facade.
- A paved loop has been included to support the use of scooters and bicycles by children within the park

The levels identified in the flood assessment prepared by Northrop, are based on the existing site levels prior to remediation works. Further flood modelling will be required during detailed design stage to ensure any proposed filling of the park does does not create additional flooding impact on the surrounds. The existing levels identified within the flood study could be accommodated through the design of the park including through stairs, terracing and grading of the landscape.

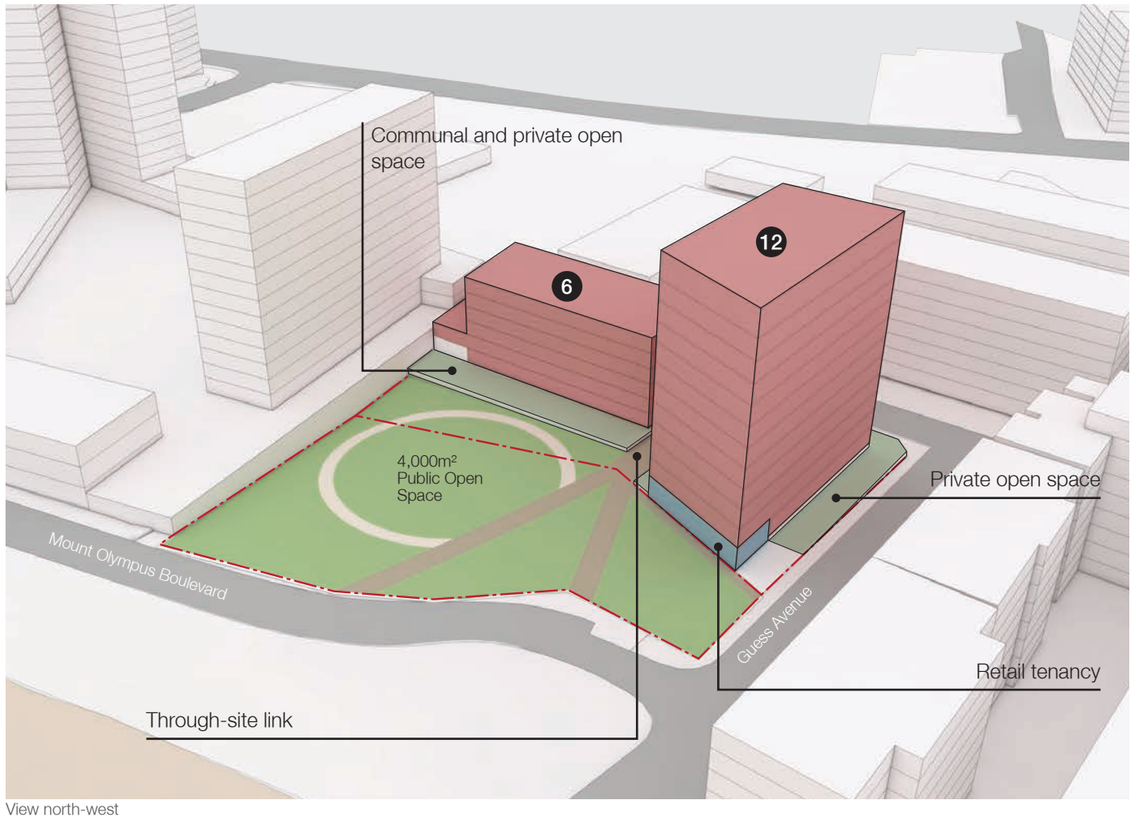
Illustrated Masterplan

Preferred Option

Massing View



View from south-east



View north-west

Site Area	Proposed FSR	Proposed GFA	Residential GFA	Dwellings	Commercial GFA	Parking Required Rockdale LEP	Parking Required RMS 2002	Proposed Parking
4,188m²	2.95:1	12,335m²	12,220m²	144	115m²	175	99	2 basement storeys

Assumptions

Efficiencies
Residential GBA to GFA - 75%
Commercial GBA to GFA - 50%
Dwelling Size - 85%

Area per parking space - 35m²
Apartment Mix - Studio (10%), 1 Bed (30%), 2 Bed (40%), 3 bed (20%)

6.3 Site Sections

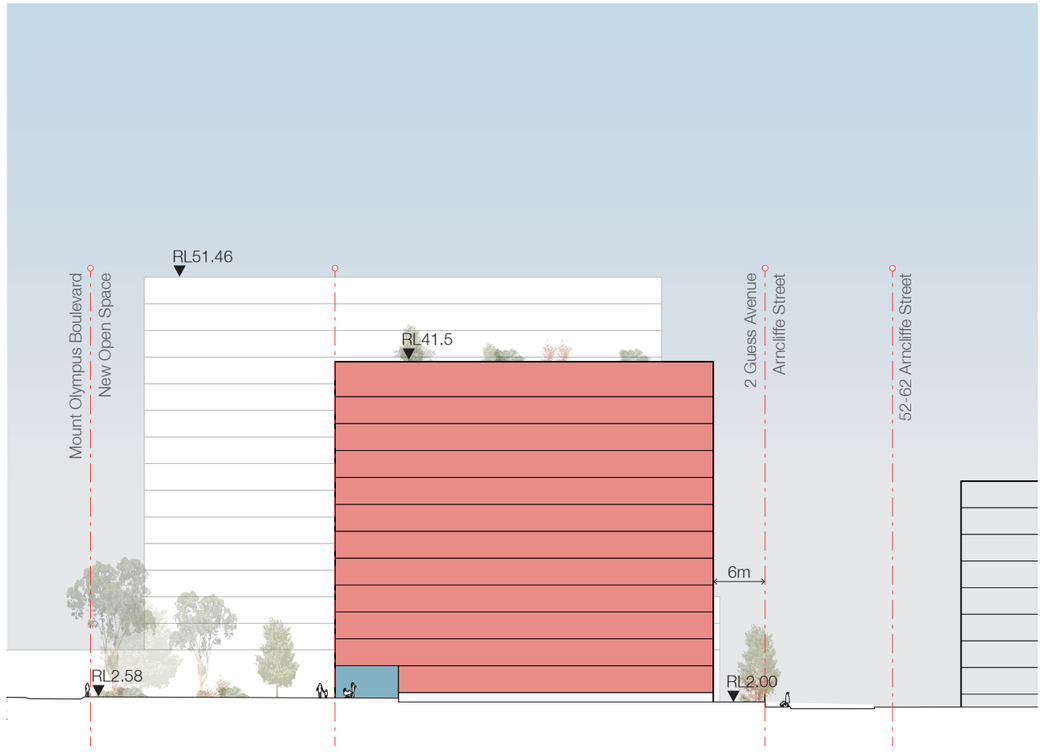


Figure 64: Section A

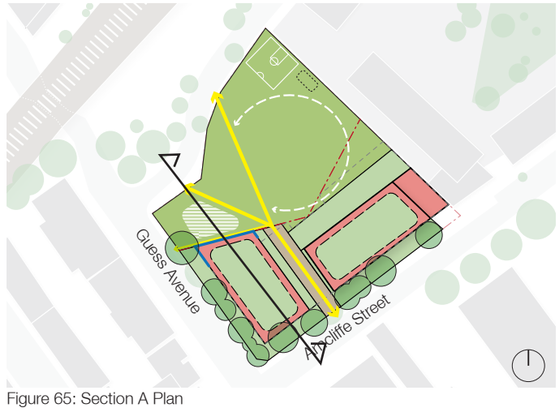


Figure 65: Section A Plan

Figure 66: Section B

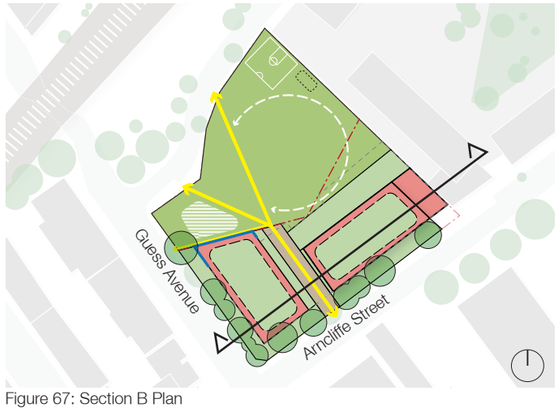


Figure 67: Section B Plan

6.4 Landscape Sections

Figure 68: Section C

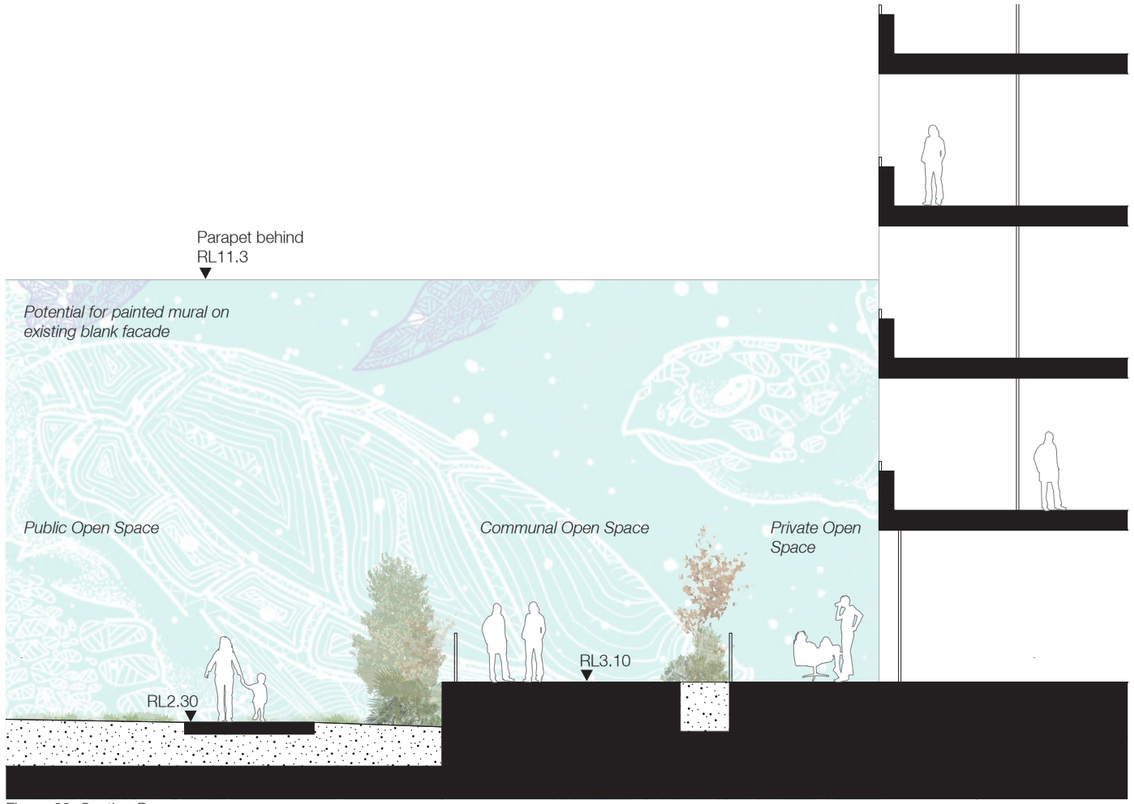


Figure 69: Section D

6.5 Solar Insolation

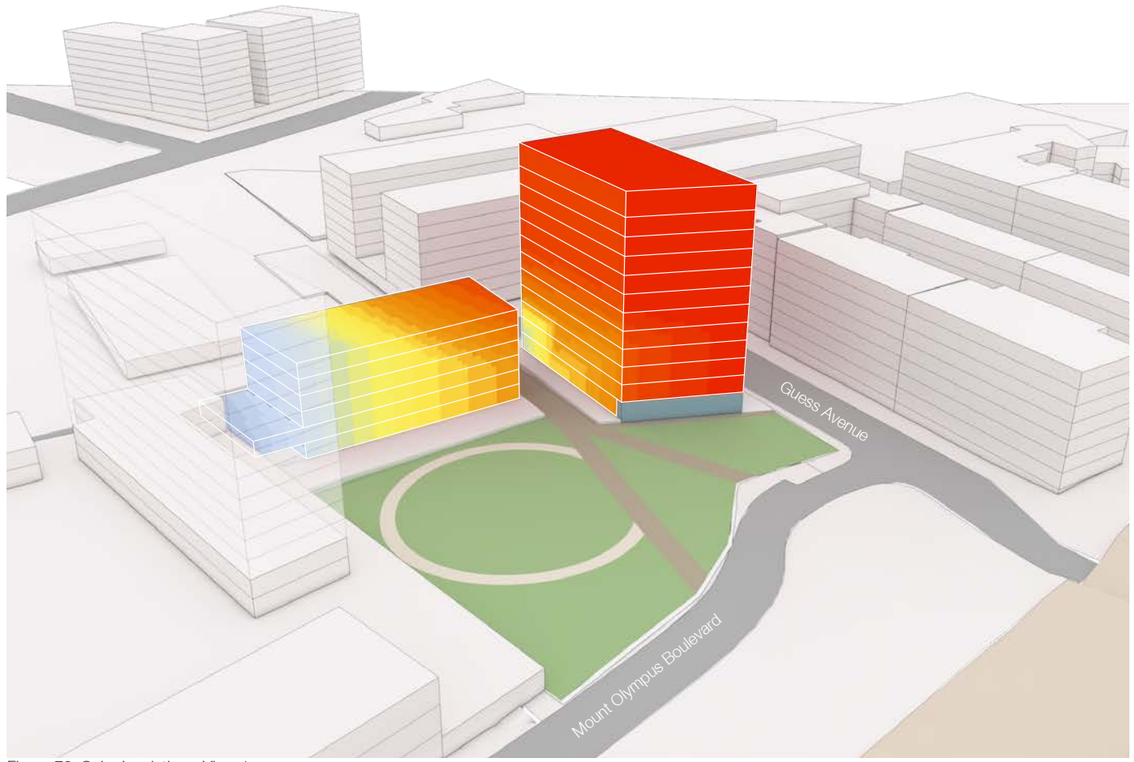


Figure 70: Solar Insolation - View 1

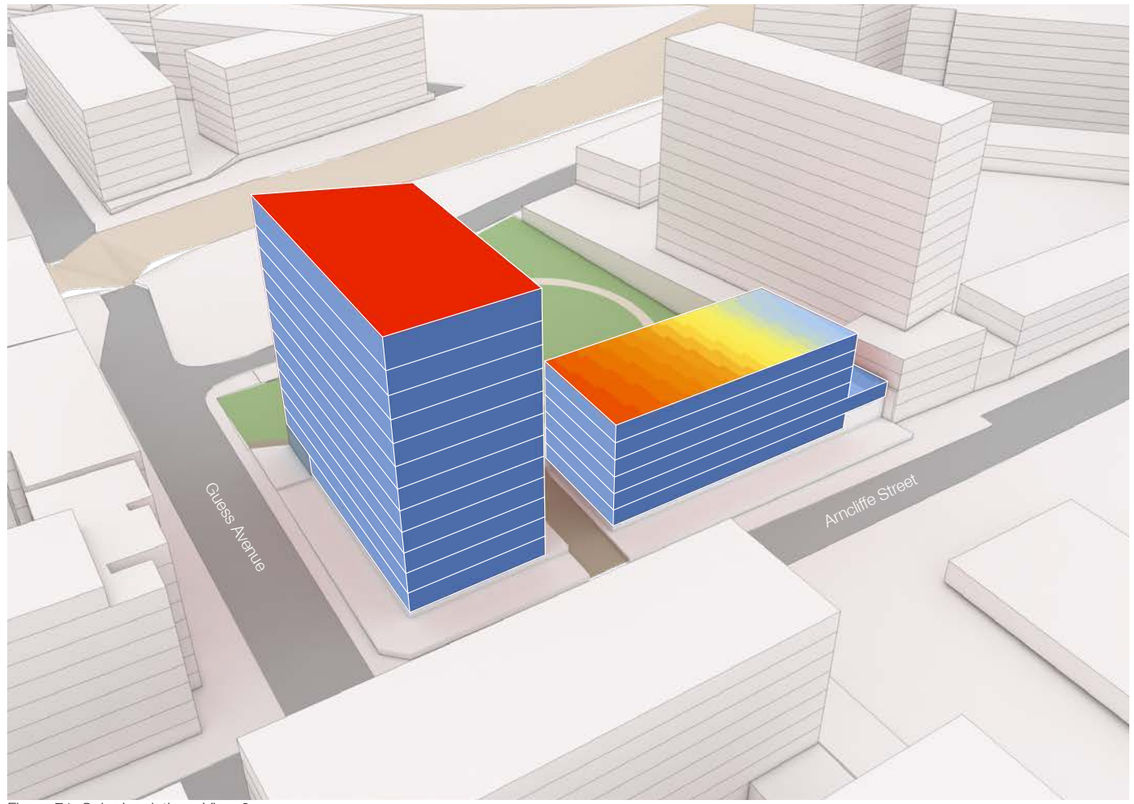
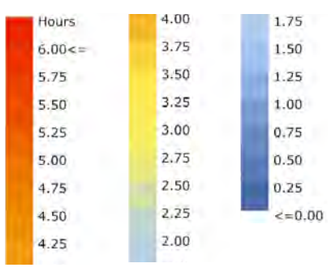


Figure 71: Solar Insolation - View 2

Key

Site Boundary

Hours of Direct Solar Access:



The 12-storey bulding is able to obtain 2+ hours of direct solar access across its northern and north-western facades with limited impact from the proposed 6-storey development or adjacent sites.

The south-east corner of the site along Arncliffe Street is impacted by overshadowing from 35B Arncliffe Street. The 9 metre setback applied to the shared eastern boundary supports better opportunities for apartments to receive 2+ hours of direct solar access.

6.6 Shadow Analysis

The proposed development in the southern portion of the site will create some additional overshadowing of buildings to its south along Guess Avenue and Arncliffe Street. This additional shadow is created by the proposed 12 storey building on the subject site's southern corner.

The proposed open space located in the north of the subject site will not be impacted by shadows from the proposed development, however is impacted by overshadowing from the existing towers and podium to the site's north-east.

Existing buildings along the southern edge of Arncliffe Street are partially affected by shadows from existing development to the north of the subject site from 9am-11am.

At 9am shadows produced by proposed buildings will sit within the existing shadows cast by 35B Arncliffe Street directly to the north-east.

Development along Guess Avenue is impacted by additional overshadowing by the proposed development from 10am-12noon. Apartments along this street should still be able to retain 2 hours of solar access from 12:30-2:30pm.

Development along Arncliffe Street is impacted by additional overshadowing from the proposed development from 10am-3pm. *Refer to 6.7 Overshadowing Impact on Adjacent Buildings*

Figure 72: Proposed 9am Shadows

Figure 73: Proposed 10am Shadows

Figure 74: Proposed 11am Shadows

Figure 75: Proposed 12 noon Shadows

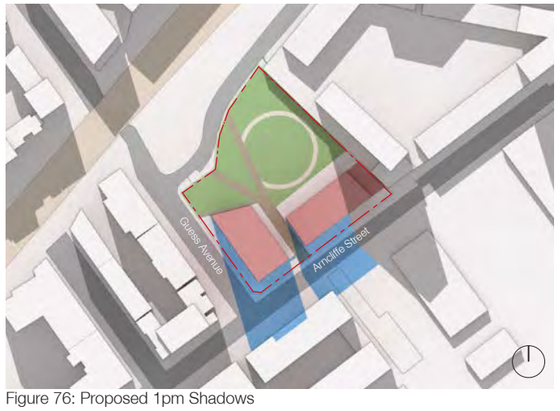


Figure 76: Proposed 1pm Shadows

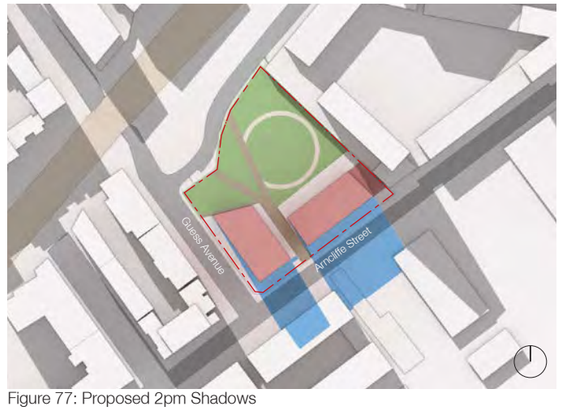


Figure 77: Proposed 2pm Shadows

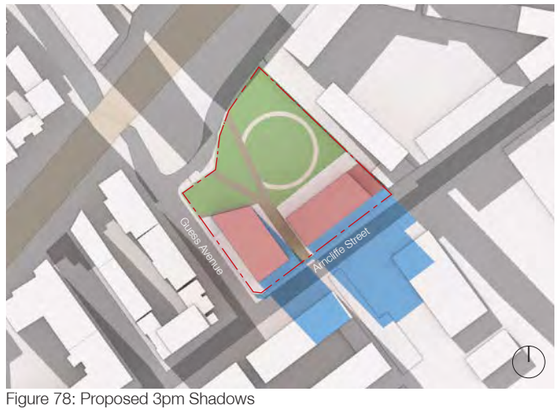


Figure 78: Proposed 3pm Shadows

Key

- Site Boundary
- Residential Uses
- Public Open Space
- Existing Shadows
- Proposed Additional Shadow

6.7 Overshadowing Impact on Adjacent Buildings

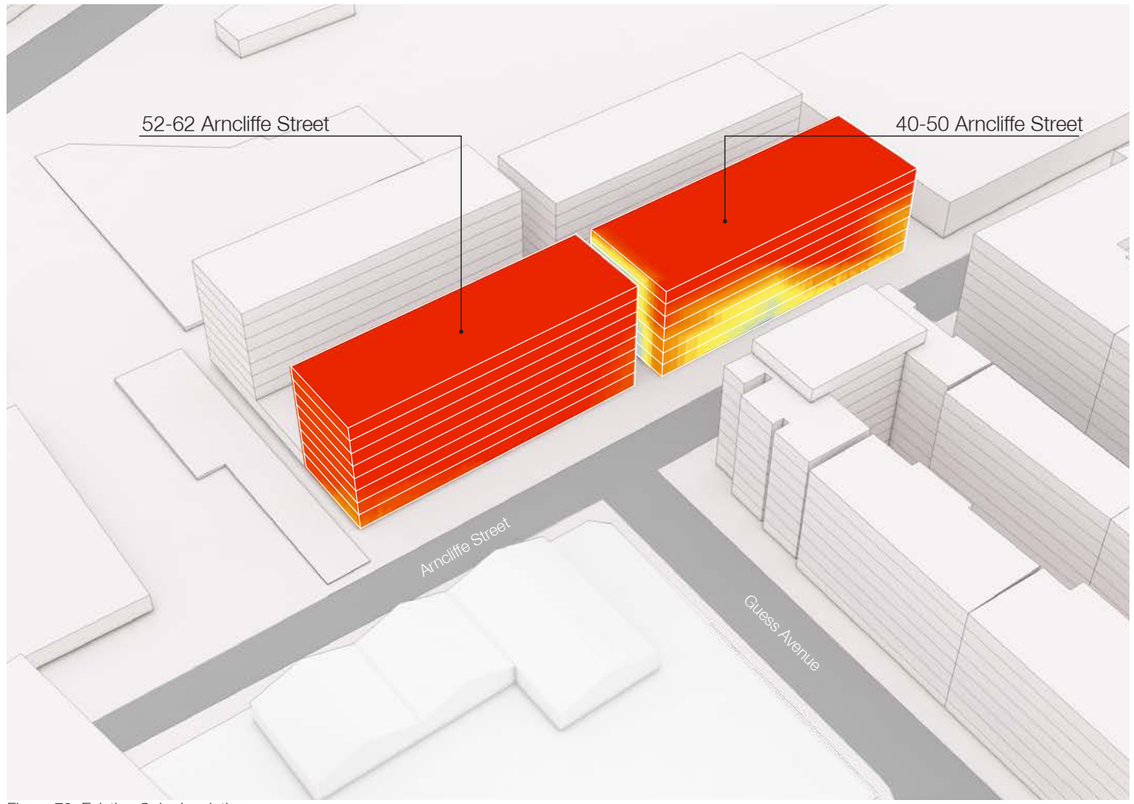


Figure 79: Existing Solar Insolation

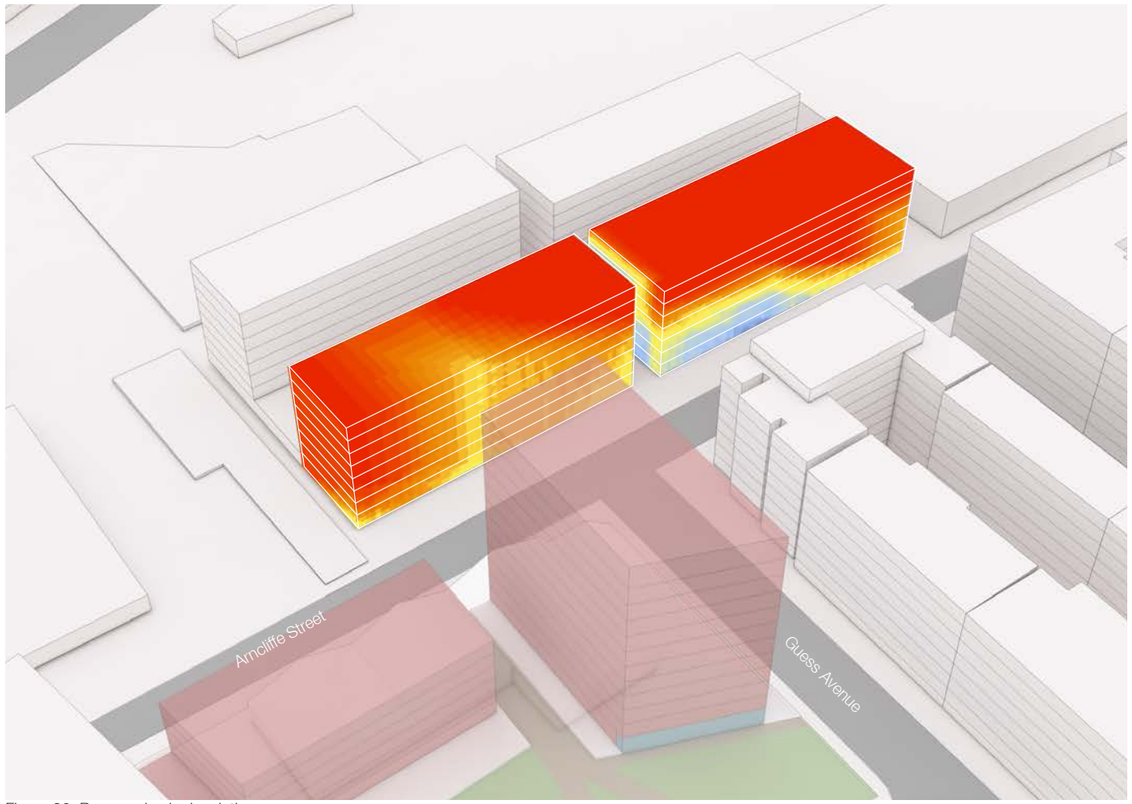
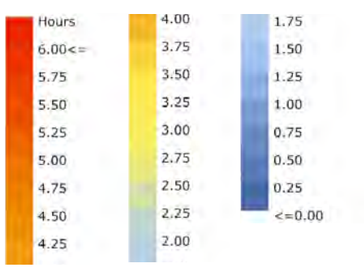


Figure 80: Proposed solar insolation

Key

Site Boundary

Hours of Direct Solar Access:



Existing residential buildings along the southern edge of Arncliffe Street currently receive 2+ hours of direct solar access during winter solstice (22 June).
The proposed building will create additional overshadowing across both buildings with the most significant impact on the lower levels of 40-50 Arncliffe Street. The majority of apartments within 40-50 Arncliffe would retain 2+ hours of first solar access. More detailed studies will be required to determine the full impact of the proposed built form on 40-50 Arncliffe Street. There is no impact on the communal open space of 40-50 Arncliffe street, located on the roof of the development.

52-62 Arncliffe Street should be able to maintain a minimum of 2+ hours of direct solar access to a minimum of 70% of its dwellings.

6.8 Indicative Building Footprints

Solar access and cross-ventilation

The adjacent indicative floor plan demonstrates one potential arrangement of apartments within the proposed built form. This particular indicative floor plan achieves approximately 60% of apartments with naturallly cross ventilated and 2+ hours of direct solar access between 9am-3pm during winter solstice. Across the development in total, 70% of apartments should be able to receive 2+ hours of direct solar access during winter solstice (22 June).

More detailed design studies would will be required to determine ADG/SEPP65 compliance across the development as a whole.

Building separation

The proposed development incorporates compliant building separations. Upper level building setbacks can be applied to the 6-storey building to achieve these requirements.

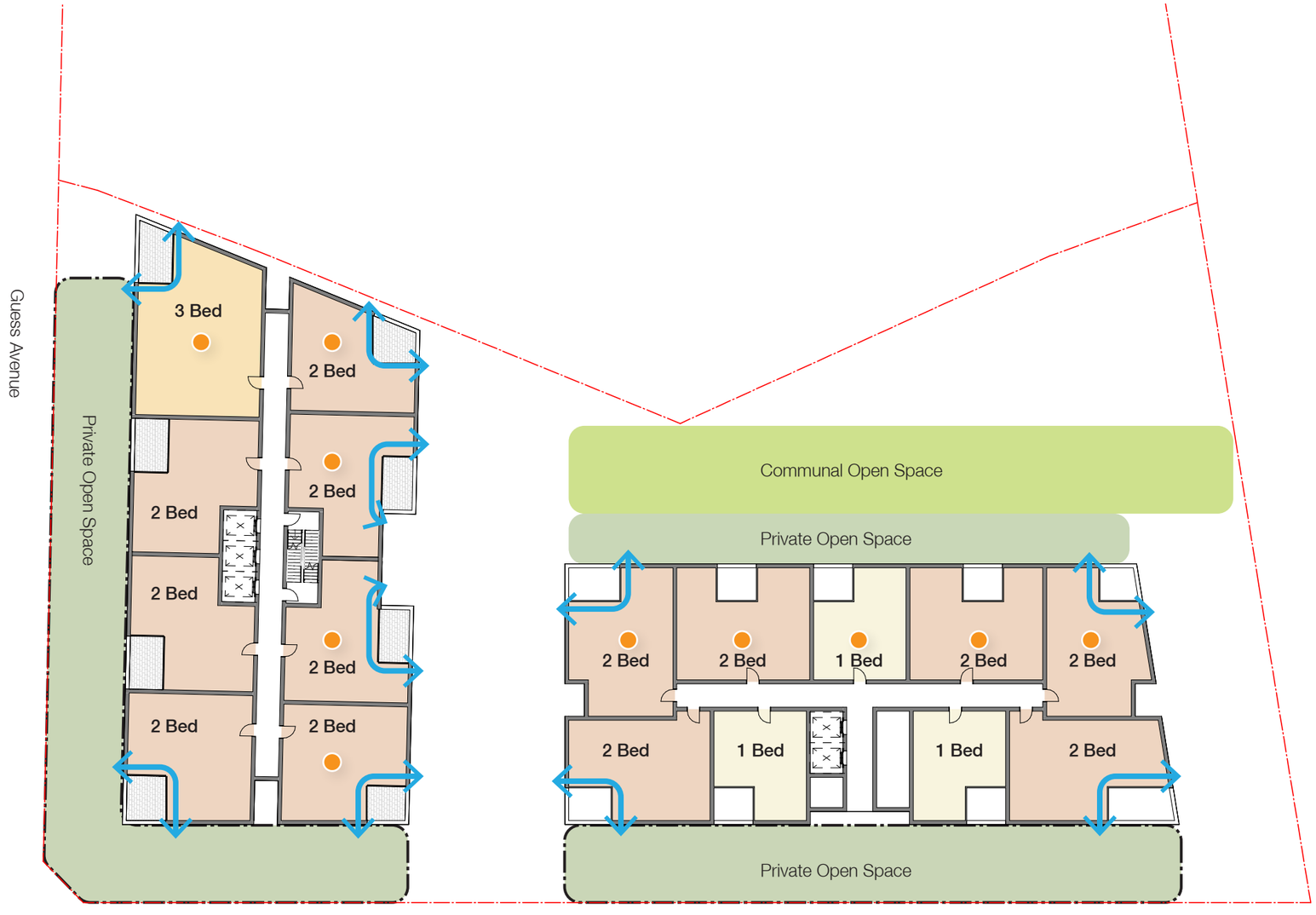
The 9m setback from the eastern boundary responds to the need to provide building separation from the adjacent site which has a west-facing residential interface above its podium.

Communal open space and deep soil

Communal open space is proposed to be provided on the rooves of both buildings. Additional communal open space is provided also at ground for the 6 storey-development adjacent to the park. It is assumed that deep soil zones would be provided within the development's six metre street setback.

Key

- Site boundary
- Cross ventilation
- 2+ hours of direct solar access
- Private open space (on ground)
- Communal open space (on ground)
- Deep soil opportunity



Indicative Floor Plans Levels 2-6

6.9 Visualisation

6.10 Visualisation

6.11 Visualisation

6.12 Conclusion and Recommendations

This urban design study highlights the potential for the rezoning of 2 Guess Avenue to deliver residential and commercial uses alongside a significant local open space at 4 Guess Avenue. The scale of the proposed space provides sufficient space to support a diversification of the open space offering in the area.

Proposed built form testing demonstrates the capacity for 2 Guess Avenue to be developed

- Consistent with the scale and character of Wolli Creek
- Alongside the delivery additional pedestrian connectivity
- The potential retention of existing mature trees along Guess Avenue and Arncliffe Street
- Embedded opportunities for active and passive surveillance to support the use and safety of the new park

Recommendations

A number of recommendations have been outlined to support the delivery of the local open space and adajcent development:

- Retention of the 4 Guess Avenue (Lot 102 DP808944) as RE1 Public Recreation
- Amendment of LEP controls applied to of 2 Guess Avenue (Lot 101, DP808944) to:
  - Land zoning - B4 Mixed Use
  - Height - 42m
  - FSR - 3:1
- Preparation of a site specific DCP to embed the following features in a future treatment of the site:
  - through-site link with qualitative and quantitative controls
  - 6m minimum setbacks from Arncliffe Street and Guess Avenue
  - Active frontage along the north-west edge of 2 Guess Avenue alongside the park coupled with a 0m minimum setback requirement
  - dedication of 423m² of 2 Guess Avenue to public open space adjacent to the northern boundary

Indicative DCP Plan

6.13 Proposed Amended LEP Maps

Proposed LEP Land Zoning Map

Key

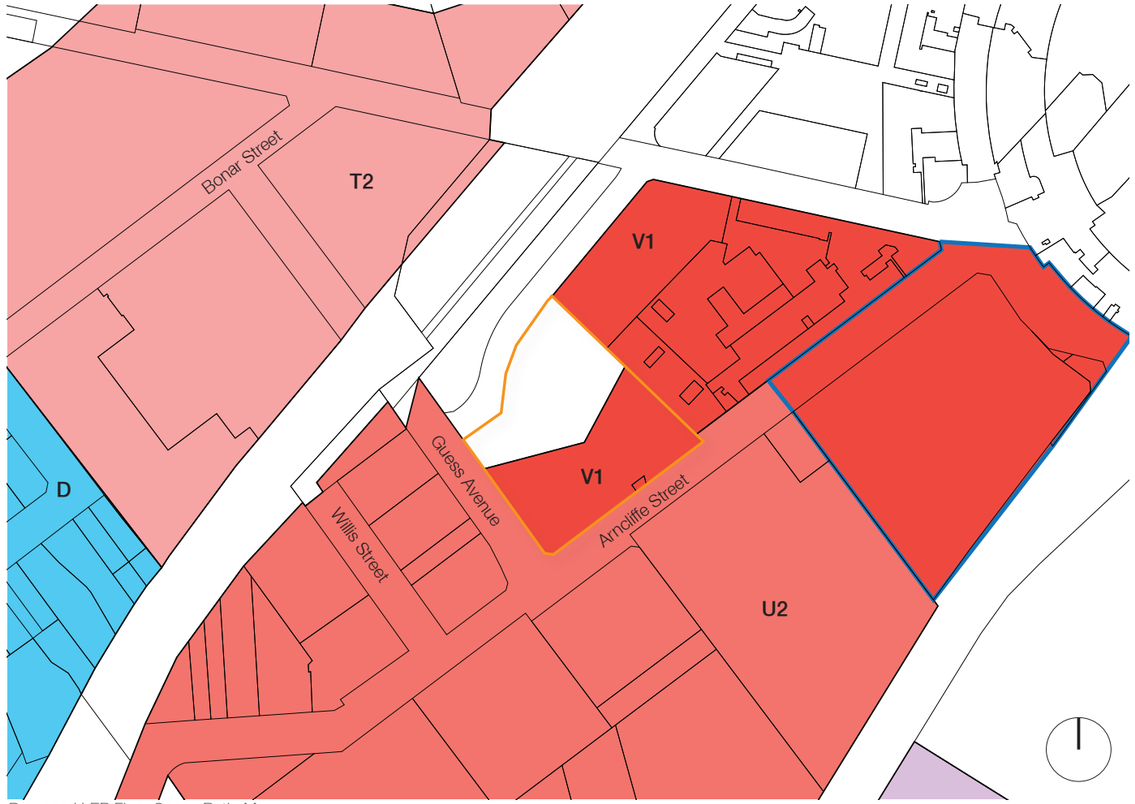
- Site Boundary
- B4 Mixed Use
- R4 High Density Residential
- R2 Low Density Residential
- RE1 Public Recreation
- SP2 Infrastructure

Proposed LEP Height of Building Map

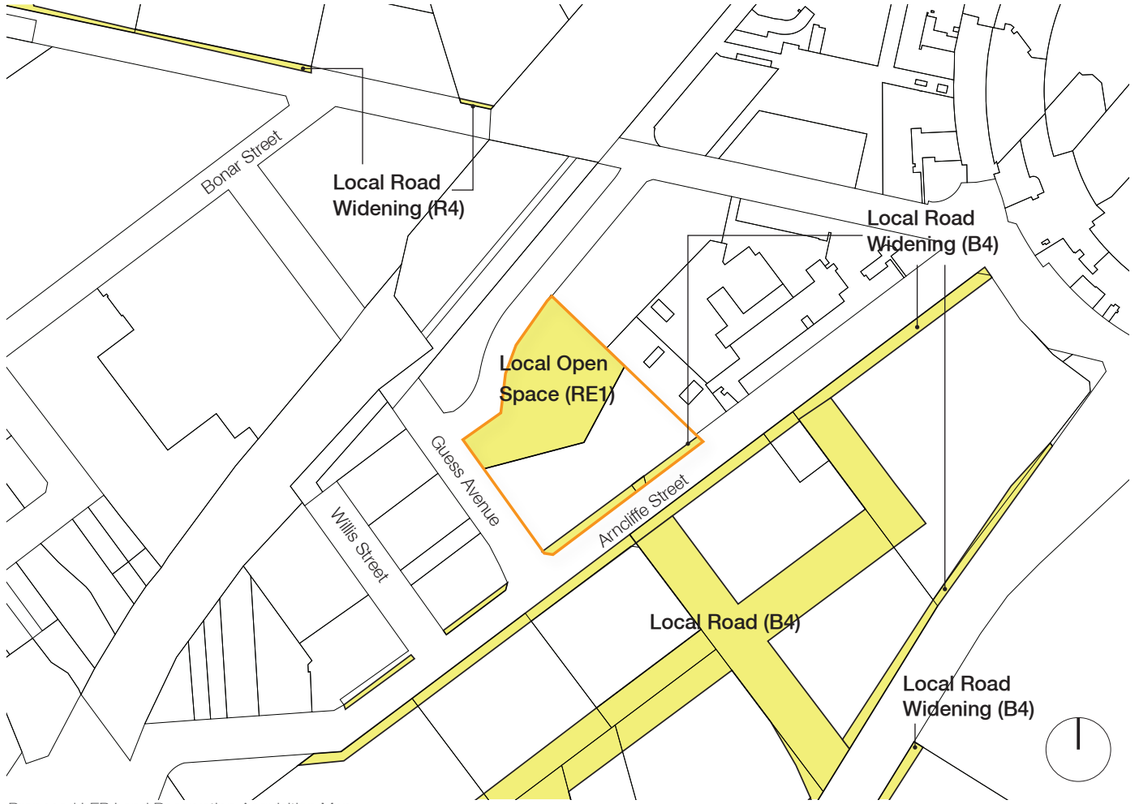
Key

- Site Boundary
- X - 46m
- W - 42m
- U1 - 31m
- T3 - 28m
- I - 8.5

6.14 Proposed Amended LEP Maps



Proposed LEP Floor Space Ratio Map



Proposed LEP Land Reservation Acquisition Map

Key

- Site Boundary
- V1 - 3:1 FSR
- U2 - 2.5:1 FSR
- T2 - 2.2:1 FSR
- D - 0.5:1
- Refer to Clause 4.4

Key

- Site Boundary
- Local Open Space (RE1)
- Local Road (B4)
- Local Road Widening (B4)
- Local Road Widening (R4)

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